

SOL003 - VNF Lifecycle Management interface

Overview

SOL003 - VNF Lifecycle Management interface definition IMPORTANT: Please note that this file might be not aligned to the current version of the ETSI Group Specification it refers to. In case of discrepancies the published ETSI Group Specification takes precedence. In clause 4.3.2 of ETSI GS NFV-SOL 003 v2.4.1, an attribute-based filtering mechanism is defined. This mechanism is currently not included in the corresponding OpenAPI design for this GS version. Changes to the attribute-based filtering mechanism are being considered in v2.5.1 of this GS for inclusion in the corresponding future ETSI NFV OpenAPI design. Please report bugs to https://forge.etsi.org/bugzilla/buglist.cgi?component=Nfv-Openapis&list_id=61&product=NFV&resolution=

Version information

Version : 1.1.0

License information

License : ETSI Forge copyright notice

License URL : <https://forge.etsi.org/etsi-forge-copyright-notice.txt>

Terms of service : null

URI scheme

BasePath : /vnflcm/v1

Schemes : HTTPS

Consumes

- `application/json`

Produces

- `application/json`

External Docs

Description : ETSI GS NFV-SOL 003 V2.4.1

URL : http://www.etsi.org/deliver/etsi_gs/NFV-SOL/001_099/003/02.04.01_60/gs_NFV-SOL003v020401p.pdf

Paths

POST /subscriptions

Description

Subscribe

The POST method creates a new subscription. Creation of two subscription resources with the same callbackURI and the same filter can result in performance degradation and will provide duplicates of notifications to the NFVO, and might make sense only in very rare use cases. Consequently, the VNFM may either allow creating a subscription resource if another subscription resource with the same filter and callbackUri already exists (in which case it shall return the “201 Created” response code), or may decide to not create a duplicate subscription resource (in which case it shall return a “303 See Other” response code referencing the existing subscription resource with the same filter and callbackUri).

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string
Body	LccnSubscriptionRequest <i>required</i>	Details of the subscription to be created.	LccnSubscriptionRequest

LccnSubscriptionRequest

Name	Description	Schema
authentication <i>optional</i>		authentication
callbackUri <i>required</i>	String formatted according to IETF RFC 3986.	string

Name	Description	Schema
filter <i>optional</i>	This type represents a subscription filter related to notifications about VNF lifecycle changes. At a particular nesting level in the filter structure, the following applies: All attributes shall match in order for the filter to match (logical "and" between different filter attributes). If an attribute is an array, the attribute shall match if at least one of the values in the array matches (logical "or" between the values of one filter attribute).	filter

authentication

Name	Description	Schema
authType <i>required</i>	Defines the types of Authentication / Authorization which the API consumer is willing to accept when receiving a notification. Permitted values: * BASIC: In every HTTP request to the notification endpoint, use HTTP Basic authentication with the client credentials. * OAUTH2_CLIENT_CREDENTIALS: In every HTTP request to the notification endpoint, use an OAuth 2.0 Bearer token, obtained using the client credentials grant type. * TLS_CERT: Every HTTP request to the notification endpoint is sent over a mutually authenticated TLS session, i.e. not only the server is authenticated, but also the client is authenticated during the TLS tunnel setup.	< enum (BASIC, OAUTH2_CLIENT_CREDENTIALS, TLS_CERT) > array
paramsBasic <i>optional</i>	Parameters for authentication/authorization using BASIC. Shall be present if authType is "BASIC" and the contained information has not been provisioned out of band. Shall be absent otherwise.	paramsBasic
paramsOauth2ClientCredentials <i>optional</i>	Parameters for authentication/authorization using OAUTH2_CLIENT_CREDENTIALS. Shall be present if authType is "OAUTH2_CLIENT_CREDENTIALS" and the contained information has not been provisioned out of band. Shall be absent otherwise.	paramsOauth2ClientCredentials

paramsBasic

Name	Description	Schema
password <i>optional</i>	Password to be used in HTTP Basic authentication. Shall be present if it has not been provisioned out of band.	string

Name	Description	Schema
userName <i>optional</i>	Username to be used in HTTP Basic authentication. Shall be present if it has not been provisioned out of band.	string

paramsOauth2ClientCredentials

Name	Description	Schema
clientId <i>optional</i>	Client identifier to be used in the access token request of the OAuth 2.0 client credentials grant type. Shall be present if it has not been provisioned out of band. The clientId and clientPassword passed in a subscription shall not be the same as the clientId and clientPassword that are used to obtain authorization for API requests. Client credentials may differ between subscriptions. The value of clientPassword should be generated by a random process.	string
clientPassword <i>optional</i>	Client password to be used in the access token request of the OAuth 2.0 client credentials grant type. Shall be present if it has not been provisioned out of band. The clientId and clientPassword passed in a subscription shall not be the same as the clientId and clientPassword that are used to obtain authorization for API requests. Client credentials may differ between subscriptions. The value of clientPassword should be generated by a random process.	string
tokenEndpoint <i>optional</i>	String formatted according to IETF RFC 3986.	string

filter

Name	Description	Schema
notificationTypes <i>optional</i>	Match particular notification types. Permitted values: * VnfLcmOperationOccurrenceNotification * VnfIdentifierCreationNotification * VnfIdentifierDeletionNotification The permitted values of the "notificationTypes" attribute are spelled exactly as the names of the notification types to facilitate automated code generation systems.	< enum (VnfLcmOperationOccurrenceNotification, VnfIdentifierCreationNotification, VnfIdentifierDeletionNotification) > array

Name	Description	Schema
operationStates <i>optional</i>	Match particular LCM operation state values as reported in notifications of type VnfLcmOperationOccurrenceNotification. May be present if the "notificationTypes" attribute contains the value "VnfLcmOperationOccurrenceNotification", and shall be absent otherwise.	< enum (STARTING, PROCESSING, COMPLETED, FAILED_TEMP, FAILED, ROLLING_BACK, ROLLED_BACK) > array
operationTypes <i>optional</i>	Match particular VNF lifecycle operation types for the notification of type VnfLcmOperationOccurrenceNotification. May be present if the "notificationTypes" attribute contains the value "VnfLcmOperationOccurrenceNotification", and shall be absent otherwise.	< enum (INSTANTIATE, SCALE, SCALE_TO_LEVEL, CHANGE_FLAVOUR, TERMINATE, HEAL, OPERATE, CHANGE_EXT_CONN, MODIFY_INFO) > array
vnfInstanceSubscriptionFilter <i>optional</i>	This type represents subscription filter criteria to match VNF instances.	vnfInstanceSubscriptionFilter

vnfInstanceSubscriptionFilter

Name	Description	Schema
vnfInstanceIds <i>optional</i>	If present, match VNF instances with an instance identifier listed in this attribute. The attributes "vnfInstanceIds" and "vnfInstanceNames" are alternatives to reference to particular VNF Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array
vnfInstanceNames <i>optional</i>	If present, match VNF instances with a VNF Instance Name listed in this attribute. The attributes "vnfInstanceIds" and "vnfInstanceNames" are alternatives to reference to particular VNF Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array

Name	Description	Schema
vnfProductsFromProviders <i>optional</i>	If present, match VNF instances that belong to VNF products from certain providers. The attributes "vnfdIds" and "vnfProductsFromProviders" are alternatives to reference to VNF instances that are based on certain VNFDs in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< vnfProductsFromProviders > array
vnfdIds <i>optional</i>	If present, match VNF instances that were created based on a VNFD identified by one of the vnfdId values listed in this attribute. The attributes "vnfdIds" and "vnfProductsFromProviders" are alternatives to reference to VNF instances that are based on certain VNFDs in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array

vnfProductsFromProviders

Name	Description	Schema
vnfProducts <i>optional</i>	If present, match VNF instances that belong to VNF products with certain product names, from one particular provider.	< vnfProducts > array
vnfProvider <i>required</i>	Name of the VNF provider to match.	string

vnfProducts

Name	Description	Schema
versions <i>optional</i>	If present, match VNF instances that belong to VNF products with certain versions and a certain product name, from one particular provider.	< versions > array
vnfProductName <i>required</i>	Name of the VNF product to match.	string

versions

Name	Description	Schema
vnfSoftwareVersion <i>required</i>	A version.	string
vnfdVersions <i>optional</i>	If present, match VNF instances that belong to VNF products with certain VNFD versions, a certain software version and a certain product name, from one particular provider.	< string > array

Responses

HTTP Code	Description	Schema
201	<p>Created The subscription was created successfully. The response body shall contain a representation of the created subscription resource. The HTTP response shall include a "Location" HTTP header that points to the created subscription resource.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 201
303	<p>See Other A subscription with the same callbackURI and the same filter already exists and the policy of the VNFM is to not create redundant subscriptions. The HTTP response shall include a "Location" HTTP header that contains the resource URI of the existing subscription resource. The response body shall be empty.</p> <p>Headers :</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content

HTTP Code	Description	Schema
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. Specifically in case of this task resource, the reason can also be that the task is not supported for the VNF LCM operation occurrence represented by the parent resource, and that the task resource consequently does not exist. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406

HTTP Code	Description	Schema
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 201

Name	Description	Schema
_links <i>required</i>	Links to resources related to this resource.	_links
callbackUri <i>required</i>	String formatted according to IETF RFC 3986.	string
filter <i>optional</i>	This type represents a subscription filter related to notifications about VNF lifecycle changes. At a particular nesting level in the filter structure, the following applies: All attributes shall match in order for the filter to match (logical "and" between different filter attributes). If an attribute is an array, the attribute shall match if at least one of the values in the array matches (logical "or" between the values of one filter attribute).	filter
id <i>required</i>	An identifier with the intention of being globally unique.	string

[_links](#)

Name	Description	Schema
self <i>required</i>	This type represents a link to a resource.	self

self

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

filter

Name	Description	Schema
notificationTypes <i>optional</i>	Match particular notification types. Permitted values: * VnfLcmOperationOccurrenceNotification VnfIdentifierCreationNotification VnfIdentifierDeletionNotification The permitted values of the "notificationTypes" attribute are spelled exactly as the names of the notification types to facilitate automated code generation systems.	< enum (VnfLcmOperationOccurrenceNotification, VnfIdentifierCreationNotification, VnfIdentifierDeletionNotification) > array
operationStates <i>optional</i>	Match particular LCM operation state values as reported in notifications of type VnfLcmOperationOccurrenceNotification. May be present if the "notificationTypes" attribute contains the value "VnfLcmOperationOccurrenceNotification", and shall be absent otherwise.	< enum (STARTING, PROCESSING, COMPLETED, FAILED_TEMP, FAILED, ROLLING_BACK, ROLLED_BACK) > array
operationTypes <i>optional</i>	Match particular VNF lifecycle operation types for the notification of type VnfLcmOperationOccurrenceNotification. May be present if the "notificationTypes" attribute contains the value "VnfLcmOperationOccurrenceNotification", and shall be absent otherwise.	< enum (INSTANTIATE, SCALE, SCALE_TO_LEVEL, CHANGE_FLAVOUR, TERMINATE, HEAL, OPERATE, CHANGE_EXT_CONN, MODIFY_INFO) > array

Name	Description	Schema
vnfInstanceSubscriptionFilter <i>optional</i>	This type represents subscription filter criteria to match VNF instances.	vnfInstanceSubscriptionFilter

vnfInstanceSubscriptionFilter

Name	Description	Schema
vnfInstanceIds <i>optional</i>	If present, match VNF instances with an instance identifier listed in this attribute. The attributes "vnfInstanceIds" and "vnfInstanceNames" are alternatives to reference to particular VNF Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array
vnfInstanceNames <i>optional</i>	If present, match VNF instances with a VNF Instance Name listed in this attribute. The attributes "vnfInstanceIds" and "vnfInstanceNames" are alternatives to reference to particular VNF Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array
vnfProductsFromProviders <i>optional</i>	If present, match VNF instances that belong to VNF products from certain providers. The attributes "vnfdIds" and "vnfProductsFromProviders" are alternatives to reference to VNF instances that are based on certain VNFDs in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< vnfProductsFromProviders > array
vnfdIds <i>optional</i>	If present, match VNF instances that were created based on a VNFD identified by one of the vnfdId values listed in this attribute. The attributes "vnfdIds" and "vnfProductsFromProviders" are alternatives to reference to VNF instances that are based on certain VNFDs in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array

vnfProductsFromProviders

Name	Description	Schema
vnfProducts <i>optional</i>	If present, match VNF instances that belong to VNF products with certain product names, from one particular provider.	< vnfProducts > array
vnfProvider <i>required</i>	Name of the VNF provider to match.	string

vnfProducts

Name	Description	Schema
versions <i>optional</i>	If present, match VNF instances that belong to VNF products with certain versions and a certain product name, from one particular provider.	< versions > array
vnfProductName <i>required</i>	Name of the VNF product to match.	string

versions

Name	Description	Schema
vnfSoftwareVersion <i>required</i>	A version.	string
vnfdVersions <i>optional</i>	If present, match VNF instances that belong to VNF products with certain VNFD versions, a certain software version and a certain product name, from one particular provider.	< string > array

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)

Name	Description	Schema
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

GET /subscriptions

Description

Query Subscription Information

The GET method queries the list of active subscriptions of the functional block that invokes the method. It can be used e.g. for resynchronization after error situations.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string

Responses

HTTP Code	Description	Schema
200	<p>OK The list of subscriptions was queried successfully. The response body shall contain the representations of all active subscriptions of the functional block that invokes the method.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 200
400	<p>Bad Request Invalid attribute-based filtering parameters. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. Specifically in case of this task resource, the reason can also be that the task is not supported for the VNF LCM operation occurrence represented by the parent resource, and that the task resource consequently does not exist. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406

HTTP Code	Description	Schema
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 200

Name	Description	Schema
_links <i>required</i>	Links to resources related to this resource.	_links
callbackUri <i>required</i>	String formatted according to IETF RFC 3986.	string
filter <i>optional</i>	This type represents a subscription filter related to notifications about VNF lifecycle changes. At a particular nesting level in the filter structure, the following applies: All attributes shall match in order for the filter to match (logical "and" between different filter attributes). If an attribute is an array, the attribute shall match if at least one of the values in the array matches (logical "or" between the values of one filter attribute).	filter
id <i>required</i>	An identifier with the intention of being globally unique.	string

[_links](#)

Name	Description	Schema
self <i>required</i>	This type represents a link to a resource.	self

self

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

filter

Name	Description	Schema
notificationTypes <i>optional</i>	Match particular notification types. Permitted values: * VnfLcmOperationOccurrenceNotification, VnfIdentifierCreationNotification, VnfIdentifierDeletionNotification The permitted values of the "notificationTypes" attribute are spelled exactly as the names of the notification types to facilitate automated code generation systems.	< enum (VnfLcmOperationOccurrenceNotification, VnfIdentifierCreationNotification, VnfIdentifierDeletionNotification) > array
operationStates <i>optional</i>	Match particular LCM operation state values as reported in notifications of type VnfLcmOperationOccurrenceNotification. May be present if the "notificationTypes" attribute contains the value "VnfLcmOperationOccurrenceNotification", and shall be absent otherwise.	< enum (STARTING, PROCESSING, COMPLETED, FAILED_TEMP, FAILED, ROLLING_BACK, ROLLED_BACK) > array
operationTypes <i>optional</i>	Match particular VNF lifecycle operation types for the notification of type VnfLcmOperationOccurrenceNotification. May be present if the "notificationTypes" attribute contains the value "VnfLcmOperationOccurrenceNotification", and shall be absent otherwise.	< enum (INSTANTIATE, SCALE, SCALE_TO_LEVEL, CHANGE_FLAVOUR, TERMINATE, HEAL, OPERATE, CHANGE_EXT_CONN, MODIFY_INFO) > array

Name	Description	Schema
vnfInstanceSubscriptionFilter <i>optional</i>	This type represents subscription filter criteria to match VNF instances.	vnfInstanceSubscriptionFilter

vnfInstanceSubscriptionFilter

Name	Description	Schema
vnfInstanceIds <i>optional</i>	If present, match VNF instances with an instance identifier listed in this attribute. The attributes "vnfInstanceIds" and "vnfInstanceNames" are alternatives to reference to particular VNF Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array
vnfInstanceNames <i>optional</i>	If present, match VNF instances with a VNF Instance Name listed in this attribute. The attributes "vnfInstanceIds" and "vnfInstanceNames" are alternatives to reference to particular VNF Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array
vnfProductsFromProviders <i>optional</i>	If present, match VNF instances that belong to VNF products from certain providers. The attributes "vnfdIds" and "vnfProductsFromProviders" are alternatives to reference to VNF instances that are based on certain VNFs in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< vnfProductsFromProviders > array
vnfdIds <i>optional</i>	If present, match VNF instances that were created based on a VNF identified by one of the vnfdId values listed in this attribute. The attributes "vnfdIds" and "vnfProductsFromProviders" are alternatives to reference to VNF instances that are based on certain VNFs in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array

vnfProductsFromProviders

Name	Description	Schema
vnfProducts <i>optional</i>	If present, match VNF instances that belong to VNF products with certain product names, from one particular provider.	< vnfProducts > array
vnfProvider <i>required</i>	Name of the VNF provider to match.	string

vnfProducts

Name	Description	Schema
versions <i>optional</i>	If present, match VNF instances that belong to VNF products with certain versions and a certain product name, from one particular provider.	< versions > array
vnfProductName <i>required</i>	Name of the VNF product to match.	string

versions

Name	Description	Schema
vnfSoftwareVersion <i>required</i>	A version.	string
vnfdVersions <i>optional</i>	If present, match VNF instances that belong to VNF products with certain VNFD versions, a certain software version and a certain product name, from one particular provider.	< string > array

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)

Name	Description	Schema
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

GET /subscriptions/{subscriptionId}

Description

Query Subscription Information

The GET method retrieves information about a subscription by reading an individual subscription resource.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string

Type	Name	Description	Schema
Path	subscriptionId <i>required</i>	Identifier of this subscription. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new subscription resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string

Responses

HTTP Code	Description	Schema
200	<p>OK The operation has completed successfully. The response body shall contain a representation of the subscription resource.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 200

HTTP Code	Description	Schema
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. Specifically in case of this task resource, the reason can also be that the task is not supported for the VNF LCM operation occurrence represented by the parent resource, and that the task resource consequently does not exist. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406

HTTP Code	Description	Schema
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 200

Name	Description	Schema
_links <i>required</i>	Links to resources related to this resource.	_links
callbackUri <i>required</i>	String formatted according to IETF RFC 3986.	string
filter <i>optional</i>	This type represents a subscription filter related to notifications about VNF lifecycle changes. At a particular nesting level in the filter structure, the following applies: All attributes shall match in order for the filter to match (logical "and" between different filter attributes). If an attribute is an array, the attribute shall match if at least one of the values in the array matches (logical "or" between the values of one filter attribute).	filter
id <i>required</i>	An identifier with the intention of being globally unique.	string

[_links](#)

Name	Description	Schema
self <i>required</i>	This type represents a link to a resource.	self

self

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

filter

Name	Description	Schema
notificationTypes <i>optional</i>	Match particular notification types. Permitted values: * VnfLcmOperationOccurrenceNotification VnfIdentifierCreationNotification VnfIdentifierDeletionNotification The permitted values of the "notificationTypes" attribute are spelled exactly as the names of the notification types to facilitate automated code generation systems.	< enum (VnfLcmOperationOccurrenceNotification, VnfIdentifierCreationNotification, VnfIdentifierDeletionNotification) > array
operationStates <i>optional</i>	Match particular LCM operation state values as reported in notifications of type VnfLcmOperationOccurrenceNotification. May be present if the "notificationTypes" attribute contains the value "VnfLcmOperationOccurrenceNotification", and shall be absent otherwise.	< enum (STARTING, PROCESSING, COMPLETED, FAILED_TEMP, FAILED, ROLLING_BACK, ROLLED_BACK) > array
operationTypes <i>optional</i>	Match particular VNF lifecycle operation types for the notification of type VnfLcmOperationOccurrenceNotification. May be present if the "notificationTypes" attribute contains the value "VnfLcmOperationOccurrenceNotification", and shall be absent otherwise.	< enum (INSTANTIATE, SCALE, SCALE_TO_LEVEL, CHANGE_FLAVOUR, TERMINATE, HEAL, OPERATE, CHANGE_EXT_CONN, MODIFY_INFO) > array

Name	Description	Schema
vnfInstanceSubscriptionFilter <i>optional</i>	This type represents subscription filter criteria to match VNF instances.	vnfInstanceSubscriptionFilter

vnfInstanceSubscriptionFilter

Name	Description	Schema
vnfInstanceIds <i>optional</i>	If present, match VNF instances with an instance identifier listed in this attribute. The attributes "vnfInstanceIds" and "vnfInstanceNames" are alternatives to reference to particular VNF Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array
vnfInstanceNames <i>optional</i>	If present, match VNF instances with a VNF Instance Name listed in this attribute. The attributes "vnfInstanceIds" and "vnfInstanceNames" are alternatives to reference to particular VNF Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array
vnfProductsFromProviders <i>optional</i>	If present, match VNF instances that belong to VNF products from certain providers. The attributes "vnfdIds" and "vnfProductsFromProviders" are alternatives to reference to VNF instances that are based on certain VNFDs in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< vnfProductsFromProviders > array
vnfdIds <i>optional</i>	If present, match VNF instances that were created based on a VNFD identified by one of the vnfdId values listed in this attribute. The attributes "vnfdIds" and "vnfProductsFromProviders" are alternatives to reference to VNF instances that are based on certain VNFDs in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	< string > array

vnfProductsFromProviders

Name	Description	Schema
vnfProducts <i>optional</i>	If present, match VNF instances that belong to VNF products with certain product names, from one particular provider.	< vnfProducts > array
vnfProvider <i>required</i>	Name of the VNF provider to match.	string

vnfProducts

Name	Description	Schema
versions <i>optional</i>	If present, match VNF instances that belong to VNF products with certain versions and a certain product name, from one particular provider.	< versions > array
vnfProductName <i>required</i>	Name of the VNF product to match.	string

versions

Name	Description	Schema
vnfSoftwareVersion <i>required</i>	A version.	string
vnfdVersions <i>optional</i>	If present, match VNF instances that belong to VNF products with certain VNFD versions, a certain software version and a certain product name, from one particular provider.	< string > array

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)

Name	Description	Schema
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

DELETE /subscriptions/{subscriptionId}

Description

Terminate Subscription

The DELETE method terminates an individual subscription.

Parameters

Type	Name	Description	Schema
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string

Type	Name	Description	Schema
Path	subscriptionId <i>required</i>	Identifier of this subscription. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new subscription resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string

Responses

HTTP Code	Description	Schema
204	<p>No Content The subscription resource was deleted successfully. The response body shall be empty.</p> <p>Headers : WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. Specifically in case of this task resource, the reason can also be that the task is not supported for the VNF LCM operation occurrence represented by the parent resource, and that the task resource consequently does not exist. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_instances

Description

Create VNF Identifier

The POST method creates a new VNF instance resource.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string

Type	Name	Description	Schema
Body	createVnfRequest <i>required</i>	The VNF creation parameters	createVnfRequest

createVnfRequest

Name	Description	Schema
vnfInstanceDescription <i>optional</i>	Human-readable description of the VNF instance to be created.	string
vnfInstanceName <i>optional</i>	Human-readable name of the VNF instance to be created.	string
vnfId <i>required</i>	An identifier with the intention of being globally unique.	string

Responses

HTTP Code	Description	Schema
201	<p>A VNF Instance identifier was created successfully</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 201

HTTP Code	Description	Schema
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict Another request is in progress that prohibits the fulfilment of the current request, or the current resource state is inconsistent with the request.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409

HTTP Code	Description	Schema
416	<p>Requested Range Not Satisfiable This code is returned if the requested byte range in the Range HTTP header is not present in the requested resource.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 416
422	<p>Unprocessable Entity If the payload body of a request contains syntactically correct data (e.g. well-formed JSON) but the data cannot be processed (e.g. because it fails validation against a schema), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. NOTE 2: This error response code is only applicable for methods that have a request body.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 422
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 201

Name	Description	Schema
_links <i>optional</i>	Links to resources related to this resource.	_links

Name	Description	Schema
extensions <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string
instantiatedVnfInfo <i>optional</i>	Information specific to an instantiated VNF instance. This attribute shall be present if the instantiateState attribute value is INSTANTIATED.	instantiatedVnfInfo
instantiationState <i>required</i>	The instantiation state of the VNF.	enum (NOT_INSTANTIATED, INSTANTIATED)
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimConnectionInfo <i>optional</i>	Information about VIM connections to be used for managing the resources for the VNF instance. This attribute shall only be supported and present if VNF-related resource management in direct mode is applicable. This attribute can be modified with the PATCH method.	< vimConnectionInfo > array
vnfConfigurableProperties <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vnfInstanceDescription <i>optional</i>	Human-readable description of the VNF instance. This attribute can be modified with the PATCH method.	string
vnfInstanceName <i>optional</i>	Name of the VNF instance. This attribute can be modified with the PATCH method.	string
vnfPkgId <i>required</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
vnfProductName <i>required</i>	Name to identify the VNF Product. The value is copied from the VNFD.	string
vnfProvider <i>required</i>	Provider of the VNF and the VNFD. The value is copied from the VNFD.	string
vnfSoftwareVersion <i>required</i>	A Version.	string
vnfdId <i>required</i>	An identifier with the intention of being globally unique.	string
vnfdVersion <i>required</i>	A Version.	string

links

Name	Description	Schema
changeExtConn <i>optional</i>	This type represents a link to a resource.	changeExtConn
changeFlavour <i>optional</i>	This type represents a link to a resource.	changeFlavour
heal <i>optional</i>	This type represents a link to a resource.	heal
indicators <i>optional</i>	This type represents a link to a resource.	indicators
instantiate <i>optional</i>	This type represents a link to a resource.	instantiate
operate <i>optional</i>	This type represents a link to a resource.	operate
scale <i>optional</i>	This type represents a link to a resource.	scale

Name	Description	Schema
scaleToLevel <i>optional</i>	This type represents a link to a resource.	scaleToLevel
self <i>required</i>	This type represents a link to a resource.	self
terminate <i>optional</i>	This type represents a link to a resource.	terminate

changeExtConn

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

changeFlavour

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

heal

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

indicators

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

instantiate

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

operate

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

scale

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

scaleToLevel

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

self

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

terminate

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

instantiatedVnfInfo

Name	Description	Schema
extCpInfo <i>optional</i>	Information about the external CPs exposed by the VNF instance.	< extCpInfo > array
extManagedVirtualLinkInfo <i>optional</i>	External virtual links the VNF instance is connected to.	< extManagedVirtualLinkInfo > array
extVirtualLinkInfo <i>optional</i>	Information about the external VLs the VNF instance is connected to.	< extVirtualLinkInfo > array

Name	Description	Schema
flavourId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
localizationLanguage <i>optional</i>	Information about localization language of the VNF (includes e.g. strings in the VNFD). The localization languages supported by a VNF can be declared in the VNFD, and localization language selection can take place at instantiation time. The value shall comply with the format defined in IETF RFC 5646.	string
monitoringParameters <i>optional</i>	Active monitoring parameters.	< monitoringParameters > array
scaleStatus <i>optional</i>	Scale status of the VNF, one entry per aspect. Represents for every scaling aspect how "big" the VNF has been scaled w.r.t. that aspect.	< scaleStatus > array
virtualLinkResourceInfo <i>optional</i>	Information about the virtualised network resources used by the VLs of the VNF instance.	< virtualLinkResourceInfo > array
virtualStorageResourceInfo <i>optional</i>	Information on the virtualised storage resource(s) used as storage for the VNF instance.	< virtualStorageResourceInfo > array
vnfState <i>required</i>		enum (STARTED, STOPPED)
vnfcResourceInfo <i>optional</i>	Information about the virtualised compute and storage resources used by the VNFCs of the VNF instance.	< vnfcResourceInfo > array

extCpInfo

Name	Description	Schema
cpProtocolInfo <i>optional</i>	Network protocol information for this CP.	< cpProtocolInfo > array
cpId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

Name	Description	Schema
extLinkId <i>optional</i>	An identifier with the intention of being globally unique.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

cpProtocolInfo

Name	Description	Schema
ipOverEthernet <i>optional</i>	This type represents information about a network address that has been assigned.	ipOverEthernet
layerProtocol <i>required</i>	The identifier of layer(s) and protocol(s) associated to the network address information. Permitted values: IP_OVER_ETHERNET This attribute allows to signal the addition of further types of layer and protocol in future versions of the present document in a backwards-compatible way. In the current version of the present document, only IP over Ethernet is supported.	enum (IP_OVER_ETHERNET)

ipOverEthernet

Name	Description	Schema
ipAddresses <i>optional</i>	Addresses assigned to the CP instance. Each entry represents IP addresses assigned by fixed or dynamic IP address assignment per subnet.	< ipAddresses > array
macAddress <i>required</i>	A MAC address. Representation: string that consists of groups of two hexadecimal digits, separated by hyphens or colons.	string (MAC)

ipAddresses

Name	Description	Schema
addressRange <i>optional</i>	An IP address range used, e.g., in case of egress connections. Exactly one of "addresses" or "addressRange" shall be present.	addressRange
addresses <i>optional</i>	Fixed addresses assigned (from the subnet defined by "subnetId" if provided).	< string (IP) > array

Name	Description	Schema
isDynamic <i>optional</i>	Indicates whether this set of addresses was assigned dynamically (true) or based on address information provided as input from the API consumer (false). Shall be present if "addresses" is present and shall be absent otherwise.	boolean
subnetId <i>optional</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
type <i>required</i>	The type of the IP addresses. Permitted values: IPV4, IPV6.	enum (IPV4, IPV6)

addressRange

Name	Description	Schema
maxAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
minAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)

extManagedVirtualLinkInfo

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string
networkResource <i>optional</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	networkResource
vnfLinkPorts <i>optional</i>	Link ports of this VL.	< vnfLinkPorts > array

Name	Description	Schema
vnfVirtualLinkDescId <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

networkResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

extVirtualLinkInfo

Name	Description	Schema
extLinkPorts <i>optional</i>	Link ports of this VL.	< extLinkPorts > array
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

extLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

monitoringParameters

Name	Description	Schema
id <i>required</i>	An identifier that is unique within a VNF descriptor.	string

Name	Description	Schema
name <i>optional</i>	Human readable name of the monitoring parameter, as defined in the VNFD.	string
timeStamp <i>required</i>	Represents the point in time when the measurement has been performed, as known to the VNFM. Should be formatted according to ETF RFC 3339.	string
value <i>required</i>	Value of the monitoring parameter known to the VNFM (e.g. obtained for autoscaling purposes). The type of the "value" attribute (i.e. scalar, structure (Object in JSON), or array (of scalars, arrays or structures/Objects)) is assumed to be defined in an external measurement specification.	object

scaleStatus

Name	Description	Schema
aspectId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
scaleLevel <i>required</i>	Indicates the scale level. The minimum value shall be 0 and the maximum value shall be \leq maxScaleLevel as described in the VNFD.	integer

virtualLinkResourceInfo

Name	Description	Schema
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
networkResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	networkResource
reservationId <i>optional</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
vnfLinkPorts <i>optional</i>	Links ports of this VL. Shall be present when the linkPort is used for external connectivity by the VNF (refer to VnfLinkPortInfo). May be present otherwise.	< vnfLinkPorts > array
vnfVirtualLinkDescId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

networkResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

virtualStorageResourceInfo

Name	Description	Schema
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
reservationId <i>optional</i>	An identifier with the intention of being globally unique.	string
storageResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	storageResource
virtualStorageDescId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

storageResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfcResourceInfo

Name	Description	Schema
computeResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	computeResource
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
reservationId <i>optional</i>	An identifier with the intention of being globally unique.	string
storageResourceIds <i>optional</i>	References to the VirtualStorage resources. The value refers to a VirtualStorageResourceInfo item in the VnfInstance.	< string > array
vduId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

Name	Description	Schema
vnfcCpInfo <i>optional</i>	CPs of the VNFC instance. Shall be present when that particular CP of the VNFC instance is associated to an external CP of the VNF instance. May be present otherwise.	< vnfcCpInfo > array

computeResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfcCpInfo

Name	Description	Schema
cpProtocolInfo <i>optional</i>	Network protocol information for this CP.	< cpProtocolInfo > array
cpdId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
vnfExtCpId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
vnfLinkPortId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

cpProtocolInfo

Name	Description	Schema
ipOverEthernet <i>optional</i>	This type represents information about a network address that has been assigned.	ipOverEthernet
layerProtocol <i>required</i>	The identifier of layer(s) and protocol(s) associated to the network address information. Permitted values: IP_OVER_ETHERNET This attribute allows to signal the addition of further types of layer and protocol in future versions of the present document in a backwards-compatible way. In the current version of the present document, only IP over Ethernet is supported.	enum (IP_OVER_ETHERNET)

ipOverEthernet

Name	Description	Schema
ipAddresses <i>optional</i>	Addresses assigned to the CP instance. Each entry represents IP addresses assigned by fixed or dynamic IP address assignment per subnet.	< ipAddresses > array
macAddress <i>required</i>	A MAC address. Representation: string that consists of groups of two hexadecimal digits, separated by hyphens or colons.	string (MAC)

ipAddresses

Name	Description	Schema
addressRange <i>optional</i>	An IP address range used, e.g., in case of egress connections. Exactly one of "addresses" or "addressRange" shall be present.	addressRange
addresses <i>optional</i>	Fixed addresses assigned (from the subnet defined by "subnetId" if provided).	< string (IP) > array
isDynamic <i>optional</i>	Indicates whether this set of addresses was assigned dynamically (true) or based on address information provided as input from the API consumer (false). Shall be present if "addresses" is present and shall be absent otherwise.	boolean

Name	Description	Schema
subnetId <i>optional</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
type <i>required</i>	The type of the IP addresses. Permitted values: IPV4, IPV6.	enum (IPV4, IPV6)

addressRange

Name	Description	Schema
maxAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
minAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 416

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 422

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

GET /vnf_instances

Description

Query VNF

The GET method queries information about multiple VNF instances.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string

Responses

HTTP Code	Description	Schema
200	<p>OK Information about zero or more VNF instances was queried successfully. The response body shall contain representations of zero or more VNF instances.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	<p>< Response 200 > array</p>
400	<p>Bad Request It fhe request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code.The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	<p>Response 400</p>

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict Another request is in progress that prohibits the fulfilment of the current request, or the current resource state is inconsistent with the request.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
416	<p>Requested Range Not Satisfiable This code is returned if the requested byte range in the Range HTTP header is not present in the requested resource.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 416
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 200

Name	Description	Schema
_links <i>optional</i>	Links to resources related to this resource.	_links
extensions <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string
instantiatedVnfInfo <i>optional</i>	Information specific to an instantiated VNF instance. This attribute shall be present if the instantiateState attribute value is INSTANTIATED.	instantiatedVnfInfo
instantiationState <i>required</i>	The instantiation state of the VNF.	enum (NOT_INSTANTIATED, INSTANTIATED)
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimConnectionInfo <i>optional</i>	Information about VIM connections to be used for managing the resources for the VNF instance. This attribute shall only be supported and present if VNF-related resource management in direct mode is applicable. This attribute can be modified with the PATCH method.	< vimConnectionInfo > array
vnfConfigurableProperties <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vnfInstanceDescription <i>optional</i>	Human-readable description of the VNF instance. This attribute can be modified with the PATCH method.	string
vnfInstanceName <i>optional</i>	Name of the VNF instance. This attribute can be modified with the PATCH method.	string

Name	Description	Schema
vnfPkgId <i>required</i>	An identifier with the intention of being globally unique.	string
vnfProductName <i>required</i>	Name to identify the VNF Product. The value is copied from the VNFD.	string
vnfProvider <i>required</i>	Provider of the VNF and the VNFD. The value is copied from the VNFD.	string
vnfSoftwareVersion <i>required</i>	A Version.	string
vnfdId <i>required</i>	An identifier with the intention of being globally unique.	string
vnfdVersion <i>required</i>	A Version.	string

links

Name	Description	Schema
changeExtConn <i>optional</i>	This type represents a link to a resource.	changeExtConn
changeFlavour <i>optional</i>	This type represents a link to a resource.	changeFlavour
heal <i>optional</i>	This type represents a link to a resource.	heal
indicators <i>optional</i>	This type represents a link to a resource.	indicators
instantiate <i>optional</i>	This type represents a link to a resource.	instantiate
operate <i>optional</i>	This type represents a link to a resource.	operate

Name	Description	Schema
scale <i>optional</i>	This type represents a link to a resource.	scale
scaleToLevel <i>optional</i>	This type represents a link to a resource.	scaleToLevel
self <i>required</i>	This type represents a link to a resource.	self
terminate <i>optional</i>	This type represents a link to a resource.	terminate

changeExtConn

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

changeFlavour

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

heal

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

indicators

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

instantiate

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

operate

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

scale

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

scaleToLevel

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

self

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

terminate

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

instantiatedVnfInfo

Name	Description	Schema
extCpInfo <i>optional</i>	Information about the external CPs exposed by the VNF instance.	< extCpInfo > array

Name	Description	Schema
extManagedVirtualLinkInfo <i>optional</i>	External virtual links the VNF instance is connected to.	< extManagedVirtualLinkInfo > array
extVirtualLinkInfo <i>optional</i>	Information about the external VLs the VNF instance is connected to.	< extVirtualLinkInfo > array
flavourId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
localizationLanguage <i>optional</i>	Information about localization language of the VNF (includes e.g. strings in the VNFD). The localization languages supported by a VNF can be declared in the VNFD, and localization language selection can take place at instantiation time. The value shall comply with the format defined in IETF RFC 5646.	string
monitoringParameters <i>optional</i>	Active monitoring parameters.	< monitoringParameters > array
scaleStatus <i>optional</i>	Scale status of the VNF, one entry per aspect. Represents for every scaling aspect how "big" the VNF has been scaled w.r.t. that aspect.	< scaleStatus > array
virtualLinkResourceInfo <i>optional</i>	Information about the virtualised network resources used by the VLs of the VNF instance.	< virtualLinkResourceInfo > array
virtualStorageResourceInfo <i>optional</i>	Information on the virtualised storage resource(s) used as storage for the VNF instance.	< virtualStorageResourceInfo > array
vnfState <i>required</i>		enum (STARTED, STOPPED)
vnfcResourceInfo <i>optional</i>	Information about the virtualised compute and storage resources used by the VNFCs of the VNF instance.	< vnfcResourceInfo > array

extCpInfo

Name	Description	Schema
cpProtocolInfo <i>optional</i>	Network protocol information for this CP.	< cpProtocolInfo > array
cpdId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
extLinkPortId <i>optional</i>	An identifier with the intention of being globally unique.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

cpProtocolInfo

Name	Description	Schema
ipOverEthernet <i>optional</i>	This type represents information about a network address that has been assigned.	ipOverEthernet
layerProtocol <i>required</i>	The identifier of layer(s) and protocol(s) associated to the network address information. Permitted values: IP_OVER_ETHERNET This attribute allows to signal the addition of further types of layer and protocol in future versions of the present document in a backwards-compatible way. In the current version of the present document, only IP over Ethernet is supported.	enum (IP_OVER_ETHERNET)

ipOverEthernet

Name	Description	Schema
ipAddresses <i>optional</i>	Addresses assigned to the CP instance. Each entry represents IP addresses assigned by fixed or dynamic IP address assignment per subnet.	< ipAddresses > array
macAddress <i>required</i>	A MAC address. Representation: string that consists of groups of two hexadecimal digits, separated by hyphens or colons.	string (MAC)

ipAddresses

Name	Description	Schema
addressRange <i>optional</i>	An IP address range used, e.g., in case of egress connections. Exactly one of "addresses" or "addressRange" shall be present.	addressRange
addresses <i>optional</i>	Fixed addresses assigned (from the subnet defined by "subnetId" if provided).	< string (IP) > array
isDynamic <i>optional</i>	Indicates whether this set of addresses was assigned dynamically (true) or based on address information provided as input from the API consumer (false). Shall be present if "addresses" is present and shall be absent otherwise.	boolean
subnetId <i>optional</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
type <i>required</i>	The type of the IP addresses. Permitted values: IPV4, IPV6.	enum (IPV4, IPV6)

addressRange

Name	Description	Schema
maxAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
minAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)

extManagedVirtualLinkInfo

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
networkResource <i>optional</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	networkResource
vnfLinkPorts <i>optional</i>	Link ports of this VL.	< vnfLinkPorts > array
vnfVirtualLinkDescId <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

networkResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

extVirtualLinkInfo

Name	Description	Schema
extLinkPorts <i>optional</i>	Link ports of this VL.	< extLinkPorts > array
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

extLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

monitoringParameters

Name	Description	Schema
id <i>required</i>	An identifier that is unique within a VNF descriptor.	string
name <i>optional</i>	Human readable name of the monitoring parameter, as defined in the VNFD.	string
timeStamp <i>required</i>	Represents the point in time when the measurement has been performed, as known to the VNFM. Should be formatted according to ETF RFC 3339.	string
value <i>required</i>	Value of the monitoring parameter known to the VNFM (e.g. obtained for autoscaling purposes). The type of the "value" attribute (i.e. scalar, structure (Object in JSON), or array (of scalars, arrays or structures/Objects)) is assumed to be defined in an external measurement specification.	object

scaleStatus

Name	Description	Schema
aspectId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
scaleLevel <i>required</i>	Indicates the scale level. The minimum value shall be 0 and the maximum value shall be $\leq \text{maxScaleLevel}$ as described in the VNFD.	integer

virtualLinkResourceInfo

Name	Description	Schema
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
networkResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	networkResource

Name	Description	Schema
reservationId <i>optional</i>	An identifier with the intention of being globally unique.	string
vnfLinkPorts <i>optional</i>	Links ports of this VL. Shall be present when the linkPort is used for external connectivity by the VNF (refer to VnfLinkPortInfo). May be present otherwise.	< vnfLinkPorts > array
vnfVirtualLinkDescId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

networkResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

virtualStorageResourceInfo

Name	Description	Schema
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
reservationId <i>optional</i>	An identifier with the intention of being globally unique.	string
storageResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	storageResource
virtualStorageeDescId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

storageResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfcResourceInfo

Name	Description	Schema
computeResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	computeResource
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
reservationId <i>optional</i>	An identifier with the intention of being globally unique.	string
storageResourceIds <i>optional</i>	References to the VirtualStorage resources. The value refers to a VirtualStorageResourceInfo item in the VnfInstance.	< string > array
vduId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

Name	Description	Schema
vnfcCpInfo <i>optional</i>	CPs of the VNFC instance. Shall be present when that particular CP of the VNFC instance is associated to an external CP of the VNF instance. May be present otherwise.	< vnfcCpInfo > array

computeResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfcCpInfo

Name	Description	Schema
cpProtocolInfo <i>optional</i>	Network protocol information for this CP.	< cpProtocolInfo > array
cpdId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
vnfExtCpId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
vnfLinkPortId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

cpProtocolInfo

Name	Description	Schema
ipOverEthernet <i>optional</i>	This type represents information about a network address that has been assigned.	ipOverEthernet
layerProtocol <i>required</i>	The identifier of layer(s) and protocol(s) associated to the network address information. Permitted values: IP_OVER_ETHERNET This attribute allows to signal the addition of further types of layer and protocol in future versions of the present document in a backwards-compatible way. In the current version of the present document, only IP over Ethernet is supported.	enum (IP_OVER_ETHERNET)

ipOverEthernet

Name	Description	Schema
ipAddresses <i>optional</i>	Addresses assigned to the CP instance. Each entry represents IP addresses assigned by fixed or dynamic IP address assignment per subnet.	< ipAddresses > array
macAddress <i>required</i>	A MAC address. Representation: string that consists of groups of two hexadecimal digits, separated by hyphens or colons.	string (MAC)

ipAddresses

Name	Description	Schema
addressRange <i>optional</i>	An IP address range used, e.g., in case of egress connections. Exactly one of "addresses" or "addressRange" shall be present.	addressRange
addresses <i>optional</i>	Fixed addresses assigned (from the subnet defined by "subnetId" if provided).	< string (IP) > array
isDynamic <i>optional</i>	Indicates whether this set of addresses was assigned dynamically (true) or based on address information provided as input from the API consumer (false). Shall be present if "addresses" is present and shall be absent otherwise.	boolean

Name	Description	Schema
subnetId <i>optional</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
type <i>required</i>	The type of the IP addresses. Permitted values: IPV4, IPV6.	enum (IPV4, IPV6)

addressRange

Name	Description	Schema
maxAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
minAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 416

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

GET /vnf_instances/{vnfInstanceId}

Description

Query VNF

The GET method retrieves information about a VNF instance by reading an individual VNF instance

resource.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string
Path	vnfInstanceId <i>required</i>	Identifier of the VNF instance. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string

Responses

HTTP Code	Description	Schema
200	<p>OK Information about zero or more VNF instances was queried successfully. The response body shall contain representations of zero or more VNF instances.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 200

HTTP Code	Description	Schema
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict Another request is in progress that prohibits the fulfilment of the current request, or the current resource state is inconsistent with the request.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409

HTTP Code	Description	Schema
416	<p>Requested Range Not Satisfiable This code is returned if the requested byte range in the Range HTTP header is not present in the requested resource.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 416
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 200

Name	Description	Schema
_links <i>optional</i>	Links to resources related to this resource.	_links
extensions <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string
instantiatedVnfInfo <i>optional</i>	Information specific to an instantiated VNF instance. This attribute shall be present if the instantiateState attribute value is INSTANTIATED.	instantiatedVnfInfo

Name	Description	Schema
instantiationState <i>required</i>	The instantiation state of the VNF.	enum (NOT_INSTANTIATED, INSTANTIATED)
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimConnectionInfo <i>optional</i>	Information about VIM connections to be used for managing the resources for the VNF instance. This attribute shall only be supported and present if VNF-related resource management in direct mode is applicable. This attribute can be modified with the PATCH method.	< vimConnectionInfo > array
vnfConfigurableProperties <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vnfInstanceDescription <i>optional</i>	Human-readable description of the VNF instance. This attribute can be modified with the PATCH method.	string
vnfInstanceName <i>optional</i>	Name of the VNF instance. This attribute can be modified with the PATCH method.	string
vnfPkgId <i>required</i>	An identifier with the intention of being globally unique.	string
vnfProductName <i>required</i>	Name to identify the VNF Product. The value is copied from the VNFD.	string
vnfProvider <i>required</i>	Provider of the VNF and the VNFD. The value is copied from the VNFD.	string
vnfSoftwareVersion <i>required</i>	A Version.	string
vnfdId <i>required</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
vnfdVersion <i>required</i>	A Version.	string

links

Name	Description	Schema
changeExtConn <i>optional</i>	This type represents a link to a resource.	changeExtConn
changeFlavour <i>optional</i>	This type represents a link to a resource.	changeFlavour
heal <i>optional</i>	This type represents a link to a resource.	heal
indicators <i>optional</i>	This type represents a link to a resource.	indicators
instantiate <i>optional</i>	This type represents a link to a resource.	instantiate
operate <i>optional</i>	This type represents a link to a resource.	operate
scale <i>optional</i>	This type represents a link to a resource.	scale
scaleToLevel <i>optional</i>	This type represents a link to a resource.	scaleToLevel
self <i>required</i>	This type represents a link to a resource.	self
terminate <i>optional</i>	This type represents a link to a resource.	terminate

changeExtConn

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

changeFlavour

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

heal

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

indicators

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

instantiate

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

operate

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

scale

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

scaleToLevel

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

self

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

terminate

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

instantiatedVnfInfo

Name	Description	Schema
extCpInfo <i>optional</i>	Information about the external CPs exposed by the VNF instance.	< extCpInfo > array
extManagedVirtualLinkInfo <i>optional</i>	External virtual links the VNF instance is connected to.	< extManagedVirtualLinkInfo > array
extVirtualLinkInfo <i>optional</i>	Information about the external VLS the VNF instance is connected to.	< extVirtualLinkInfo > array
flavourId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
localizationLanguage <i>optional</i>	Information about localization language of the VNF (includes e.g. strings in the VNFD). The localization languages supported by a VNF can be declared in the VNFD, and localization language selection can take place at instantiation time. The value shall comply with the format defined in IETF RFC 5646.	string

Name	Description	Schema
monitoringParameters <i>optional</i>	Active monitoring parameters.	< monitoringParameters > array
scaleStatus <i>optional</i>	Scale status of the VNF, one entry per aspect. Represents for every scaling aspect how "big" the VNF has been scaled w.r.t. that aspect.	< scaleStatus > array
virtualLinkResourceInfo <i>optional</i>	Information about the virtualised network resources used by the VLs of the VNF instance.	< virtualLinkResourceInfo > array
virtualStorageResourceInfo <i>optional</i>	Information on the virtualised storage resource(s) used as storage for the VNF instance.	< virtualStorageResourceInfo > array
vnfState <i>required</i>		enum (STARTED, STOPPED)
vnfcResourceInfo <i>optional</i>	Information about the virtualised compute and storage resources used by the VNFCs of the VNF instance.	< vnfcResourceInfo > array

extCpInfo

Name	Description	Schema
cpProtocolInfo <i>optional</i>	Network protocol information for this CP.	< cpProtocolInfo > array
cpdId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
extLinkPortId <i>optional</i>	An identifier with the intention of being globally unique.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

cpProtocolInfo

Name	Description	Schema
ipOverEthernet <i>optional</i>	This type represents information about a network address that has been assigned.	ipOverEthernet
layerProtocol <i>required</i>	The identifier of layer(s) and protocol(s) associated to the network address information. Permitted values: IP_OVER_ETHERNET This attribute allows to signal the addition of further types of layer and protocol in future versions of the present document in a backwards-compatible way. In the current version of the present document, only IP over Ethernet is supported.	enum (IP_OVER_ETHERNET)

ipOverEthernet

Name	Description	Schema
ipAddresses <i>optional</i>	Addresses assigned to the CP instance. Each entry represents IP addresses assigned by fixed or dynamic IP address assignment per subnet.	< ipAddresses > array
macAddress <i>required</i>	A MAC address. Representation: string that consists of groups of two hexadecimal digits, separated by hyphens or colons.	string (MAC)

ipAddresses

Name	Description	Schema
addressRange <i>optional</i>	An IP address range used, e.g., in case of egress connections. Exactly one of "addresses" or "addressRange" shall be present.	addressRange
addresses <i>optional</i>	Fixed addresses assigned (from the subnet defined by "subnetId" if provided).	< string (IP) > array
isDynamic <i>optional</i>	Indicates whether this set of addresses was assigned dynamically (true) or based on address information provided as input from the API consumer (false). Shall be present if "addresses" is present and shall be absent otherwise.	boolean

Name	Description	Schema
subnetId <i>optional</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
type <i>required</i>	The type of the IP addresses. Permitted values: IPV4, IPV6.	enum (IPV4, IPV6)

addressRange

Name	Description	Schema
maxAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
minAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)

extManagedVirtualLinkInfo

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string
networkResource <i>optional</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	networkResource
vnfLinkPorts <i>optional</i>	Link ports of this VL.	< vnfLinkPorts > array
vnfVirtualLinkDescId <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

networkResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

extVirtualLinkInfo

Name	Description	Schema
extLinkPorts <i>optional</i>	Link ports of this VL.	< extLinkPorts > array
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

extLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string

Name	Description	Schema
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

monitoringParameters

Name	Description	Schema
id <i>required</i>	An identifier that is unique within a VNF descriptor.	string
name <i>optional</i>	Human readable name of the monitoring parameter, as defined in the VNFD.	string

Name	Description	Schema
timeStamp <i>required</i>	Represents the point in time when the measurement has been performed, as known to the VNFM. Should be formatted according to ETF RFC 3339.	string
value <i>required</i>	Value of the monitoring parameter known to the VNFM (e.g. obtained for autoscaling purposes). The type of the "value" attribute (i.e. scalar, structure (Object in JSON), or array (of scalars, arrays or structures/Objects)) is assumed to be defined in an external measurement specification.	object

scaleStatus

Name	Description	Schema
aspectId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
scaleLevel <i>required</i>	Indicates the scale level. The minimum value shall be 0 and the maximum value shall be \leq maxScaleLevel as described in the VNFD.	integer

virtualLinkResourceInfo

Name	Description	Schema
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
networkResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	networkResource
reservationId <i>optional</i>	An identifier with the intention of being globally unique.	string
vnfLinkPorts <i>optional</i>	Links ports of this VL. Shall be present when the linkPort is used for external connectivity by the VNF (refer to VnfLinkPortInfo). May be present otherwise.	< vnfLinkPorts > array

Name	Description	Schema
vnfVirtualLinkDescId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

networkResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

virtualStorageResourceInfo

Name	Description	Schema
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
reservationId <i>optional</i>	An identifier with the intention of being globally unique.	string
storageResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	storageResource
virtualStorageDescId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

storageResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfcResourceInfo

Name	Description	Schema
computeResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	computeResource
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
reservationId <i>optional</i>	An identifier with the intention of being globally unique.	string
storageResourceIds <i>optional</i>	References to the VirtualStorage resources. The value refers to a VirtualStorageResourceInfo item in the VnfInstance.	< string > array
vduId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

Name	Description	Schema
vnfcCpInfo <i>optional</i>	CPs of the VNFC instance. Shall be present when that particular CP of the VNFC instance is associated to an external CP of the VNF instance. May be present otherwise.	< vnfcCpInfo > array

computeResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vnfcCpInfo

Name	Description	Schema
cpProtocolInfo <i>optional</i>	Network protocol information for this CP.	< cpProtocolInfo > array
cpdId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
vnfExtCpId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
vnfLinkPortId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

cpProtocolInfo

Name	Description	Schema
ipOverEthernet <i>optional</i>	This type represents information about a network address that has been assigned.	ipOverEthernet
layerProtocol <i>required</i>	The identifier of layer(s) and protocol(s) associated to the network address information. Permitted values: IP_OVER_ETHERNET This attribute allows to signal the addition of further types of layer and protocol in future versions of the present document in a backwards-compatible way. In the current version of the present document, only IP over Ethernet is supported.	enum (IP_OVER_ETHERNET)

ipOverEthernet

Name	Description	Schema
ipAddresses <i>optional</i>	Addresses assigned to the CP instance. Each entry represents IP addresses assigned by fixed or dynamic IP address assignment per subnet.	< ipAddresses > array
macAddress <i>required</i>	A MAC address. Representation: string that consists of groups of two hexadecimal digits, separated by hyphens or colons.	string (MAC)

ipAddresses

Name	Description	Schema
addressRange <i>optional</i>	An IP address range used, e.g., in case of egress connections. Exactly one of "addresses" or "addressRange" shall be present.	addressRange
addresses <i>optional</i>	Fixed addresses assigned (from the subnet defined by "subnetId" if provided).	< string (IP) > array
isDynamic <i>optional</i>	Indicates whether this set of addresses was assigned dynamically (true) or based on address information provided as input from the API consumer (false). Shall be present if "addresses" is present and shall be absent otherwise.	boolean

Name	Description	Schema
subnetId <i>optional</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
type <i>required</i>	The type of the IP addresses. Permitted values: IPV4, IPV6.	enum (IPV4, IPV6)

addressRange

Name	Description	Schema
maxAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
minAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 416

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

DELETE /vnf_instances/{vnfInstanceId}

Description

Delete VNF Identifier

This method deletes an individual VNF instance resource.

Parameters

Type	Name	Description	Schema
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Path	vnfInstanceId <i>required</i>	Identifier of the VNF instance. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string

Responses

HTTP Code	Description	Schema
204	No Content The VNF instance resource and the associated VNF identifier were deleted successfully. The response body shall be empty. Headers : WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.	No Content

HTTP Code	Description	Schema
400	<p>Bad Request It fhe request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code.The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406

HTTP Code	Description	Schema
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is in INSTANTIATED state. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
412	<p>Precondition Failed A precondition given in an HTTP request header is not fulfilled. Typically, this is due to an ETag mismatch, indicating that the resource was modified by another entity. The response body should contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 412
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 412

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

PATCH /vnf_instances/{vnfInstanceId}

Description

Modify VNF Information

This method modifies an individual VNF instance resource. Changes to the VNF configurable properties are applied to the configuration in the VNF instance, and are reflected in the representation of this resource. Other changes are applied to the VNF instance information managed by the VNFM, and are reflected in the representation of this resource

Parameters

Type	Name	Description	Schema
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The Content-Type header shall be set to "application/merge-patch+json" according to IETF RFC 7396.	enum (application/merge-patch+json)
Path	vnfInstanceId <i>required</i>	Identifier of the VNF instance. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string

Type	Name	Description	Schema
Body	VnfInfoModificationRequest <i>required</i>	Input parameters for VNF info modification.	VnfInfoModificationRequest

VnfInfoModificationRequest

Name	Description	Schema
extensions <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimConnectionInfo <i>optional</i>	New content of certain entries in the "vimConnectionInfo" attribute array in "VnfInstance", as defined below this table.	< vimConnectionInfo > array
vnfConfigurableProperties <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vnfInstanceDescription <i>optional</i>	New value of the "vnfInstanceDescription" attribute in "VnfInstance", or "null" to remove the attribute.	string
vnfInstanceName <i>optional</i>	New value of the "vnfInstanceName" attribute in "VnfInstance", or "null" to remove the attribute.	string
vnfPkgId <i>optional</i>	An identifier with the intention of being globally unique.	string

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but the processing has not been completed. On success, the HTTP response shall include a "Location" HTTP header that contains the URI of the newly-created "VNF LCM operation occurrence" resource corresponding to the operation. The response body shall be empty.</p> <p>Headers :</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content
400	<p>Bad Request It the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that another LCM operation is ongoing. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
412	<p>Precondition Failed A precondition given in an HTTP request header is not fulfilled. Typically, this is due to an ETag mismatch, indicating that the resource was modified by another entity. The response body should contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 412
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500

HTTP Code	Description	Schema
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 412

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_instances/{vnfInstanceId}/change_ext_conn

Description

Change External VNF Connectivity

The POST method changes the external connectivity of a VNF instance.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string

Type	Name	Description	Schema
Path	vnfInstanceId <i>required</i>	Identifier of the VNF instance of which the external connectivity is requested to be changed. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string
Body	ChangeExtVnfConnectivityRequest <i>required</i>	Parameters for the Change external VNF connectivity operation.	ChangeExtVnfConnectivityRequest

ChangeExtVnfConnectivityRequest

Name	Description	Schema
additionalParams <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extVirtualLinks <i>required</i>	Information about external VLs to change (e.g. connect the VNF to).	< extVirtualLinks > array
vimConnectionInfo <i>optional</i>	Information about VIM connections to be used for managing the resources for the VNF instance, or refer to external virtual links. This attribute shall only be supported and may be present if VNF-related resource management in direct mode is applicable.	< vimConnectionInfo > array

extVirtualLinks

Name	Description	Schema
extCps <i>required</i>	External CPs of the VNF to be connected to this external VL.	< extCps > array
extLinkPorts <i>optional</i>	Externally provided link ports to be used to connect external connection points to this external VL. If this attribute is not present, the VNFM shall create the link ports on the external VL.	< extLinkPorts > array

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string

extCps

Name	Description	Schema
cpConfig <i>required</i>	List of instance data that need to be configured on the CP instances created from the respective CPD.	< cpConfig > array
cpdId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

cpConfig

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string

Name	Description	Schema
cpProtocolData <i>optional</i>	Parameters for configuring the network protocols on the link port that connects the CP to a VL. The following conditions apply to the attributes "linkPortId" and "cpProtocolData": * The "linkPortId" and "cpProtocolData" attributes shall both be absent for the deletion of an existing external CP instance addressed by cpInstanceId. * At least one of these attributes shall be present for a to-be-created external CP instance or an existing external CP instance. * If the "linkPortId" attribute is absent, the VNFM shall create a link port. * If the "cpProtocolData" attribute is absent, the "linkPortId" attribute shall be provided referencing a pre-created link port, and the VNFM can use means outside the scope of the present document to obtain the pre-configured address information for the connection point from the resource representing the link port. * If both "cpProtocolData" and "linkportId" are provided, the API consumer shall ensure that the cpProtocolData can be used with the pre-created link port referenced by "linkPortId".	< cpProtocolData > array
linkPortId <i>optional</i>	An identifier with the intention of being globally unique.	string

cpProtocolData

Name	Description	Schema
ipOverEthernet <i>optional</i>	This type represents network address data for IP over Ethernet.	ipOverEthernet
layerProtocol <i>required</i>	Identifier of layer(s) and protocol(s). This attribute allows to signal the addition of further types of layer and protocol in future versions of the present document in a backwards-compatible way. In the current version of the present document, only IP over Ethernet is supported.	enum (IP_OVER_ETHERNET)

ipOverEthernet

Name	Description	Schema
ipAddresses <i>optional</i>	List of IP addresses to assign to the CP instance. Each entry represents IP address data for fixed or dynamic IP address assignment per subnet. If this attribute is not present, no IP address shall be assigned.	< ipAddresses > array

Name	Description	Schema
macAddress <i>optional</i>	A MAC address. Representation: string that consists of groups of two hexadecimal digits, separated by hyphens or colons.	string (MAC)

ipAddresses

Name	Description	Schema
addressRange <i>optional</i>	An IP address range to be used, e.g. in case of egress connections. In case this attribute is present, IP addresses from the range will be used.	addressRange
fixedAddresses <i>optional</i>	Fixed addresses to assign (from the subnet defined by "subnetId" if provided). Exactly one of "fixedAddresses", "numDynamicAddresses" or "ipAddressRange" shall be present.	< string (IP) > array
numDynamicAddresses <i>optional</i>	Number of dynamic addresses to assign (from the subnet defined by "subnetId" if provided). Exactly one of "fixedAddresses", "numDynamicAddresses" or "ipAddressRange" shall be present.	integer
subnetId <i>optional</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
type <i>required</i>	The type of the IP addresses. Permitted values: IPV4, IPV6.	enum (IPV4, IPV6)

addressRange

Name	Description	Schema
maxAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
minAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)

extLinkPorts

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but the processing has not been completed. On success, the HTTP response shall include a "Location" HTTP header that contains the URI of the newly-created "VNF LCM operation occurrence" resource corresponding to the operation.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content

HTTP Code	Description	Schema
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406

HTTP Code	Description	Schema
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that another LCM operation is ongoing. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)

Name	Description	Schema
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_instances/{vnfInstanceId}/change_flavour

Description

Change VNF Flavour

The POST method changes the deployment flavour of a VNF instance.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string

Type	Name	Description	Schema
Path	vnfInstanceId <i>required</i>	The identifier of the VNF instance of which the deployment flavour is requested to be changed. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string
Body	ChangeVnfFlavourRequest <i>required</i>	Parameters for the Change VNF Flavour operation.	ChangeVnfFlavourRequest

ChangeVnfFlavourRequest

Name	Description	Schema
additionalParams <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extManagedVirtualLinks <i>optional</i>	Information about internal VLs that are managed by the NFVO.	< extManagedVirtualLinks > array
extVirtualLinks <i>optional</i>	Information about external VLs to connect the VNF to.	< extVirtualLinks > array
instantiationLevelId <i>optional</i>	An identifier that is unique within a VNF descriptor.	string
newFlavourId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
vimConnectionInfo <i>optional</i>	Information about VIM connections to be used for managing the resources for the VNF instance, or refer to external / externally-managed virtual links. This attribute shall only be supported and may be present if VNF-related resource management in direct mode is applicable.	< vimConnectionInfo > array

extManagedVirtualLinks

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
virtualLinkDescriptorId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

extVirtualLinks

Name	Description	Schema
extCps <i>required</i>	External CPs of the VNF to be connected to this external VL.	< extCps > array
extLinkPorts <i>optional</i>	Externally provided link ports to be used to connect external connection points to this external VL. If this attribute is not present, the VNFM shall create the link ports on the external VL.	< extLinkPorts > array
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string

extCps

Name	Description	Schema
cpConfig <i>required</i>	List of instance data that need to be configured on the CP instances created from the respective CPD.	< cpConfig > array
cpdId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

cpConfig

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
cpProtocolData <i>optional</i>	Parameters for configuring the network protocols on the link port that connects the CP to a VL. The following conditions apply to the attributes "linkPortId" and "cpProtocolData": * The "linkPortId" and "cpProtocolData" attributes shall both be absent for the deletion of an existing external CP instance addressed by cpInstanceId. * At least one of these attributes shall be present for a to-be-created external CP instance or an existing external CP instance. * If the "linkPortId" attribute is absent, the VNFM shall create a link port. * If the "cpProtocolData" attribute is absent, the "linkPortId" attribute shall be provided referencing a pre-created link port, and the VNFM can use means outside the scope of the present document to obtain the pre-configured address information for the connection point from the resource representing the link port. * If both "cpProtocolData" and "linkportId" are provided, the API consumer shall ensure that the cpProtocolData can be used with the pre-created link port referenced by "linkPortId".	< cpProtocolData > array
linkPortId <i>optional</i>	An identifier with the intention of being globally unique.	string

cpProtocolData

Name	Description	Schema
ipOverEthernet <i>optional</i>	This type represents network address data for IP over Ethernet.	ipOverEthernet
layerProtocol <i>required</i>	Identifier of layer(s) and protocol(s). This attribute allows to signal the addition of further types of layer and protocol in future versions of the present document in a backwards-compatible way. In the current version of the present document, only IP over Ethernet is supported.	enum (IP_OVER_ETHERNET)

ipOverEthernet

Name	Description	Schema
ipAddresses <i>optional</i>	List of IP addresses to assign to the CP instance. Each entry represents IP address data for fixed or dynamic IP address assignment per subnet. If this attribute is not present, no IP address shall be assigned.	< ipAddresses > array
macAddress <i>optional</i>	A MAC address. Representation: string that consists of groups of two hexadecimal digits, separated by hyphens or colons.	string (MAC)

ipAddresses

Name	Description	Schema
addressRange <i>optional</i>	An IP address range to be used, e.g. in case of egress connections. In case this attribute is present, IP addresses from the range will be used.	addressRange
fixedAddresses <i>optional</i>	Fixed addresses to assign (from the subnet defined by "subnetId" if provided). Exactly one of "fixedAddresses", "numDynamicAddresses" or "ipAddressRange" shall be present.	< string (IP) > array
numDynamicAddresses <i>optional</i>	Number of dynamic addresses to assign (from the subnet defined by "subnetId" if provided). Exactly one of "fixedAddresses", "numDynamicAddresses" or "ipAddressRange" shall be present.	integer
subnetId <i>optional</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string

Name	Description	Schema
type <i>required</i>	The type of the IP addresses. Permitted values: IPV4, IPV6.	enum (IPV4, IPV6)

addressRange

Name	Description	Schema
maxAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
minAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)

extLinkPorts

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but the processing has not been completed. On success, the HTTP response shall include a "Location" HTTP header that contains the URI of the newly-created "VNF LCM operation occurrence" resource corresponding to the operation.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found Error: The API producer did not find a current representation for the target resource or is not willing to disclose that one exists. Specifically in case of this task resource, the response code 404 shall also returned if the task is not supported for the VNF instance represented by the parent resource, which means that the task resource consequently does not exist. In this case, the response body shall be present, and shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is in NOT-INSTANTIATED state, or that another lifecycle management operation is ongoing. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_instances/{vnfInstanceId}/heal

Description

Heal VNF

The POST method requests to heal a VNF instance resource.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string

Type	Name	Description	Schema
Path	vnfInstanceId <i>required</i>	Identifier of the VNF instance to be healed. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string
Body	HealVnfRequest <i>required</i>	Parameters for the Heal VNF operation.	HealVnfRequest

HealVnfRequest

Name	Description	Schema
additionalParams <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
cause <i>optional</i>	Indicates the reason why a healing procedure is required.	string

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but the processing has not been completed. On success, the HTTP response shall include a "Location" HTTP header that contains the URI of the newly-created "VNF LCM operation occurrence" resource corresponding to the operation.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content

HTTP Code	Description	Schema
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found Error: The API producer did not find a current representation for the target resource or is not willing to disclose that one exists. Specifically in case of this task resource, the response code 404 shall also returned if the task is not supported for the VNF instance represented by the parent resource, which means that the task resource consequently does not exist. In this case, the response body shall be present, and shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406

HTTP Code	Description	Schema
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is in NOT-INSTANTIATED state, or that another lifecycle management operation is ongoing. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)

Name	Description	Schema
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_instances/{vnfInstanceId}/instantiate

Description

Instantiate VNF

The POST method instantiates a VNF instance.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string
Path	vnfInstanceId <i>required</i>	Identifier of the VNF instance. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string

Type	Name	Description	Schema
Body	InstantiateVnfRequest <i>required</i>	Parameters for the VNF instantiation.	InstantiateVnfRequest

InstantiateVnfRequest

Name	Description	Schema
additionalParams <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extManagedVirtualLinks <i>optional</i>	Information about internal VLs that are managed by the NFVO.	< extManagedVirtualLinks > array
extVirtualLinks <i>optional</i>	Information about external VLs to connect the VNF to.	< extVirtualLinks > array
flavourId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
instantiationLevelId <i>optional</i>	An identifier that is unique within a VNF descriptor.	string
localizationLanguage <i>optional</i>	Localization language of the VNF to be instantiated. The value shall comply with the format defined in IETF RFC 5646.	string
vimConnectionInfo <i>optional</i>	Information about VIM connections to be used for managing the resources for the VNF instance, or refer to external / externally-managed virtual links. This attribute shall only be supported and may be present if VNF-related resource management in direct mode is applicable.	< vimConnectionInfo > array

extManagedVirtualLinks

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
virtualLinkId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

extVirtualLinks

Name	Description	Schema
extCps <i>required</i>	External CPs of the VNF to be connected to this external VL.	< extCps > array
extLinkPorts <i>optional</i>	Externally provided link ports to be used to connect external connection points to this external VL. If this attribute is not present, the VNFM shall create the link ports on the external VL.	< extLinkPorts > array
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string

extCps

Name	Description	Schema
cpConfig <i>required</i>	List of instance data that need to be configured on the CP instances created from the respective CPD.	< cpConfig > array
cpdId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

cpConfig

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
cpProtocolData <i>optional</i>	Parameters for configuring the network protocols on the link port that connects the CP to a VL. The following conditions apply to the attributes "linkPortId" and "cpProtocolData": * The "linkPortId" and "cpProtocolData" attributes shall both be absent for the deletion of an existing external CP instance addressed by cpInstanceId. * At least one of these attributes shall be present for a to-be-created external CP instance or an existing external CP instance. * If the "linkPortId" attribute is absent, the VNFM shall create a link port. * If the "cpProtocolData" attribute is absent, the "linkPortId" attribute shall be provided referencing a pre-created link port, and the VNFM can use means outside the scope of the present document to obtain the pre-configured address information for the connection point from the resource representing the link port. * If both "cpProtocolData" and "linkportId" are provided, the API consumer shall ensure that the cpProtocolData can be used with the pre-created link port referenced by "linkPortId".	< cpProtocolData > array
linkPortId <i>optional</i>	An identifier with the intention of being globally unique.	string

cpProtocolData

Name	Description	Schema
ipOverEthernet <i>optional</i>	This type represents network address data for IP over Ethernet.	ipOverEthernet

Name	Description	Schema
layerProtocol <i>required</i>	Identifier of layer(s) and protocol(s). This attribute allows to signal the addition of further types of layer and protocol in future versions of the present document in a backwards-compatible way. In the current version of the present document, only IP over Ethernet is supported.	enum (IP_OVER_ETHERNET)

ipOverEthernet

Name	Description	Schema
ipAddresses <i>optional</i>	List of IP addresses to assign to the CP instance. Each entry represents IP address data for fixed or dynamic IP address assignment per subnet. If this attribute is not present, no IP address shall be assigned.	< ipAddresses > array
macAddress <i>optional</i>	A MAC address. Representation: string that consists of groups of two hexadecimal digits, separated by hyphens or colons.	string (MAC)

ipAddresses

Name	Description	Schema
addressRange <i>optional</i>	An IP address range to be used, e.g. in case of egress connections. In case this attribute is present, IP addresses from the range will be used.	addressRange
fixedAddresses <i>optional</i>	Fixed addresses to assign (from the subnet defined by "subnetId" if provided). Exactly one of "fixedAddresses", "numDynamicAddresses" or "ipAddressRange" shall be present.	< string (IP) > array
numDynamicAddresses <i>optional</i>	Number of dynamic addresses to assign (from the subnet defined by "subnetId" if provided). Exactly one of "fixedAddresses", "numDynamicAddresses" or "ipAddressRange" shall be present.	integer
subnetId <i>optional</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
type <i>required</i>	The type of the IP addresses. Permitted values: IPV4, IPV6.	enum (IPV4, IPV6)

addressRange

Name	Description	Schema
maxAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)
minAddress <i>required</i>	An IPV4 or IPV6 address. Representation: In case of an IPV4 address, string that consists of four decimal integers separated by dots, each integer ranging from 0 to 255. In case of an IPV6 address, string that consists of groups of zero to four hexadecimal digits, separated by colons.	string (IP)

extLinkPorts

Name	Description	Schema
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but the processing has not been completed. The response body shall be empty. The HTTP response shall include a "Location" HTTP header that contains the URI of the newly-created "VNF LCM operation occurrence" resource corresponding to the operation.</p> <p>Headers : Location (string (url)) : The resource URI of the created VNF instance. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is in INSTANTIATED state. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
416	<p>Requested Range Not Satisfiable This code is returned if the requested byte range in the Range HTTP header is not present in the requested resource.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 416
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 416

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_instances/{vnfInstanceId}/operate

Description

Operate VNF

The POST method changes the operational state of a VNF instance resource.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string
Path	vnfInstanceId <i>required</i>	Identifier of the VNF instance to be operated. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string

Type	Name	Description	Schema
Body	OperateVnfRequest <i>required</i>	Parameters for the Operate VNF operation.	OperateVnfRequest

OperateVnfRequest

Name	Description	Schema
additionalParams <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
changeStateTo <i>required</i>		enum (STARTED, STOPPED)
gracefulStopTimeout <i>optional</i>	The time interval (in seconds) to wait for the VNF to be taken out of service during graceful stop, before stopping the VNF. The “stopType” and “gracefulStopTimeout” attributes shall be absent, when the “changeStateTo” attribute is equal to “STARTED”. The “gracefulStopTimeout” attribute shall be present, when the “changeStateTo” is equal to “STOPPED” and the “stopType” attribute is equal to “GRACEFUL”. The “gracefulStopTimeout” attribute shall be absent, when the “changeStateTo” attribute is equal to “STOPPED” and the “stopType” attribute is equal to “FORCEFUL”. The request shall be treated as if the “stopType” attribute was set to ”FORCEFUL”, when the “changeStateTo” attribute is equal to “STOPPED” and the “stopType” attribute is absent.	integer
stopType <i>optional</i>	<ul style="list-style-type: none"> • FORCEFUL: The VNFM will stop the VNF immediately after accepting the request. • GRACEFUL: The VNFM will first arrange to take the VNF out of service after accepting the request. Once that operation is successful or once the timer value specified in the "gracefulStopTimeout" attribute expires, the VNFM will stop the VNF. 	enum (FORCEFUL, GRACEFUL)

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but the processing has not been completed. On success, the HTTP response shall include a "Location" HTTP header that contains the URI of the newly-created "VNF LCM operation occurrence" resource corresponding to the operation.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found Error: The API producer did not find a current representation for the target resource or is not willing to disclose that one exists. Specifically in case of this task resource, the response code 404 shall also returned if the task is not supported for the VNF instance represented by the parent resource, which means that the task resource consequently does not exist. In this case, the response body shall be present, and shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is in NOT-INSTANTIATED state, or that another lifecycle management operation is ongoing. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_instances/{vnfInstanceId}/scale

Description

Scale VNF

The POST method requests to scale a VNF instance resource incrementally.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string

Type	Name	Description	Schema
Path	vnfInstanceId <i>required</i>	Identifier of the VNF instance to be scaled. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string
Body	ScaleVnfRequest <i>required</i>	Parameters for the scale VNF operation.	ScaleVnfRequest

ScaleVnfRequest

Name	Description	Schema
additionalParams <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
aspectId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
numberOfSteps <i>optional</i>	Number of scaling steps to be executed as part of this Scale VNF operation. It shall be a positive number and the default value shall be 1.	integer
type <i>required</i>	Indicates the type of the scale operation requested. Permitted values: * SCALE_OUT: adding additional VNFC instances to the VNF to increase capacity * SCALE_IN: removing VNFC instances from the VNF in order to release unused capacity.	enum (SCALE_OUT, SCALE_IN)

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but the processing has not been completed. On success, the HTTP response shall include a "Location" HTTP header that contains the URI of the newly-created "VNF LCM operation occurrence" resource corresponding to the operation.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found Error: The API producer did not find a current representation for the target resource or is not willing to disclose that one exists. Specifically in case of this task resource, the response code 404 shall also returned if the task is not supported for the VNF instance represented by the parent resource, which means that the task resource consequently does not exist. In this case, the response body shall be present, and shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is in NOT-INSTANTIATED state, or that another lifecycle management operation is ongoing. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_instances/{vnfInstanceId}/scale_to_level

Description

Scale VNF to Level

The POST method requests to scale a VNF instance resource to a target level.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string

Type	Name	Description	Schema
Path	vnfInstanceId <i>required</i>	Identifier of the VNF instance to be scaled to a target level. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string
Body	ScaleVnfToLevelRequest <i>required</i>	Parameters for the scale VNF to Level operation.	ScaleVnfToLevelRequest

ScaleVnfToLevelRequest

Name	Description	Schema
additionalParams <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
instantiationLevelId <i>optional</i>	An identifier that is unique within a VNF descriptor.	string
scaleInfo <i>optional</i>	For each scaling aspect of the current deployment flavour, indicates the target scale level to which the VNF is to be scaled. Either the instantiationLevelId attribute or the scaleInfo attribute shall be included.	< scaleInfo > array

scaleInfo

Name	Description	Schema
aspectId <i>required</i>	An identifier that is unique within a VNF descriptor.	string
scaleLevel <i>required</i>	Indicates the scale level. The minimum value shall be 0 and the maximum value shall be <= maxScaleLevel as described in the VNFD.	integer

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but the processing has not been completed. On success, the HTTP response shall include a "Location" HTTP header that contains the URI of the newly-created "VNF LCM operation occurrence" resource corresponding to the operation.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found Error: The API producer did not find a current representation for the target resource or is not willing to disclose that one exists. Specifically in case of this task resource, the response code 404 shall also returned if the task is not supported for the VNF instance represented by the parent resource, which means that the task resource consequently does not exist. In this case, the response body shall be present, and shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is in NOT-INSTANTIATED state, or that another lifecycle management operation is ongoing. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_instances/{vnfInstanceId}/terminate

Description

Terminate VNF

The POST method terminates a VNF instance.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type <i>required</i>	The MIME type of the body of the request. Reference: IETF RFC 7231	string

Type	Name	Description	Schema
Path	vnfInstanceId <i>required</i>	The identifier of the VNF instance to be terminated. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new VNF instance resource. It can also be retrieved from the "id" attribute in the payload body of that response.	string
Body	TerminateVnfRequest <i>required</i>	Parameters for the VNF termination.	TerminateVnfRequest

TerminateVnfRequest

Name	Description	Schema
additionalParams <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
gracefulTerminationTimeout <i>optional</i>	This attribute is only applicable in case of graceful termination. It defines the time to wait for the VNF to be taken out of service before shutting down the VNF and releasing the resources. The unit is seconds. If not given and the "terminationType" attribute is set to "GRACEFUL", it is expected that the VNFM waits for the successful taking out of service of the VNF, no matter how long it takes, before shutting down the VNF and releasing the resources.	integer
terminationType <i>required</i>	Indicates whether forceful or graceful termination is requested. Permitted values: * FORCEFUL: The VNFM will shut down the VNF and release the resources immediately after accepting the request. * GRACEFUL: The VNFM will first arrange to take the VNF out of service after accepting the request. Once the operation of taking the VNF out of service finishes (irrespective of whether it has succeeded or failed) or once the timer value specified in the "gracefulTerminationTimeout" attribute expires, the VNFM will shut down the VNF and release the resources.	enum (FORCEFUL, GRACEFUL)

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but the processing has not been completed. On success, the HTTP response shall include a "Location" HTTP header that contains the URI of the newly-created "VNF LCM operation occurrence" resource corresponding to the operation.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is in NOT-INSTANTIATED state, or that another lifecycle management operation is ongoing. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

GET /vnf_lcm_op_occs

Description

Get Operation Status

The client can use this method to query status information about multiple VNF lifecycle management operation occurrences.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string

Responses

HTTP Code	Description	Schema
200	<p>OK Status information for zero or more VNF lifecycle management operation occurrences was queried successfully. The response body shall contain status information about zero or more VNF lifecycle operation occurrences.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 200
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict Another request is in progress that prohibits the fulfilment of the current request, or the current resource state is inconsistent with the request.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 200

Name	Description	Schema
_links <i>optional</i>	Links to resources related to this resource.	_links

Name	Description	Schema
cancelMode <i>optional</i>	<p>Cancellation mode. GRACEFUL: If the VNF LCM operation occurrence is in "PROCESSING" or "ROLLING_BACK" state, the VNFM shall not start any new resource management operation and shall wait for the ongoing resource management operations in the underlying system, typically the VIM, to finish execution or to time out. After that, the VNFM shall put the operation occurrence into the FAILED_TEMP state. If the VNF LCM operation occurrence is in "STARTING" state, the VNFM shall not start any resource management operation and shall wait for the granting request to finish execution or time out. After that, the VNFM shall put the operation occurrence into the ROLLED_BACK state. FORCEFUL: If the VNF LCM operation occurrence is in "PROCESSING" or "ROLLING_BACK" state, the VNFM shall not start any new resource management operation, shall cancel the ongoing resource management operations in the underlying system, typically the VIM, and shall wait for the cancellation to finish or to time out. After that, the VNFM shall put the operation occurrence into the FAILED_TEMP state. If the VNF LCM operation occurrence is in "STARTING" state, the VNFM shall not start any resource management operation and put the operation occurrence into the ROLLED_BACK state.</p>	enum (GRACEFUL, FORCEFUL)
changedExtConnectivity <i>optional</i>	<p>Information about changed external connectivity, if applicable. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.</p>	< changedExtConnectivity > array
changedInfo <i>optional</i>	<p>This type represents attribute modifications that were performed on an "Individual VNF instance" resource. The attributes that can be included consist of those requested to be modified explicitly in the "VnfInfoModificationRequest" data structure, and additional attributes of the "VnfInstance" data structure that were modified implicitly e.g. when modifying the referenced VNF package.</p>	changedInfo

Name	Description	Schema
error <i>optional</i>	The definition of the general "ProblemDetails" data structure from IETF RFC 7807 [19] is reproduced in this structure. Compared to the general framework defined in IETF RFC 7807 [19], the "status" and "detail" attributes are mandated to be included by the present document, to ensure that the response contains additional textual information about an error. IETF RFC 7807 [19] foresees extensibility of the "ProblemDetails" type. It is possible that particular APIs in the present document, or particular implementations, define extensions to define additional attributes that provide more information about the error. The description column only provides some explanation of the meaning to Facilitate understanding of the design. For a full description, see IETF RFC 7807 [19].	error
grantId <i>optional</i>	An identifier with the intention of being globally unique.	string
id <i>required</i>	An identifier with the intention of being globally unique.	string
isAutomaticInvocation <i>required</i>	Set to true if this VNF LCM operation occurrence has been triggered by an automated procedure inside the VNFM (i.e. ScaleVnf / ScaleVnfToLevel triggered by auto-scale, or HealVnf triggered by auto-heal). Set to false otherwise.	boolean
isCancelPending <i>required</i>	If the VNF LCM operation occurrence is in "STARTING", "PROCESSING" or "ROLLING_BACK" state and the operation is being cancelled, this attribute shall be set to true. Otherwise, it shall be set to false.	boolean
operation <i>required</i>	Value Description — ——— INSTANTIATE Represents the "Instantiate VNF" LCM operation. SCALE Represents the "Scale VNF" LCM operation. SCALE_TO_LEVEL Represents the "Scale VNF to Level" LCM operation. CHANGE_FLAVOUR Represents the "Change VNF Flavour" LCM operation. TERMINATE Represents the "Terminate VNF" LCM operation. HEAL Represents the "Heal VNF" LCM operation. OPERATE Represents the "Operate VNF" LCM operation. CHANGE_EXT_CONN Represents the "Change external VNF connectivity" LCM operation. MODIFY_INFO Represents the "Modify VNF Information" LCM operation.	enum (INSTANTIATE, SCALE, SCALE_TO_LEVEL, CHANGE_FLAVOUR, TERMINATE, HEAL, OPERATE, CHANGE_EXT_CONN, MODIFY_INFO)

Name	Description	Schema
operationParams <i>required</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
operationState <i>required</i>	Value Description — ———— STARTING The LCM operation is starting. PROCESSING The LCM operation is currently in execution. COMPLETED The LCM operation has been completed successfully. FAILED_TEMP The LCM operation has failed and execution has stopped, but the execution of the operation is not considered to be closed. FAILED The LCM operation has failed and it cannot be retried or rolled back, as it is determined that such action won't succeed. ROLLING_BACK The LCM operation is currently being rolled back. ROLLED_BACK The LCM operation has been successfully rolled back, i.e. The state of the VNF prior to the original operation invocation has been restored as closely as possible.	enum (STARTING, PROCESSING, COMPLETED, FAILED_TEMP, FAILED, ROLLING_BACK, ROLLED_BACK)
resourceChanges <i>optional</i>	This attribute contains information about the cumulative changes to virtualised resources that were performed so far by the LCM operation since its start, if applicable.	resourceChanges
startTime <i>required</i>	Date-time of the start of the operation.	string (date-time)
stateEnteredTime <i>required</i>	Date-time when the current state was entered.	string (date-time)
vnfInstanceId <i>required</i>	An identifier with the intention of being globally unique.	string

links

Name	Description	Schema
cancel <i>optional</i>	This type represents a link to a resource.	cancel
fail <i>optional</i>	This type represents a link to a resource.	fail

Name	Description	Schema
grant <i>optional</i>	This type represents a link to a resource.	grant
retry <i>optional</i>	This type represents a link to a resource.	retry
rollback <i>optional</i>	This type represents a link to a resource.	rollback
self <i>required</i>	This type represents a link to a resource.	self
vnfInstance <i>required</i>	This type represents a link to a resource.	vnfInstance

cancel

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

fail

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

grant

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

retry

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

rollback

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

self

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

vnfInstance

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

changedExtConnectivity

Name	Description	Schema
extLinkPorts <i>optional</i>	Link ports of this VL.	< extLinkPorts > array
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

extLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

changedInfo

Name	Description	Schema
extensions <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimConnectionInfo <i>optional</i>	If present, this attribute signals modifications of certain entries in the "vimConnectionInfo" attribute array in "VnfInstance".	< vimConnectionInfo > array
vnfConfigurableProperties <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vnfInstanceDescription <i>optional</i>	If present, this attribute signals modifications of the "vnfInstanceDescription" attribute in "VnfInstance".	string
vnfInstanceName <i>optional</i>	If present, this attribute signals modifications of the "vnfInstanceName" attribute in "VnfInstance".	string
vnfPkgId <i>optional</i>	An identifier with the intention of being globally unique.	string
vnfProductName <i>optional</i>	If present, this attribute signals modifications of the "vnfProductName" attribute in "VnfInstance". If present, this attribute (which depends on the value of the "vnfPkgId" attribute) was modified implicitly following a request to modify the "vnfPkgId" attribute, by copying the value of this attribute from the VNFD in the VNF Package identified by the "vnfPkgId" attribute.	string

Name	Description	Schema
vnfProvider <i>optional</i>	If present, this attribute signals modifications of the "vnfProvider" attribute in "VnfInstance". If present, this attribute (which depends on the value of the "vnfPkgId" attribute) was modified implicitly following a request to modify the "vnfPkgId" attribute, by copying the value of this attribute from the VNFD in the VNF Package identified by the "vnfPkgId" attribute.	string
vnfSoftwareVersion <i>optional</i>	A Version.	string
vnfdId <i>optional</i>	An identifier with the intention of being globally unique.	string
vnfdVersion <i>optional</i>	A Version.	string

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

error

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

resourceChanges

Name	Description	Schema
affectedVirtualLinks <i>optional</i>	Information about VL instances that were affected during the lifecycle operation. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< affectedVirtualLinks > array
affectedVirtualStorages <i>optional</i>	Information about virtualised storage instances that were affected during the lifecycle operation. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< affectedVirtualStorages > array
affectedVnfcs <i>optional</i>	Information about VNFC instances that were affected during the lifecycle operation. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< affectedVnfcs > array

affectedVirtualLinks

Name	Description	Schema
changeType <i>required</i>	Signals the type of change. Permitted values: * ADDED * REMOVED * MODIFIED * TEMPORARY * LINK_PORT_ADDED * LINK_PORT_REMOVED For a temporary resource, an AffectedVirtualLink structure exists as long as the temporary resource exists.	enum (ADDED, REMOVED, MODIFIED, TEMPORARY, LINK_PORT_ADDED, LINK_PORT_REMOVED)
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
networkResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	networkResource

Name	Description	Schema
virtualLinkId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

networkResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

affectedVirtualStorages

Name	Description	Schema
changeType <i>required</i>	Signals the type of change. Permitted values: * ADDED * REMOVED * MODIFIED * TEMPORARY For a temporary resource, an AffectedVirtualStorage structure exists as long as the temporary resource exists.	enum (ADDED, REMOVED, MODIFIED, TEMPORARY)
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
storageResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	storageResource

Name	Description	Schema
virtualStorageDescId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

storageResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

affectedVnfcs

Name	Description	Schema
addedStorageResourceIds <i>optional</i>	References to VirtualStorage resources that have been added. Each value refers to a VirtualStorageResourceInfo item in the VnfInstance that was added to the VNFC. It shall be provided if at least one storage resource was added to the VNFC.	< string > array
affectedVnfcpIds <i>optional</i>	Identifiers of CP(s) of the VNFC instance that were affected by the change. Shall be present for those affected CPs of the VNFC instance that are associated to an external CP of the VNF instance. May be present for further affected CPs of the VNFC instance.	< string > array
changeType <i>required</i>	Signals the type of change. Permitted values: * ADDED * REMOVED * MODIFIED * TEMPORARY For a temporary resource, an AffectedVnfc structure exists as long as the temporary resource exists.	enum (ADDED, REMOVED, MODIFIED, TEMPORARY)

Name	Description	Schema
computeResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	computeResource
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
removedStorageResourceIds <i>optional</i>	References to VirtualStorage resources that have been removed. The value contains the identifier of a VirtualStorageResourceInfo item that has been removed from the VNFC, and might no longer exist in the VnfInstance. It shall be provided if at least one storage resource was removed from the VNFC.	< string > array
vduId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

computeResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

GET /vnf_lcm_op_occs/{vnfLcmOpOccId}

Description

Get Operation Status

The client can use this method to retrieve status information about a VNF lifecycle management operation occurrence by reading an individual "VNF LCM operation occurrence" resource.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string

Type	Name	Description	Schema
Path	vnfLcmOpOccId <i>required</i>	Identifier of a VNF lifecycle management operation occurrence. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a PATCH or POST request triggering a VNF LCM operation. It can also be retrieved from the "vnfLcmOpOccId" attribute in the VnfLcmOperationOccurrenceNotification.	string

Responses

HTTP Code	Description	Schema
200	<p>OK Information about an individual VNF instance was queried successfully. The response body shall contain status information about a VNF lifecycle management operation occurrence.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 200

HTTP Code	Description	Schema
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>Conflict Another request is in progress that prohibits the fulfilment of the current request, or the current resource state is inconsistent with the request.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409

HTTP Code	Description	Schema
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 200

Name	Description	Schema
_links <i>optional</i>	Links to resources related to this resource.	_links

Name	Description	Schema
cancelMode <i>optional</i>	<p>Cancellation mode. GRACEFUL: If the VNF LCM operation occurrence is in "PROCESSING" or "ROLLING_BACK" state, the VNFM shall not start any new resource management operation and shall wait for the ongoing resource management operations in the underlying system, typically the VIM, to finish execution or to time out. After that, the VNFM shall put the operation occurrence into the FAILED_TEMP state. If the VNF LCM operation occurrence is in "STARTING" state, the VNFM shall not start any resource management operation and shall wait for the granting request to finish execution or time out. After that, the VNFM shall put the operation occurrence into the ROLLED_BACK state. FORCEFUL: If the VNF LCM operation occurrence is in "PROCESSING" or "ROLLING_BACK" state, the VNFM shall not start any new resource management operation, shall cancel the ongoing resource management operations in the underlying system, typically the VIM, and shall wait for the cancellation to finish or to time out. After that, the VNFM shall put the operation occurrence into the FAILED_TEMP state. If the VNF LCM operation occurrence is in "STARTING" state, the VNFM shall not start any resource management operation and put the operation occurrence into the ROLLED_BACK state.</p>	enum (GRACEFUL, FORCEFUL)
changedExtConnectivity <i>optional</i>	<p>Information about changed external connectivity, if applicable. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.</p>	< changedExtConnectivity > array
changedInfo <i>optional</i>	<p>This type represents attribute modifications that were performed on an "Individual VNF instance" resource. The attributes that can be included consist of those requested to be modified explicitly in the "VnfInfoModificationRequest" data structure, and additional attributes of the "VnfInstance" data structure that were modified implicitly e.g. when modifying the referenced VNF package.</p>	changedInfo

Name	Description	Schema
error <i>optional</i>	The definition of the general "ProblemDetails" data structure from IETF RFC 7807 [19] is reproduced in this structure. Compared to the general framework defined in IETF RFC 7807 [19], the "status" and "detail" attributes are mandated to be included by the present document, to ensure that the response contains additional textual information about an error. IETF RFC 7807 [19] foresees extensibility of the "ProblemDetails" type. It is possible that particular APIs in the present document, or particular implementations, define extensions to define additional attributes that provide more information about the error. The description column only provides some explanation of the meaning to Facilitate understanding of the design. For a full description, see IETF RFC 7807 [19].	error
grantId <i>optional</i>	An identifier with the intention of being globally unique.	string
id <i>required</i>	An identifier with the intention of being globally unique.	string
isAutomaticInvocation <i>required</i>	Set to true if this VNF LCM operation occurrence has been triggered by an automated procedure inside the VNFM (i.e. ScaleVnf / ScaleVnfToLevel triggered by auto-scale, or HealVnf triggered by auto-heal). Set to false otherwise.	boolean
isCancelPending <i>required</i>	If the VNF LCM operation occurrence is in "STARTING", "PROCESSING" or "ROLLING_BACK" state and the operation is being cancelled, this attribute shall be set to true. Otherwise, it shall be set to false.	boolean
operation <i>required</i>	Value Description — ——— INSTANTIATE Represents the "Instantiate VNF" LCM operation. SCALE Represents the "Scale VNF" LCM operation. SCALE_TO_LEVEL Represents the "Scale VNF to Level" LCM operation. CHANGE_FLAVOUR Represents the "Change VNF Flavour" LCM operation. TERMINATE Represents the "Terminate VNF" LCM operation. HEAL Represents the "Heal VNF" LCM operation. OPERATE Represents the "Operate VNF" LCM operation. CHANGE_EXT_CONN Represents the "Change external VNF connectivity" LCM operation. MODIFY_INFO Represents the "Modify VNF Information" LCM operation.	enum (INSTANTIATE, SCALE, SCALE_TO_LEVEL, CHANGE_FLAVOUR, TERMINATE, HEAL, OPERATE, CHANGE_EXT_CONN, MODIFY_INFO)

Name	Description	Schema
operationParams <i>required</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
operationState <i>required</i>	Value Description — ———— STARTING The LCM operation is starting. PROCESSING The LCM operation is currently in execution. COMPLETED The LCM operation has been completed successfully. FAILED_TEMP The LCM operation has failed and execution has stopped, but the execution of the operation is not considered to be closed. FAILED The LCM operation has failed and it cannot be retried or rolled back, as it is determined that such action won't succeed. ROLLING_BACK The LCM operation is currently being rolled back. ROLLED_BACK The LCM operation has been successfully rolled back, i.e. The state of the VNF prior to the original operation invocation has been restored as closely as possible.	enum (STARTING, PROCESSING, COMPLETED, FAILED_TEMP, FAILED, ROLLING_BACK, ROLLED_BACK)
resourceChanges <i>optional</i>	This attribute contains information about the cumulative changes to virtualised resources that were performed so far by the LCM operation since its start, if applicable.	resourceChanges
startTime <i>required</i>	Date-time of the start of the operation.	string (date-time)
stateEnteredTime <i>required</i>	Date-time when the current state was entered.	string (date-time)
vnfInstanceId <i>required</i>	An identifier with the intention of being globally unique.	string

links

Name	Description	Schema
cancel <i>optional</i>	This type represents a link to a resource.	cancel
fail <i>optional</i>	This type represents a link to a resource.	fail

Name	Description	Schema
grant <i>optional</i>	This type represents a link to a resource.	grant
retry <i>optional</i>	This type represents a link to a resource.	retry
rollback <i>optional</i>	This type represents a link to a resource.	rollback
self <i>required</i>	This type represents a link to a resource.	self
vnfInstance <i>required</i>	This type represents a link to a resource.	vnfInstance

cancel

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

fail

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

grant

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

retry

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

rollback

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

self

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

vnfInstance

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

changedExtConnectivity

Name	Description	Schema
extLinkPorts <i>optional</i>	Link ports of this VL.	< extLinkPorts > array
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

extLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

changedInfo

Name	Description	Schema
extensions <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimConnectionInfo <i>optional</i>	If present, this attribute signals modifications of certain entries in the "vimConnectionInfo" attribute array in "VnfInstance".	< vimConnectionInfo > array
vnfConfigurableProperties <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vnfInstanceDescription <i>optional</i>	If present, this attribute signals modifications of the "vnfInstanceDescription" attribute in "VnfInstance".	string
vnfInstanceName <i>optional</i>	If present, this attribute signals modifications of the "vnfInstanceName" attribute in "VnfInstance".	string
vnfPkgId <i>optional</i>	An identifier with the intention of being globally unique.	string
vnfProductName <i>optional</i>	If present, this attribute signals modifications of the "vnfProductName" attribute in "VnfInstance". If present, this attribute (which depends on the value of the "vnfPkgId" attribute) was modified implicitly following a request to modify the "vnfPkgId" attribute, by copying the value of this attribute from the VNFD in the VNF Package identified by the "vnfPkgId" attribute.	string

Name	Description	Schema
vnfProvider <i>optional</i>	If present, this attribute signals modifications of the "vnfProvider" attribute in "VnfInstance". If present, this attribute (which depends on the value of the "vnfPkgId" attribute) was modified implicitly following a request to modify the "vnfPkgId" attribute, by copying the value of this attribute from the VNFD in the VNF Package identified by the "vnfPkgId" attribute.	string
vnfSoftwareVersion <i>optional</i>	A Version.	string
vnfdId <i>optional</i>	An identifier with the intention of being globally unique.	string
vnfdVersion <i>optional</i>	A Version.	string

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

error

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

resourceChanges

Name	Description	Schema
affectedVirtualLinks <i>optional</i>	Information about VL instances that were affected during the lifecycle operation. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< affectedVirtualLinks > array
affectedVirtualStorages <i>optional</i>	Information about virtualised storage instances that were affected during the lifecycle operation. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< affectedVirtualStorages > array
affectedVnfcs <i>optional</i>	Information about VNFC instances that were affected during the lifecycle operation. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< affectedVnfcs > array

affectedVirtualLinks

Name	Description	Schema
changeType <i>required</i>	Signals the type of change. Permitted values: * ADDED * REMOVED * MODIFIED * TEMPORARY * LINK_PORT_ADDED * LINK_PORT_REMOVED For a temporary resource, an AffectedVirtualLink structure exists as long as the temporary resource exists.	enum (ADDED, REMOVED, MODIFIED, TEMPORARY, LINK_PORT_ADDED, LINK_PORT_REMOVED)
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
networkResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	networkResource

Name	Description	Schema
virtualLinkId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

networkResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

affectedVirtualStorages

Name	Description	Schema
changeType <i>required</i>	Signals the type of change. Permitted values: * ADDED * REMOVED * MODIFIED * TEMPORARY For a temporary resource, an AffectedVirtualStorage structure exists as long as the temporary resource exists.	enum (ADDED, REMOVED, MODIFIED, TEMPORARY)
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
storageResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	storageResource

Name	Description	Schema
virtualStorageDescId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

storageResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

affectedVnfcs

Name	Description	Schema
addedStorageResourceIds <i>optional</i>	References to VirtualStorage resources that have been added. Each value refers to a VirtualStorageResourceInfo item in the VnfInstance that was added to the VNFC. It shall be provided if at least one storage resource was added to the VNFC.	< string > array
affectedVnfcpIds <i>optional</i>	Identifiers of CP(s) of the VNFC instance that were affected by the change. Shall be present for those affected CPs of the VNFC instance that are associated to an external CP of the VNF instance. May be present for further affected CPs of the VNFC instance.	< string > array
changeType <i>required</i>	Signals the type of change. Permitted values: * ADDED * REMOVED * MODIFIED * TEMPORARY For a temporary resource, an AffectedVnfc structure exists as long as the temporary resource exists.	enum (ADDED, REMOVED, MODIFIED, TEMPORARY)

Name	Description	Schema
computeResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	computeResource
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
removedStorageResourceIds <i>optional</i>	References to VirtualStorage resources that have been removed. The value contains the identifier of a VirtualStorageResourceInfo item that has been removed from the VNFC, and might no longer exist in the VnfInstance. It shall be provided if at least one storage resource was removed from the VNFC.	< string > array
vduId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

computeResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_lcm_op_occs/{vnfLcmOpOccId}/cancel

Description

The POST method initiates cancelling an ongoing VNF lifecycle operation while it is being executed or rolled back, i.e. the related "VNF LCM operation occurrence" is either in "PROCESSING" or "ROLLING_BACK" state.

Parameters

Type	Name	Description	Schema
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string

Type	Name	Description	Schema
Path	vnfLcmOpOccId <i>required</i>	Identifier of a VNF lifecycle management operation occurrence to be cancelled. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a PATCH or POST request triggering a VNF LCM operation. It can also be retrieved from the "vnfLcmOpOccId" attribute in the VnfLcmOperationOccurrenceNotification.	string

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but processing has not been completed. The response shall have an empty payload body.</p> <p>Headers :</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content

HTTP Code	Description	Schema
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found Error: The API producer did not find a current representation for the target resource or is not willing to disclose that one exists. Specifically in case of this task resource, the response code 404 shall also be returned if the task is not supported for the VNF LCM operation occurrence represented by the parent resource, which means that the task resource consequently does not exist. In this case, the response body shall be present, and shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406

HTTP Code	Description	Schema
409	<p>Conflict The operation cannot be executed currently, due to a conflict with the state of the VNF LCM operation occurrence resource. Typically, this is due to the fact that the operation occurrence is not in STARTING, PROCESSING or ROLLING_BACK state. The response body shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)

Name	Description	Schema
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_lcm_op_occs/{vnfLcmOpOccId}/fail

Description

The POST method marks a VNF lifecycle management operation occurrence as "finally failed" if that operation occurrence is in "FAILED_TEMP" state.

Parameters

Type	Name	Description	Schema
Header	Accept <i>required</i>	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Path	vnfLcmOpOccId <i>required</i>	Identifier of a VNF lifecycle management operation occurrence to be marked as "failed". This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a PATCH or POST request triggering a VNF LCM operation. It can also be retrieved from the "vnfLcmOpOccId" attribute in the VnfLcmOperationOccurrenceNotification.	string

Responses

HTTP Code	Description	Schema
200	<p>OK The state of the VNF lifecycle management operation occurrence was changed successfully. The response shall include a representation of the VNF lifecycle operation occurrence resource.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 200
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found Error: The API producer did not find a current representation for the target resource or is not willing to disclose that one exists. Specifically in case of this task resource, the response code 404 shall also be returned if the task is not supported for the VNF LCM operation occurrence represented by the parent resource, which means that the task resource consequently does not exist. In this case, the response body shall be present, and shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is not in FAILED_TEMP state, or another error handling action is starting, such as rollback or fail. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 200

Name	Description	Schema
<u>links</u> <i>optional</i>	Links to resources related to this resource.	_links
cancelMode <i>optional</i>	Cancellation mode. GRACEFUL: If the VNF LCM operation occurrence is in "PROCESSING" or "ROLLING_BACK" state, the VNFM shall not start any new resource management operation and shall wait for the ongoing resource management operations in the underlying system, typically the VIM, to finish execution or to time out. After that, the VNFM shall put the operation occurrence into the FAILED_TEMP state. If the VNF LCM operation occurrence is in "STARTING" state, the VNFM shall not start any resource management operation and shall wait for the granting request to finish execution or time out. After that, the VNFM shall put the operation occurrence into the ROLLED_BACK state. FORCEFUL: If the VNF LCM operation occurrence is in "PROCESSING" or "ROLLING_BACK" state, the VNFM shall not start any new resource management operation, shall cancel the ongoing resource management operations in the underlying system, typically the VIM, and shall wait for the cancellation to finish or to time out. After that, the VNFM shall put the operation occurrence into the FAILED_TEMP state. If the VNF LCM operation occurrence is in "STARTING" state, the VNFM shall not start any resource management operation and put the operation occurrence into the ROLLED_BACK state.	enum (GRACEFUL, FORCEFUL)
changedExtConnectivity <i>optional</i>	Information about changed external connectivity, if applicable. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< changedExtConnectivity > array
changedInfo <i>optional</i>	This type represents attribute modifications that were performed on an "Individual VNF instance" resource. The attributes that can be included consist of those requested to be modified explicitly in the "VnfInfoModificationRequest" data structure, and additional attributes of the "VnfInstance" data structure that were modified implicitly e.g. when modifying the referenced VNF package.	changedInfo

Name	Description	Schema
error <i>optional</i>	The definition of the general "ProblemDetails" data structure from IETF RFC 7807 [19] is reproduced in this structure. Compared to the general framework defined in IETF RFC 7807 [19], the "status" and "detail" attributes are mandated to be included by the present document, to ensure that the response contains additional textual information about an error. IETF RFC 7807 [19] foresees extensibility of the "ProblemDetails" type. It is possible that particular APIs in the present document, or particular implementations, define extensions to define additional attributes that provide more information about the error. The description column only provides some explanation of the meaning to Facilitate understanding of the design. For a full description, see IETF RFC 7807 [19].	error
grantId <i>optional</i>	An identifier with the intention of being globally unique.	string
id <i>required</i>	An identifier with the intention of being globally unique.	string
isAutomaticInvocation <i>required</i>	Set to true if this VNF LCM operation occurrence has been triggered by an automated procedure inside the VNFM (i.e. ScaleVnf / ScaleVnfToLevel triggered by auto-scale, or HealVnf triggered by auto-heal). Set to false otherwise.	boolean
isCancelPending <i>required</i>	If the VNF LCM operation occurrence is in "STARTING", "PROCESSING" or "ROLLING_BACK" state and the operation is being cancelled, this attribute shall be set to true. Otherwise, it shall be set to false.	boolean
operation <i>required</i>	Value Description — ——— INSTANTIATE Represents the "Instantiate VNF" LCM operation. SCALE Represents the "Scale VNF" LCM operation. SCALE_TO_LEVEL Represents the "Scale VNF to Level" LCM operation. CHANGE_FLAVOUR Represents the "Change VNF Flavour" LCM operation. TERMINATE Represents the "Terminate VNF" LCM operation. HEAL Represents the "Heal VNF" LCM operation. OPERATE Represents the "Operate VNF" LCM operation. CHANGE_EXT_CONN Represents the "Change external VNF connectivity" LCM operation. MODIFY_INFO Represents the "Modify VNF Information" LCM operation.	enum (INSTANTIATE, SCALE, SCALE_TO_LEVEL, CHANGE_FLAVOUR, TERMINATE, HEAL, OPERATE, CHANGE_EXT_CONN, MODIFY_INFO)

Name	Description	Schema
operationParams <i>required</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
operationState <i>required</i>	Value Description — ———— STARTING The LCM operation is starting. PROCESSING The LCM operation is currently in execution. COMPLETED The LCM operation has been completed successfully. FAILED_TEMP The LCM operation has failed and execution has stopped, but the execution of the operation is not considered to be closed. FAILED The LCM operation has failed and it cannot be retried or rolled back, as it is determined that such action won't succeed. ROLLING_BACK The LCM operation is currently being rolled back. ROLLED_BACK The LCM operation has been successfully rolled back, i.e. The state of the VNF prior to the original operation invocation has been restored as closely as possible.	enum (STARTING, PROCESSING, COMPLETED, FAILED_TEMP, FAILED, ROLLING_BACK, ROLLED_BACK)
resourceChanges <i>optional</i>	This attribute contains information about the cumulative changes to virtualised resources that were performed so far by the LCM operation since its start, if applicable.	resourceChanges
startTime <i>required</i>	Date-time of the start of the operation.	string (date-time)
stateEnteredTime <i>required</i>	Date-time when the current state was entered.	string (date-time)
vnfInstanceId <i>required</i>	An identifier with the intention of being globally unique.	string

links

Name	Description	Schema
cancel <i>optional</i>	This type represents a link to a resource.	cancel
fail <i>optional</i>	This type represents a link to a resource.	fail

Name	Description	Schema
grant <i>optional</i>	This type represents a link to a resource.	grant
retry <i>optional</i>	This type represents a link to a resource.	retry
rollback <i>optional</i>	This type represents a link to a resource.	rollback
self <i>required</i>	This type represents a link to a resource.	self
vnfInstance <i>required</i>	This type represents a link to a resource.	vnfInstance

cancel

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

fail

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

grant

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

retry

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

rollback

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

self

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

vnfInstance

Name	Description	Schema
href <i>required</i>	URI of the referenced resource.	string (url)

changedExtConnectivity

Name	Description	Schema
extLinkPorts <i>optional</i>	Link ports of this VL.	< extLinkPorts > array
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

extLinkPorts

Name	Description	Schema
cpInstanceId <i>optional</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
id <i>required</i>	An identifier with the intention of being globally unique.	string
resourceHandle <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	resourceHandle

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

resourceHandle

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

changedInfo

Name	Description	Schema
extensions <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimConnectionInfo <i>optional</i>	If present, this attribute signals modifications of certain entries in the "vimConnectionInfo" attribute array in "VnfInstance".	< vimConnectionInfo > array
vnfConfigurableProperties <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vnfInstanceDescription <i>optional</i>	If present, this attribute signals modifications of the "vnfInstanceDescription" attribute in "VnfInstance".	string
vnfInstanceName <i>optional</i>	If present, this attribute signals modifications of the "vnfInstanceName" attribute in "VnfInstance".	string
vnfPkgId <i>optional</i>	An identifier with the intention of being globally unique.	string
vnfProductName <i>optional</i>	If present, this attribute signals modifications of the "vnfProductName" attribute in "VnfInstance". If present, this attribute (which depends on the value of the "vnfPkgId" attribute) was modified implicitly following a request to modify the "vnfPkgId" attribute, by copying the value of this attribute from the VNFD in the VNF Package identified by the "vnfPkgId" attribute.	string

Name	Description	Schema
vnfProvider <i>optional</i>	If present, this attribute signals modifications of the "vnfProvider" attribute in "VnfInstance". If present, this attribute (which depends on the value of the "vnfPkgId" attribute) was modified implicitly following a request to modify the "vnfPkgId" attribute, by copying the value of this attribute from the VNFD in the VNF Package identified by the "vnfPkgId" attribute.	string
vnfSoftwareVersion <i>optional</i>	A Version.	string
vnfdId <i>optional</i>	An identifier with the intention of being globally unique.	string
vnfdVersion <i>optional</i>	A Version.	string

vimConnectionInfo

Name	Description	Schema
accessInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
extra <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
id <i>required</i>	An identifier with the intention of being globally unique.	string
interfaceInfo <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
vimId <i>optional</i>	An identifier with the intention of being globally unique.	string

Name	Description	Schema
vimType <i>required</i>	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	string

error

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

resourceChanges

Name	Description	Schema
affectedVirtualLinks <i>optional</i>	Information about VL instances that were affected during the lifecycle operation. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< affectedVirtualLinks > array
affectedVirtualStorages <i>optional</i>	Information about virtualised storage instances that were affected during the lifecycle operation. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< affectedVirtualStorages > array
affectedVnfcs <i>optional</i>	Information about VNFC instances that were affected during the lifecycle operation. This allows the NFVO to obtain the information contained in the latest "result" notification if it has not received it due to an error or a wrongly configured subscription filter.	< affectedVnfcs > array

affectedVirtualLinks

Name	Description	Schema
changeType <i>required</i>	Signals the type of change. Permitted values: * ADDED * REMOVED * MODIFIED * TEMPORARY * LINK_PORT_ADDED * LINK_PORT_REMOVED For a temporary resource, an AffectedVirtualLink structure exists as long as the temporary resource exists.	enum (ADDED, REMOVED, MODIFIED, TEMPORARY, LINK_PORT_ADDED, LINK_PORT_REMOVED)
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
networkResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	networkResource

Name	Description	Schema
virtualLinkId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

networkResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

affectedVirtualStorages

Name	Description	Schema
changeType <i>required</i>	Signals the type of change. Permitted values: * ADDED * REMOVED * MODIFIED * TEMPORARY For a temporary resource, an AffectedVirtualStorage structure exists as long as the temporary resource exists.	enum (ADDED, REMOVED, MODIFIED, TEMPORARY)
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
storageResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	storageResource

Name	Description	Schema
virtualStorageDescId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

storageResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

affectedVnfcs

Name	Description	Schema
addedStorageResourceIds <i>optional</i>	References to VirtualStorage resources that have been added. Each value refers to a VirtualStorageResourceInfo item in the VnfInstance that was added to the VNFC. It shall be provided if at least one storage resource was added to the VNFC.	< string > array
affectedVnfcpIds <i>optional</i>	Identifiers of CP(s) of the VNFC instance that were affected by the change. Shall be present for those affected CPs of the VNFC instance that are associated to an external CP of the VNF instance. May be present for further affected CPs of the VNFC instance.	< string > array
changeType <i>required</i>	Signals the type of change. Permitted values: * ADDED * REMOVED * MODIFIED * TEMPORARY For a temporary resource, an AffectedVnfc structure exists as long as the temporary resource exists.	enum (ADDED, REMOVED, MODIFIED, TEMPORARY)

Name	Description	Schema
computeResource <i>required</i>	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance. Information about the resource is available from the VIM.	computeResource
id <i>required</i>	An identifier that is unique for the respective type within a VNF instance, but may not be globally unique.	string
metadata <i>optional</i>	This type represents a list of key-value pairs. The order of the pairs in the list is not significant. In JSON, a set of key-value pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 7159.	object
removedStorageResourceIds <i>optional</i>	References to VirtualStorage resources that have been removed. The value contains the identifier of a VirtualStorageResourceInfo item that has been removed from the VNFC, and might no longer exist in the VnfInstance. It shall be provided if at least one storage resource was removed from the VNFC.	< string > array
vduId <i>required</i>	An identifier that is unique within a VNF descriptor.	string

computeResource

Name	Description	Schema
resourceId <i>required</i>	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProviderId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimConnectionId <i>optional</i>	An identifier with the intention of being globally unique.	string
vimLevelResourceType <i>optional</i>	Type of the resource in the scope of the VIM or the resource provider.	string

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_lcm_op_occs/{vnfLcmOpOccId}/retry

Description

The POST method initiates retrying a VNF lifecycle operation if that operation has experienced a temporary failure, i.e. the related "VNF LCM operation occurrence" resource is in "FAILED_TEMP" state.

Parameters

Type	Name	Description	Schema
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string

Type	Name	Description	Schema
Path	vnfLcmOpOccId <i>required</i>	Identifier of a VNF lifecycle management operation occurrence to be retried. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a PATCH or POST request triggering a VNF LCM operation. It can also be retrieved from the "vnfLcmOpOccId" attribute in the VnfLcmOperationOccurrenceNotification.	string

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but processing has not been completed. The response shall have an empty payload body.</p> <p>Headers :</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content

HTTP Code	Description	Schema
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401

HTTP Code	Description	Schema
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found Error: The API producer did not find a current representation for the target resource or is not willing to disclose that one exists. Specifically in case of this task resource, the response code 404 shall also be returned if the task is not supported for the VNF LCM operation occurrence represented by the parent resource, which means that the task resource consequently does not exist. In this case, the response body shall be present, and shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406

HTTP Code	Description	Schema
409	<p>The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is not in FAILED_TEMP state, or another error handling action is starting, such as rollback or fail. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)

Name	Description	Schema
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 401

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 403

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 404

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 405

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 406

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

Name	Description	Schema
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 409

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 500

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

Name	Description	Schema
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

Response 503

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer

Name	Description	Schema
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

POST /vnf_lcm_op_occs/{vnfLcmOpOccId}/rollback

Description

The POST method initiates rolling back a VNF lifecycle operation if that operation has experienced a temporary failure, i.e. the related "VNF LCM operation occurrence" resource is in "FAILED_TEMP" state.

Parameters

Type	Name	Description	Schema
Header	Authorization <i>optional</i>	The authorization token for the request. Reference: IETF RFC 7235	string
Path	vnfLcmOpOccId <i>required</i>	Identifier of a VNF lifecycle management operation occurrence to be rolled back. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a PATCH or POST request triggering a VNF LCM operation. It can also be retrieved from the "vnfLcmOpOccId" attribute in the VnfLcmOperationOccurrenceNotification.	string

Responses

HTTP Code	Description	Schema
202	<p>Accepted The request was accepted for processing, but processing has not been completed. The response shall have an empty payload body.</p> <p>Headers :</p> <p>Location (string (url)) : The resource URI of the created VNF instance.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	No Content
400	<p>Bad Request If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or a syntactically incorrect payload body), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and should include in the "detail" attribute more information about the source of the problem. —</p> <p>If the request contains a malformed access token, the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided. —</p> <p>If there is an application error related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 400

HTTP Code	Description	Schema
401	<p>Unauthorized If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 401
403	<p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 403
404	<p>Not Found Error: The API producer did not find a current representation for the target resource or is not willing to disclose that one exists. Specifically in case of this task resource, the response code 404 shall also be returned if the task is not supported for the VNF LCM operation occurrence represented by the parent resource, which means that the task resource consequently does not exist. In this case, the response body shall be present, and shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 404
405	<p>Not Found If the API producer did not find a current representation for the resource addressed by the URI passed in the request, or is not willing to disclose that one exists, it shall respond with this response code. The "ProblemDetails" structure may be provided, including in the "detail" attribute information about the source of the problem, e.g. a wrong resource URI variable.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 405

HTTP Code	Description	Schema
406	<p>Not Acceptable If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 406
409	<p>The operation cannot be executed currently, due to a conflict with the state of the VNF instance resource. Typically, this is due to the fact that the VNF instance resource is not in FAILED_TEMP state, or another error handling action is starting, such as rollback or fail. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p>	Response 409
500	<p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 500
503	<p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the "Retry-After" HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p>	Response 503

Response 400

Name	Description	Schema
detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
type <i>optional</i>	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	string (URI)

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status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
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detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string

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detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string
instance <i>optional</i>	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)
status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
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detail <i>required</i>	A human-readable explanation specific to this occurrence of the problem.	string

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status <i>required</i>	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
title <i>optional</i>	A short, human-readable summary of the problem type. It should not change from occurrence to occurrence of the problem, except for purposes of localization. If type is given and other than "about:blank", this attribute shall also be provided. A short, human-readable summary of the problem type. It SHOULD NOT change from occurrence to occurrence of the problem, except for purposes of localization (e.g., using proactive content negotiation; see [RFC7231], Section 3.4).	string
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