

# SOL005 - VNF Package Management Interface

## Overview

SOL005 - VNF Package Management Interface IMPORTANT: Please note that this file might be not aligned to the current version of the ETSI Group Specification it refers to and has not been approved by the ETSI NFV ISG. In case of discrepancies the published ETSI Group Specification takes precedence. Please report bugs to <https://forge.etsi.org/rep/nfv/SOL005/issues>

## Version information

*Version* : 2.1.0-impl:etsi.org:ETSI\_NFV\_OpenAPI:1

## Contact information

*Contact* : NFV-SOL WG

## 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* : /vnfpkgm/v2

*Schemes* : HTTPS

## Consumes

- `application/json`

## Produces

- `application/json`

## External Docs

*Description* : ETSI GS NFV-SOL 005 V2.8.1

*URL* : [https://www.etsi.org/deliver/etsi\\_gs/NFV-SOL/001\\_099/005/02.08.01\\_60/gs\\_NFV-SOL005v020801p.pdf](https://www.etsi.org/deliver/etsi_gs/NFV-SOL/001_099/005/02.08.01_60/gs_NFV-SOL005v020801p.pdf)

# Paths

## POST /api\_versions

### Description

This method is not supported. When this method is requested on this resource, the API producer shall return a "405 Method Not Allowed" response

### Parameters

| Type   | Name                              | Description  | Schema |
|--------|-----------------------------------|--|--------|
| Header | <b>Version</b><br><i>optional</i> | Version of the API requested to use when responding to this request. | string |

### Responses

| HTTP Code | Description   | Schema                       |
|-----------|---|------------------------------|
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 405</a> |

### Response 405

| Name                               | Description   | Schema       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><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       |
|----------------------------------|---|--------------|
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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 /api\_versions

### Description

The GET method reads API version information. This method shall follow the provisions specified in table 4.6.3.3.2-1 for request and response data structures, and response codes. URI query parameters are not supported.

### Parameters

| Type          | Name                              | Description  | Schema |
|---------------|-----------------------------------|--|--------|
| <b>Header</b> | <b>Version</b><br><i>optional</i> | Version of the API requested to use when responding to this request. | string |

### Responses

| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 200       | <p>API version information was read successfully. The response body shall contain 4.4 API version information, as defined in clause 4.4.1.13.</p> <p><b>Headers :</b><br/> <b>Content-Type</b> (string) : The MIME type of the body of the response.<br/> <b>Version</b> (string) : The used API version.</p>   | Response 200 |
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b><br/> <b>Content-Type</b> (string) : The MIME type of the body of the response.<br/> <b>WWW-Authenticate</b> (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.<br/> <b>Version</b> (string) : Version of the API used in the response.</p> | Response 400 |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 413       | <p>413 PAYLOAD TOO LARGE If the payload body of a request is larger than the amount of data the API producer is willing or able to process, it shall respond with this response code, following the provisions in IETF RFC 7231 for the use of the "Retry-After" HTTP header and for closing the connection. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 413 |
| 414       | <p>414 URI TOO LONG If the request URI of a request is longer than the API producer is willing or able to process, it shall respond with this response code. This condition can e.g. be caused by passing long queries in the request URI of a GET request. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 414 |
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 416 |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 422       | <p>422 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. This error response code is only applicable for methods that have a request body.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 422</a></p> |
| 429       | <p>429 TOO MANY REQUESTS If the API consumer has sent too many requests in a defined period of time and the API producer is able to detect that condition ("rate limiting"), the API producer shall respond with this response code, following the provisions in IETF RFC 6585 [17] for the use of the "Retry-After" HTTP header. The "ProblemDetails" structure shall be provided and shall include in the "detail" attribute more information about the source of the problem. The period of time and allowed number of requests are configured within the API producer by means outside the scope of the present document.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 429</a></p> |



| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 500 |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | Response 503 |
| 504       | <p>504 GATEWAY TIMEOUT If the API producer encounters a timeout while waiting for a response from an upstream server (i.e. a server that the API producer communicates with when fulfilling a request), it should respond with this response code.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 504 |

## Response 200

| Name                                  | Description   | Schema                                   |
|---------------------------------------|---|--|
| <b>apiVersions</b><br><i>required</i> | Version(s) supported for the API signalled by the uriPrefix attribute.                              | < <a href="#">apiVersions</a> ><br>array |
| <b>uriPrefix</b><br><i>required</i>   | Specifies the URI prefix for the API, in the following form {apiRoot}/{apiName}/{apiMajorVersion}/. | string                                   |

### apiVersions

| Name                                   | Description  | Schema  |
|--|--|---------|
| <b>isDeprecated</b><br><i>optional</i> | The Boolean is a data type having two values (TRUE and FALSE).   | boolean |
| <b>version</b><br><i>required</i>      | Identifies a supported version. The value of the version attribute shall be a version identifier as specified in clause 4.6.1. | string  |

### Response 400

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

| <b>Name</b>                    | <b>Description</b>   | <b>Schema</b> |
|--------------------------------|--|---------------|
| <b>type</b><br><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

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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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 413

| Name                               | Description   | Schema       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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 414

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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 429

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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 504

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

## PUT /api\_versions

### Description

This method is not supported. When this method is requested on this resource, the API producer shall return a "405 Method Not Allowed" response

### Parameters

| Type          | Name                              | Description  | Schema |
|---------------|-----------------------------------|--|--------|
| <b>Header</b> | <b>Version</b><br><i>optional</i> | Version of the API requested to use when responding to this request. | string |

### Responses

| HTTP Code  | Description   | Schema                       |
|------------|---|------------------------------|
| <b>405</b> | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 405</a> |

### Response 405

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

| Name                               | Description   | Schema       |
|------------------------------------|---|--------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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 /api\_versions

### Description

This method is not supported. When this method is requested on this resource, the API producer shall return a "405 Method Not Allowed" response

### Parameters

| Type          | Name                              | Description  | Schema |
|---------------|-----------------------------------|--|--------|
| <b>Header</b> | <b>Version</b><br><i>optional</i> | Version of the API requested to use when responding to this request. | string |

### Responses

| HTTP Code | Description   | Schema                       |
|-----------|---|------------------------------|
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 405</a> |

### Response 405

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

## Description

This method is not supported. When this method is requested on this resource, the API producer shall return a "405 Method Not Allowed" response

## Parameters

| Type   | Name                              | Description  | Schema |
|--------|-----------------------------------|--|--------|
| Header | <b>Version</b><br><i>optional</i> | Version of the API requested to use when responding to this request. | string |

## Responses

| HTTP Code | Description   | Schema                       |
|-----------|---|------------------------------|
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 405</a> |

## Response 405

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

### Description

The POST method creates a new subscription. This method shall follow the provisions specified in the Tables 9.4.8.3.1-1 and 9.4.8.3.1-2 for URI query parameters, request and response data structures, and response codes. As the result of successfully executing this method, a new "Individual subscription" resource as defined in clause 9.4.9 shall have been created. This method shall not trigger any notification. Creation of two "Individual subscription" resources with the same callback URI and the same filter can result in performance degradation and will provide duplicates of notifications to the OSS/BSS, and might make sense only in very rare use cases. Consequently, the NFVO may either allow creating a new "Individual subscription" resource if another "Individual subscription" resource with the same filter and callback URI already exists (in which case it shall return the "201 Created" response code), or may decide to not create a duplicate "Individual subscription" resource (in which case it shall return a "303 See Other" response code referencing the existing "Individual subscription" resource with the same filter and callback URI).

### Parameters

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



| Type   | Name                                   | Description   | Schema               |
|--------|--|---|----------------------|
| Header | <b>Content-Type</b><br><i>required</i> | The MIME type of the body of the request.<br>Reference: IETF RFC 7231 | string               |
| Header | <b>Version</b><br><i>required</i>      | Version of the API requested to use when responding to this request.  | string               |
| Body   | <b>body</b><br><i>required</i>         | Details of the subscription to be created.                            | <a href="#">body</a> |

### body

| Name                                     | Description  | Schema                         |
|--|--|--------------------------------|
| <b>authentication</b><br><i>optional</i> |  | <a href="#">authentication</a> |
| <b>callbackUri</b><br><i>required</i>    | String formatted according to IETF RFC 3986.   | string (uri)                   |
| <b>filter</b><br><i>optional</i>         | This type represents a subscription filter related to notifications related to VNF package management. 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). | <a href="#">filter</a>         |

### authentication

| Name  | Description  | Schema  |
|---|--|---|
| <b>authType</b><br><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 |
| <b>paramsBasic</b><br><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.  | <a href="#">paramsBasic</a>                                 |
| <b>paramsOAuth2ClientCredentials</b><br><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.  | <a href="#">paramsOAuth2ClientCredentials</a>               |

#### paramsBasic

| Name                               | Description  | Schema |
|------------------------------------|--|--------|
| <b>password</b><br><i>optional</i> | Password to be used in HTTP Basic authentication. Shall be present if it has not been provisioned out of band. | string |
| <b>userName</b><br><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       |
|--|---|--------------|
| <b>clientId</b><br><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       |
| <b>clientPassword</b><br><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       |
| <b>tokenEndpoint</b><br><i>optional</i>  | String formatted according to IETF RFC 3986.  | string (uri) |

#### filter

| Name   | Description   | Schema  |
|--|---|---|
| <b>notificationTypes</b><br><i>optional</i>        | Match particular notification types. Permitted values: - VnfPackageOnboardingNotification<br>- VnfPackageChangeNotification | enum<br>(VnfPackageOnboardingNotification,<br>VnfPackageChangeNotification) |
| <b>vnfProductsFromProviders</b><br><i>optional</i> | If present, match VNF packages that contain VNF products from certain providers.  | <<br><a href="#">vnfProductsFromProviders</a> > array                       |

#### vnfProductsFromProviders

| Name                                       | Description   | Schema                                |
|--|---|---------------------------------------|
| <b>operationalState</b><br><i>optional</i> | Match VNF packages with a package identifier listed in the attribute. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise. | < enum (ENABLED, DISABLED) > array    |
| <b>usageState</b><br><i>optional</i>       | Match particular usage state of the on-boarded VNF package. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise.           | < enum (IN_USE, NOT_IN_USE) > array   |
| <b>vnfPkgId</b><br><i>optional</i>         | Match VNF packages with a package identifier listed in the attribute. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise. | < string > array                      |
| <b>vnfProducts</b><br><i>optional</i>      | If present, match VNF packages that contain VNF products with certain product names, from one particular provider.  | < <a href="#">vnfProducts</a> > array |
| <b>vnfProvider</b><br><i>required</i>      | Name of the VNFprovider to match.   | string                                |
| <b>vnfdId</b><br><i>optional</i>           | Match VNF packages with a VNFD identifier listed in the attribute.  | < string > array                      |
| <b>vnfmInfo</b><br><i>optional</i>         | Match strings that specify VNFMs compatible with the VNF. See Table 9.5.2.5-1.  | < string > array                      |

### vnfProducts

| Name                                     | Description  | Schema                             |
|--|--|------------------------------------|
| <b>versions</b><br><i>optional</i>       | If present, match VNF packages that contain VNF products with certain versions and a certain product name, from one particular provider. | < <a href="#">versions</a> > array |
| <b>vnfProductName</b><br><i>required</i> | Name of the VNF product to match.  | string                             |

### versions

| Name   | Description   | Schema           |
|--|---|------------------|
| <b>vnfSoftwareVersion</b><br><i>required</i> | A Version. Representation: string of variable length.   | string           |
| <b>vnfdVersions</b><br><i>optional</i>       | If present, match VNF packages that contain 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                       |
|------------|--|------------------------------|
| <b>201</b> | <p>201 Created Shall be returned when the subscription has been created successfully. The response body shall contain a representation of the created "Individual subscription" resource. The HTTP response shall include a "Location" HTTP header that points to the created resource.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <a href="#">Response 201</a> |
| <b>303</b> | <p>303 SEE OTHER Shall be returned when a subscription with the same callback URI and the same filter already exists and the policy of the NFVO is to not create redundant subscriptions. The HTTP response shall include a "Location" HTTP header that contains the resource URI of the existing "Individual subscription" resource. The response body shall be empty.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | No Content                   |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 404 |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 405 |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 406 |



| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 416</a></p> |
| 422       | <p>422 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. This error response code is only applicable for methods that have a request body.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 422</a></p> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 500</a></p> |

| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 503 |

### Response 201

| Name                                  | Description  | Schema                 |
|---------------------------------------|--|------------------------|
| <b>_links</b><br><i>required</i>      | Links to resources related to this resource.   | <a href="#">_links</a> |
| <b>callbackUri</b><br><i>required</i> | String formatted according to IETF RFC 3986.   | string (uri)           |
| <b>filter</b><br><i>optional</i>      | This type represents a subscription filter related to notifications related to VNF package management. 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). | <a href="#">filter</a> |
| <b>id</b><br><i>required</i>          | String formatted according to IETF RFC 3986.   | string (uri)           |

### [\\_links](#)

| Name                           | Description                                | Schema               |
|--------------------------------|--|----------------------|
| <b>self</b><br><i>required</i> | This type represents a link to a resource. | <a href="#">self</a> |

### **self**

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

### filter

| Name   | Description   | Schema  |
|--|---|---|
| <b>notificationTypes</b><br><i>optional</i>        | Match particular notification types. Permitted values: - VnfPackageOnboardingNotification<br>- VnfPackageChangeNotification | enum<br>(VnfPackageOnboardingNotification,<br>VnfPackageChangeNotification) |
| <b>vnfProductsFromProviders</b><br><i>optional</i> | If present, match VNF packages that contain VNF products from certain providers.  | < <a href="#">vnfProductsFromProviders</a> > array                          |

### vnfProductsFromProviders

| Name                                       | Description   | Schema                                |
|--|---|---------------------------------------|
| <b>operationalState</b><br><i>optional</i> | Match VNF packages with a package identifier listed in the attribute. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise. | < enum (ENABLED, DISABLED) > array    |
| <b>usageState</b><br><i>optional</i>       | Match particular usage state of the on-boarded VNF package. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise.           | < enum (IN_USE, NOT_IN_USE) > array   |
| <b>vnfPkgId</b><br><i>optional</i>         | Match VNF packages with a package identifier listed in the attribute. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise. | < string > array                      |
| <b>vnfProducts</b><br><i>optional</i>      | If present, match VNF packages that contain VNF products with certain product names, from one particular provider.  | < <a href="#">vnfProducts</a> > array |

| Name                                  | Description  | Schema           |
|---------------------------------------|--|------------------|
| <b>vnfProvider</b><br><i>required</i> | Name of the VNFprovider to match.  | string           |
| <b>vnfdId</b><br><i>optional</i>      | Match VNF packages with a VNFD identifier listed in the attribute.             | < string > array |
| <b>vnfmInfo</b><br><i>optional</i>    | Match strings that specify VNFMs compatible with the VNF. See Table 9.5.2.5-1. | < string > array |

### vnfProducts

| Name                                     | Description  | Schema                             |
|--|--|------------------------------------|
| <b>versions</b><br><i>optional</i>       | If present, match VNF packages that contain VNF products with certain versions and a certain product name, from one particular provider. | < <a href="#">versions</a> > array |
| <b>vnfProductName</b><br><i>required</i> | Name of the VNF product to match.  | string                             |

### versions

| Name   | Description   | Schema           |
|--|---|------------------|
| <b>vnfSoftwareVersion</b><br><i>required</i> | A Version. Representation: string of variable length.   | string           |
| <b>vnfdVersions</b><br><i>optional</i>       | If present, match VNF packages that contain 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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><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       |
|----------------------------------|---|--------------|
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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 |
|----------------------------------|--|--------|
| <b>detail</b><br><i>required</i> | A human-readable explanation specific to this occurrence of the problem. | string |

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

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. This method shall follow the provisions specified in the Tables 9.4.8.3.2-1 and 9.4.8.3.2-2 for URI query parameters, request and response data structures, and response codes.

### Parameters

| Type          | Name   | Description  | Schema |
|---------------|--|--|--------|
| <b>Header</b> | <b>Accept</b><br><i>required</i>                 | Content-Types that are acceptable for the response. Reference: IETF RFC 7231   | string |
| <b>Header</b> | <b>Authorization</b><br><i>optional</i>          | The authorization token for the request. Reference: IETF RFC 7235.   | string |
| <b>Header</b> | <b>Version</b><br><i>required</i>                | Version of the API requested to use when responding to this request.   | string |
| <b>Query</b>  | <b>filter</b><br><i>optional</i>                 | Attribute-based filter expression according to clause 5.2 of ETSI GS NFV SOL 013. The NFVO shall support receiving this parameter as part of the URI query string. The OSS/BSS may supply this parameter. All attribute names that appear in the PkgmSubscription and in data types referenced from it shall be supported by the NFVO in the filter expression | string |
| <b>Query</b>  | <b>nextpage_opaque_marker</b><br><i>optional</i> | Marker to obtain the next page of a paged response. Shall be supported by the NFVO if the NFVO supports alternative 2 (paging) according to clause 5.4.2.1 of ETSI GS NFV-SOL 013 for this resource.   | string |

## Responses

| HTTP Code | Description   | Schema                                    |
|-----------|---|---|
| 200       | <p>200 OK Shall be returned when the list of subscriptions has been queried successfully. The response body shall contain in an array the representations of all active subscriptions of the functional block that invokes the method, i.e. zero or more representations of VNF package management subscriptions, as defined in clause 9.5.2.7. If the "filter" URI parameter was supplied in the request, the data in the response body shall have been transformed according to the rules specified in clause 5.2.2 of ETSI GS NFV-SOL 013. If the NFVO supports alternative 2 (paging) according to clause 5.4.2.1 of ETSI GS NFV SOL 013 for this resource, inclusion of the Link HTTP header in this response shall follow the provisions in clause 5.4.2.3 of ETSI GS NFV SOL 013.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | < <a href="#">Response 200</a> ><br>array |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 404 |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 405 |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 406 |



| HTTP Code | Description  | Schema                       |
|-----------|--|------------------------------|
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <a href="#">Response 416</a> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 500</a> |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | <a href="#">Response 503</a> |

## Response 200

| Name                                   | Description                                  | Schema                 |
|--|--|------------------------|
| <b><u>links</u></b><br><i>required</i> | Links to resources related to this resource. | <a href="#">_links</a> |

| Name                                  | Description  | Schema                 |
|---------------------------------------|--|------------------------|
| <b>callbackUri</b><br><i>required</i> | String formatted according to IETF RFC 3986.   | string (uri)           |
| <b>filter</b><br><i>optional</i>      | This type represents a subscription filter related to notifications related to VNF package management. 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). | <a href="#">filter</a> |
| <b>id</b><br><i>required</i>          | String formatted according to IETF RFC 3986.   | string (uri)           |

### links

| Name                           | Description                                | Schema               |
|--------------------------------|--|----------------------|
| <b>self</b><br><i>required</i> | This type represents a link to a resource. | <a href="#">self</a> |

### **self**

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

### **filter**

| Name  | Description   | Schema  |
|---|---|---|
| <b>notificationTypes</b><br><i>optional</i> | Match particular notification types. Permitted values: - VnfPackageOnboardingNotification<br>- VnfPackageChangeNotification | enum<br>(VnfPackageOnboardingNotification,<br>VnfPackageChangeNotification) |

| Name   | Description  | Schema   |
|--|--|--|
| <b>vnfProductsFromProviders</b><br><i>optional</i> | If present, match VNF packages that contain VNF products from certain providers. | < <a href="#">vnfProductsFromProviders</a> > array |

### vnfProductsFromProviders

| Name                                       | Description   | Schema                                |
|--|---|---------------------------------------|
| <b>operationalState</b><br><i>optional</i> | Match VNF packages with a package identifier listed in the attribute. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise. | < enum (ENABLED, DISABLED) > array    |
| <b>usageState</b><br><i>optional</i>       | Match particular usage state of the on-boarded VNF package. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise.           | < enum (IN_USE, NOT_IN_USE) > array   |
| <b>vnfPkgId</b><br><i>optional</i>         | Match VNF packages with a package identifier listed in the attribute. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise. | < string > array                      |
| <b>vnfProducts</b><br><i>optional</i>      | If present, match VNF packages that contain VNF products with certain product names, from one particular provider.  | < <a href="#">vnfProducts</a> > array |
| <b>vnfProvider</b><br><i>required</i>      | Name of the VNFprovider to match.   | string                                |
| <b>vnfdId</b><br><i>optional</i>           | Match VNF packages with a VNFD identifier listed in the attribute.  | < string > array                      |
| <b>vnfmInfo</b><br><i>optional</i>         | Match strings that specify VNFMs compatible with the VNF. See Table 9.5.2.5-1.  | < string > array                      |

### vnfProducts

| Name                               | Description  | Schema                             |
|------------------------------------|--|------------------------------------|
| <b>versions</b><br><i>optional</i> | If present, match VNF packages that contain VNF products with certain versions and a certain product name, from one particular provider. | < <a href="#">versions</a> > array |

| Name                                     | Description                       | Schema |
|--|-----------------------------------|--------|
| <b>vnfProductName</b><br><i>required</i> | Name of the VNF product to match. | string |

#### versions

| Name   | Description   | Schema           |
|--|---|------------------|
| <b>vnfSoftwareVersion</b><br><i>required</i> | A Version. Representation: string of variable length.   | string           |
| <b>vnfdVersions</b><br><i>optional</i>       | If present, match VNF packages that contain 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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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 |
|----------------------------------|--|--------|
| <b>detail</b><br><i>required</i> | A human-readable explanation specific to this occurrence of the problem. | string |

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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



| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
|---------------------------------|---|--------------|
| <b>title</b><br><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       |
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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 reads an individual subscription.

### Parameters

| Type          | Name                                     | Description  | Schema |
|---------------|--|--|--------|
| <b>Header</b> | <b>Accept</b><br><i>required</i>         | Content-Types that are acceptable for the response. Reference: IETF RFC 7231   | string |
| <b>Header</b> | <b>Authorization</b><br><i>optional</i>  | The authorization token for the request. Reference: IETF RFC 7235.   | string |
| <b>Header</b> | <b>Version</b><br><i>required</i>        | Version of the API requested to use when responding to this request.   | string |
| <b>Path</b>   | <b>subscriptionId</b><br><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 "Individual 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>200 OK Shall be returned when information about an individual subscription has been read successfully. The response body shall contain a representation of the "Individual subscription" resource.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 200 |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 404 |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 405 |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 406 |

| HTTP Code | Description  | Schema                       |
|-----------|--|------------------------------|
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <a href="#">Response 416</a> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 500</a> |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | <a href="#">Response 503</a> |

## Response 200

| Name                          | Description                                  | Schema                 |
|-------------------------------|--|------------------------|
| <b><i>_links required</i></b> | Links to resources related to this resource. | <a href="#">_links</a> |



| Name                                  | Description  | Schema                 |
|---------------------------------------|--|------------------------|
| <b>callbackUri</b><br><i>required</i> | String formatted according to IETF RFC 3986.   | string (uri)           |
| <b>filter</b><br><i>optional</i>      | This type represents a subscription filter related to notifications related to VNF package management. 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). | <a href="#">filter</a> |
| <b>id</b><br><i>required</i>          | String formatted according to IETF RFC 3986.   | string (uri)           |

### links

| Name                           | Description                                | Schema               |
|--------------------------------|--|----------------------|
| <b>self</b><br><i>required</i> | This type represents a link to a resource. | <a href="#">self</a> |

### **self**

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

### **filter**

| Name  | Description   | Schema  |
|---|---|---|
| <b>notificationTypes</b><br><i>optional</i> | Match particular notification types. Permitted values: - VnfPackageOnboardingNotification<br>- VnfPackageChangeNotification | enum<br>(VnfPackageOnboardingNotification,<br>VnfPackageChangeNotification) |

| Name   | Description  | Schema   |
|--|--|--|
| <b>vnfProductsFromProviders</b><br><i>optional</i> | If present, match VNF packages that contain VNF products from certain providers. | < <a href="#">vnfProductsFromProviders</a> > array |

### vnfProductsFromProviders

| Name                                       | Description   | Schema                                |
|--|---|---------------------------------------|
| <b>operationalState</b><br><i>optional</i> | Match VNF packages with a package identifier listed in the attribute. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise. | < enum (ENABLED, DISABLED) > array    |
| <b>usageState</b><br><i>optional</i>       | Match particular usage state of the on-boarded VNF package. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise.           | < enum (IN_USE, NOT_IN_USE) > array   |
| <b>vnfPkgId</b><br><i>optional</i>         | Match VNF packages with a package identifier listed in the attribute. May be present if the "notificationTypes" attribute contains the value "VnfPackageChangeNotification", and shall be absent otherwise. | < string > array                      |
| <b>vnfProducts</b><br><i>optional</i>      | If present, match VNF packages that contain VNF products with certain product names, from one particular provider.  | < <a href="#">vnfProducts</a> > array |
| <b>vnfProvider</b><br><i>required</i>      | Name of the VNFprovider to match.   | string                                |
| <b>vnfdId</b><br><i>optional</i>           | Match VNF packages with a VNFD identifier listed in the attribute.  | < string > array                      |
| <b>vnfmInfo</b><br><i>optional</i>         | Match strings that specify VNFMs compatible with the VNF. See Table 9.5.2.5-1.  | < string > array                      |

### vnfProducts

| Name                               | Description  | Schema                             |
|------------------------------------|--|------------------------------------|
| <b>versions</b><br><i>optional</i> | If present, match VNF packages that contain VNF products with certain versions and a certain product name, from one particular provider. | < <a href="#">versions</a> > array |

| Name                                     | Description                       | Schema |
|--|-----------------------------------|--------|
| <b>vnfProductName</b><br><i>required</i> | Name of the VNF product to match. | string |

#### versions

| Name   | Description   | Schema           |
|--|---|------------------|
| <b>vnfSoftwareVersion</b><br><i>required</i> | A Version. Representation: string of variable length.   | string           |
| <b>vnfdVersions</b><br><i>optional</i>       | If present, match VNF packages that contain 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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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 |
|----------------------------------|--|--------|
| <b>detail</b><br><i>required</i> | A human-readable explanation specific to this occurrence of the problem. | string |

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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



| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

The DELETE method terminates an individual subscription. This method shall follow the provisions specified in the Tables 9.4.9.3.5-1 and 9.4.9.3.5-2 for URI query parameters, request and response data structures, and response codes. As the result of successfully executing this method, the "Individual subscription" resource shall not exist any longer. This means that no notifications for that subscription shall be sent to the formerly-subscribed API consumer. NOTE: Due to race conditions, some notifications might still be received by the formerly-subscribed API consumer for a certain time period after the deletion.

### Parameters

| Type          | Name                                     | Description  | Schema |
|---------------|--|--|--------|
| <b>Header</b> | <b>Authorization</b><br><i>optional</i>  | The authorization token for the request. Reference: IETF RFC 7235.   | string |
| <b>Header</b> | <b>Version</b><br><i>required</i>        | Version of the API requested to use when responding to this request.   | string |
| <b>Path</b>   | <b>subscriptionId</b><br><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 "Individual 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 Shall be returned when information about an individual subscription has been read successfully. The response body shall contain a representation of the "Individual subscription" resource.</p> <p><b>Headers :</b></p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | No Content |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 404 |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 405 |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 406 |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 416 |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 500 |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | Response 503 |

### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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



| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| Name                               | Description   | Schema       |
|------------------------------------|---|--------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages

### Description

The POST method creates a new individual VNF package resource.

### Parameters

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

| Type   | Name                              | Description  | Schema               |
|--------|-----------------------------------|--|----------------------|
| Header | <b>Version</b><br><i>required</i> | Version of the API requested to use when responding to this request.             | string               |
| Body   | <b>body</b><br><i>required</i>    | IndividualVNF package resource creation parameters, as defined in clause 9.5.2.2 | <a href="#">body</a> |

### body

| Name                                      | Description   | Schema |
|---|---|--------|
| <b>userDefinedData</b><br><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 |

### Responses

| HTTP Code | Description  | Schema                       |
|-----------|--|------------------------------|
| 201       | <p>201 Created Shall be returned when an "Individual VNF package" resource has been created successfully. The response body shall contain a representation of the new individual VNF package resource, as defined in clause 9.5.2.5. The HTTP response shall include a "Location" HTTP header that contains the resource URI of the individual VNF package resource.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response. This header field shall be present if the response has a non-empty message body.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 201</a> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |



| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 409</a></p> |
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 416</a></p> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 500</a></p> |

| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 503 |
| 504       | <p>504 GATEWAY TIMEOUT If the API producer encounters a timeout while waiting for a response from an upstream server (i.e. a server that the API producer communicates with when fulfilling a request), it should respond with this response code.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | Response 504 |

## Response 201

| Name  | Description   | Schema  |
|---|---|---|
| <b>_links</b><br><i>required</i>              | Links to resources related to this resource.  | <a href="#">_links</a>                        |
| <b>additionalArtifacts</b><br><i>optional</i> | Information about VNF package artifacts contained in the VNF package that are not software images. This attribute shall not be present before the VNF package content is on-boarded. Otherwise, this attribute shall be present if the VNF package contains additional artifacts. | < <a href="#">additionalArtifacts</a> > array |
| <b>checksum</b><br><i>optional</i>            | This type represents the checksum of a VNF package or an artifact file.   | <a href="#">checksum</a>                      |

| Name  | Description  | Schema  |
|---|--|---|
| <b>compatibleSpecificationVersions</b><br><i>optional</i> | A Version. Representation: string of variable length.  | string  |
| <b>id</b><br><i>required</i>                              | An identifier with the intention of being globally unique.   | string  |
| <b>onboardingFailureDetails</b><br><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]. | <a href="#">onboardingFailureDetails</a>                |
| <b>onboardingState</b><br><i>required</i>                 | The enumeration PackageOnboardingStateType shall comply with the provisions defined in Table 9.5.4.3-1. Permitted values: - CREATED: The VNF package resource has been created. - UPLOADING: The associated VNF package content is being uploaded. - PROCESSING: The associated VNF package content is being processed, e.g. validation. - ONBOARDED: The associated VNF package content is successfully on-boarded. - ERROR: There was an error during upload of the VNF package content or external artifacts, or during VNF package processing.   | enum (CREATED, UPLOADING, PROCESSING, ONBOARDED, ERROR) |
| <b>operationalState</b><br><i>required</i>                | "The enumeration PackageOperationalStateType shall comply with the provisions defined in Table 9.5.4.4-1." Acceptable values are: - ENABLED - The VNF package is enabled, i.e. it can be used for instantiation of new VNF instances. - DISABLED - The VNF package is disabled, i.e. it cannot be used for further VNF instantiation requests (unless and until the VNF package is re-enabled).  | enum (ENABLED, DISABLED)                                |

| Name  | Description  | Schema                                      |
|---|--|---|
| <b>packageSecurityOption</b><br><i>required</i> | Signals the security option used by the package as defined in clause 5.1 of ETSI GS NFV-SOL 004 [5]. Valid values: OPTION_1, OPTION_2  | enum (OPTION_1, OPTION_2)                   |
| <b>signingCertificate</b><br><i>optional</i>    | The singleton signing certificate if it is included as a file in the VNF package.  | string                                      |
| <b>softwareImages</b><br><i>optional</i>        | Information about VNF package artifacts that are software images. This attribute shall not be present before the VNF package content is on-boarded. Otherwise, this attribute shall be present unless it has been requested to be excluded per attribute selector.             | < <a href="#">softwareImages</a> ><br>array |
| <b>usageState</b><br><i>required</i>            | "The enumeration PackageUsageStateType shall comply with the provisions. Acceptable values are: - IN_USE: "Individual VNF instance" resources created from this VNF package exist. - NOT_IN_USE: - No "individual VNF instance" resource created from this VNF package exists. | enum (IN_USE, NOT_IN_USE)                   |
| <b>userDefinedData</b><br><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                                      |
| <b>vnfProductName</b><br><i>optional</i>        | Name to identify the VNF product. Invariant for the VNF product lifetime. This information is copied from the VNFD. It shall be present after the VNF package content has been on-boarded and absent otherwise.  | string                                      |
| <b>vnfProvider</b><br><i>optional</i>           | Provider of the VNF package and the VNFD. This information is copied from the VNFD. It shall be present after the VNF package content has been on-boarded and absent otherwise.  | string                                      |
| <b>vnfSoftwareVersion</b><br><i>optional</i>    | A Version. Representation: string of variable length.  | string                                      |
| <b>vnfdId</b><br><i>optional</i>                | An identifier with the intention of being globally unique.   | string                                      |
| <b>vnfdVersion</b><br><i>optional</i>           | A Version. Representation: string of variable length.  | string                                      |

| Name                               | Description   | Schema           |
|------------------------------------|---|------------------|
| <b>vnfmInfo</b><br><i>required</i> | Specifies VNFM compatible with the VNF. This information is copied from the VNFD. See note 4. | < string > array |

### links

| Name                                     | Description                                | Schema                         |
|--|--|--------------------------------|
| <b>packageContent</b><br><i>required</i> | This type represents a link to a resource. | <a href="#">packageContent</a> |
| <b>self</b><br><i>required</i>           | This type represents a link to a resource. | <a href="#">self</a>           |
| <b>vnfd</b><br><i>required</i>           | This type represents a link to a resource. | <a href="#">vnfd</a>           |

### packageContent

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

### self

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

### vnfd

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

### additionalArtifacts

| Name   | Description   | Schema                           |
|--|---|----------------------------------|
| <b>artifactClassification</b><br><i>optional</i> | Marks specific types of artifacts as defined in the VNF package. If none of the specific classes listed below applies, the attribute shall not be present. Valid values: - HISTORY: a history artifact as per clause 4.3.3 in ETSI GS NFV-SOL 004 [5] - TESTING: a testing artifact as per clause 4.3.4 in ETSI GS NFV-SOL 004 [5] - LICENSE: a license artifact as per clause 4.3.5 in ETSI GS NFV-SOL 004 [5] | enum (HISTORY, TESTING, LICENSE) |
| <b>artifactPath</b><br><i>optional</i>           | A string as defined in IETF RFC 8259.   | string                           |
| <b>artifactURI</b><br><i>optional</i>            | String formatted according to IETF RFC 3986.  | string (uri)                     |
| <b>checksum</b><br><i>required</i>               | This type represents the checksum of a VNF package or an artifact file.   | <a href="#">checksum</a>         |
| <b>isEncrypted</b><br><i>required</i>            | Reflects whether the artifact is encrypted (true) or not (false).   | boolean                          |
| <b>metadata</b><br><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                           |
| <b>nonManoArtifactSetId</b><br><i>optional</i>   | Non-MANO artifact set identifier of the non-MANO artifact set to which the artifact belongs, as defined in clause 4.3.7 of ETSI GS NFV-SOL 004 [5]. Shall be provided if the artifact is a non-MANO artifact, and shall be omitted otherwise.   | string                           |

### checksum



| Name                                | Description  | Schema |
|-------------------------------------|--|--------|
| <b>algorithm</b><br><i>required</i> | Name of the algorithm used to generate the checksum, as defined in ETSI GS NFV-SOL 004 [5]. For example, SHA-256, SHA-512. | string |
| <b>hash</b><br><i>required</i>      | The hexadecimal value of the checksum.   | string |

#### checksum

| Name                                | Description  | Schema |
|-------------------------------------|--|--------|
| <b>algorithm</b><br><i>required</i> | Name of the algorithm used to generate the checksum, as defined in ETSI GS NFV-SOL 004 [5]. For example, SHA-256, SHA-512. | string |
| <b>hash</b><br><i>required</i>      | The hexadecimal value of the checksum.   | string |

#### onboardingFailureDetails

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

## softwareImages

| Name                                      | Description  | Schema  |
|---|--|---|
| <b>checksum</b><br><i>required</i>        | This type represents the checksum of a VNF package or an artifact file.  | <a href="#">checksum</a>                                    |
| <b>containerFormat</b><br><i>required</i> | Container format indicates whether the software image is in a file format that also contains meta-data about the actual software. Permitted values: - AKI: a kernel image format - AMI: a machine image format - ARI: a ram disk image format - BARE: the image does not have a container or meta-data envelope - DOCKER: docker container format - OVA: OVF package in a tar file - OVF: OVF container format   | enum (AKI, AMI, ARI, BARE, DOCKER, OVA, OVF)                |
| <b>diskFormat</b><br><i>required</i>      | Disk format of a software image is the format of the underlying disk image. Permitted values: - AKI: a kernel image format - AMI: a machine image format - ARI: a ramdisk image format - ISO: an archive format for the data contents of an optical disc, such as CD-ROM - QCOW2: a common disk image format, which can expand dynamically and supports copy on write - RAW: an unstructured disk image format - VDI: a common disk image format - VHD: a common disk image format - VHDX: enhanced version of VHD format - VMDK: a common disk image format | enum (AKI, AMI, ARI, ISO, QCOW2, RAW, VDI, VHD, VHDX, VMDK) |
| <b>id</b><br><i>required</i>              | Identifier of the VNF Virtual Link Descriptor (VLD) in the VNFD.   | string  |

| Name                                   | Description   | Schema       |
|--|---|--------------|
| <b>imagePath</b><br><i>required</i>    | Path in the VNF package, which identifies the image artifact and also allows to access a copy of the image artifact. For a software image contained as a file in the VNF package, this attribute shall be present, and the value of this attribute shall start with the name of the first segment in the path in the package, i.e., it shall not be prefixed by path separator characters such as "." and "/". EXAMPLE: foo/bar/m%40ster.vhd For an external software image represented as a URI in the VNF descriptor, this attribute shall be present if the image artifact has been downloaded by the NFVO and shall be absent otherwise. If present, it shall contain the artifactPath under which the image artifact can be obtained using the "Individual artifact in a VNF package" resource defined in clause 9.4.7. It is the responsibility of the NFVO to synthesize this path in a manner that avoids any collision of the synthesized artifact path with the paths and names of image artifacts included in the package. | string       |
| <b>imageUri</b><br><i>optional</i>     | String formatted according to IETF RFC 3986.  | string (uri) |
| <b>isEncrypted</b><br><i>required</i>  | Reflects whether the image is encrypted (true) or not (false).  | boolean      |
| <b>minDisk</b><br><i>required</i>      | The minimal disk for this software image in bytes.<br><b>Minimum value : 0</b>  | integer      |
| <b>minRam</b><br><i>required</i>       | The minimal RAM for this software image in bytes.<br><b>Minimum value : 0</b>   | integer      |
| <b>name</b><br><i>required</i>         | Name of the software image.   | string       |
| <b>provider</b><br><i>required</i>     | Provider of the software image.   | string       |
| <b>size</b><br><i>required</i>         | Size of this software image in bytes.<br><b>Minimum value : 0</b>   | integer      |
| <b>userMetadata</b><br><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 |
|-----------------------------------|---|--------|
| <b>version</b><br><i>required</i> | A Version. Representation: string of variable length. | string |

#### checksum

| Name                                | Description  | Schema |
|-------------------------------------|--|--------|
| <b>algorithm</b><br><i>required</i> | Name of the algorithm used to generate the checksum, as defined in ETSI GS NFV-SOL 004 [5]. For example, SHA-256, SHA-512. | string |
| <b>hash</b><br><i>required</i>      | The hexadecimal value of the checksum.   | string |

#### Response 400

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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 504

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

### Description

The GET method queries the information of the VNF packages matching the filter. This method shall follow the provisions specified in the Tables 9.4.2.3.2-1 and 9.4.2.3.2-2 for URI query parameters, request and response data structures, and response codes.

### Parameters

| Type          | Name                                    | Description   | Schema |
|---------------|---|---|--------|
| <b>Header</b> | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response. Reference: IETF RFC 7231  | string |
| <b>Header</b> | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.  | string |
| <b>Header</b> | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.  | string |
| <b>Query</b>  | <b>all_fields</b><br><i>optional</i>    | Include all complex attributes in the response. See clause 5.3 of ETSI GS NFV SOL 013 for details. The NFVO shall support this parameter. | string |

| Type  | Name   | Description  | Schema |
|-------|--|--|--------|
| Query | <b>exclude_defaults</b><br><i>optional</i>       | Indicates to exclude the following complex attributes from the response. See clause 5.3 of ETSI GS NFV-SOL 013 for details. The NFVO shall support this parameter. The following attributes shall be excluded from the VnfPkgInfo structure in the response body if this parameter is provided, or none of the parameters "all_fields," "fields", "exclude_fields", "exclude_default" are provided: - softwareImages - additionalArtifacts - userDefinedData - checksum - onboardingFailureDetails | string |
| Query | <b>exclude_fields</b><br><i>optional</i>         | Complex attributes to be excluded from the response. See clause 5.3 of ETSI GS NFV SOL 013 for details. The NFVO should support this parameter.  | string |
| Query | <b>fields</b><br><i>optional</i>                 | Complex attributes to be included into the response. See clause 5.3 of ETSI GS NFV SOL 013 for details. The NFVO should support this parameter.  | string |
| Query | <b>filter</b><br><i>optional</i>                 | Attribute-based filtering expression according to clause 5.2 of ETSI GS NFV SOL 013. The NFVO shall support receiving this parameter as part of the URI query string. The OSS/BSS may supply this parameter. All attribute names that appear in the VnfPkgInfo and in data types referenced from it shall be supported by the NFVO in the filter expression.   | string |
| Query | <b>nextpage_opaque_marker</b><br><i>optional</i> | Marker to obtain the next page of a paged response. Shall be supported by the NFVO if the NFVO supports alternative 2 (paging) according to clause 5.4.2.1 of ETSI GS NFV SOL 013 for this resource.   | string |

## Responses

| HTTP Code | Description   | Schema                                    |
|-----------|---|---|
| 200       | <p>200 OK Shall be returned when information about zero or more VNF packages has been queried successfully. The response body shall contain in an array the VNF package info representations that match the attribute filter, i.e. zero or more VNF package info representations as defined in clause 9.5.2.5. If the "filter" URI parameter or one of the "all_fields", "fields", "exclude_fields" or "exclude_default" URI parameters was supplied in the request and is supported, the data in the response body shall have been transformed according to the rules specified in clauses 5.2.2 and 5.3.2 of ETSI GS NFV SOL 013, respectively. If the NFVO supports alternative 2 (paging) according to clause 5.4.2.1 of ETSI GS NFV SOL 013 for this resource, inclusion of the Link HTTP header in this response shall follow the provisions in clause 5.4.2.3 of ETSI GS NFV SOL 013.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | < <a href="#">Response 200</a> ><br>array |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |



| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 404 |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 405 |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 406 |

| HTTP Code | Description  | Schema                       |
|-----------|--|------------------------------|
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <a href="#">Response 416</a> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 500</a> |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | <a href="#">Response 503</a> |

## Response 200

| Name                          | Description                                  | Schema                 |
|-------------------------------|--|------------------------|
| <b><i>_links required</i></b> | Links to resources related to this resource. | <a href="#">_links</a> |

| Name   | Description  | Schema  |
|--|--|---|
| <b>additionalArtifacts</b><br><i>optional</i>      | Information about VNF package artifacts contained in the VNF package that are not software images. This attribute shall not be present before the VNF package content is on-boarded. Otherwise, this attribute shall be present if the VNF package contains additional artifacts.  | < <a href="#">additionalArtifacts</a> > array           |
| <b>checksum</b><br><i>optional</i>                 | This type represents the checksum of a VNF package or an artifact file.  | <a href="#">checksum</a>                                |
| <b>compatibleSpecifications</b><br><i>optional</i> | A Version. Representation: string of variable length.  | string  |
| <b>id</b><br><i>required</i>                       | An identifier with the intention of being globally unique.   | string  |
| <b>onboardingFailureDetails</b><br><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]. | <a href="#">onboardingFailureDetails</a>                |
| <b>onboardingState</b><br><i>required</i>          | The enumeration PackageOnboardingStateType shall comply with the provisions defined in Table 9.5.4.3-1. Permitted values: - CREATED: The VNF package resource has been created. - UPLOADING: The associated VNF package content is being uploaded. - PROCESSING: The associated VNF package content is being processed, e.g. validation. - ONBOARDED: The associated VNF package content is successfully on-boarded. - ERROR: There was an error during upload of the VNF package content or external artifacts, or during VNF package processing.   | enum (CREATED, UPLOADING, PROCESSING, ONBOARDED, ERROR) |

| Name  | Description   | Schema                                      |
|---|---|---|
| <b>operationalState</b><br><i>required</i>      | "The enumeration PackageOperationalStateType shall comply with the provisions defined in Table 9.5.4.4-1." Acceptable values are: - ENABLED - The VNF package is enabled, i.e. it can be used for instantiation of new VNF instances. - DISABLED - The VNF package is disabled, i.e. it cannot be used for further VNF instantiation requests (unless and until the VNF package is re-enabled). | enum (ENABLED, DISABLED)                    |
| <b>packageSecurityOption</b><br><i>required</i> | Signals the security option used by the package as defined in clause 5.1 of ETSI GS NFV-SOL 004 [5]. Valid values: OPTION_1, OPTION_2   | enum (OPTION_1, OPTION_2)                   |
| <b>signingCertificate</b><br><i>optional</i>    | The singleton signing certificate if it is included as a file in the VNF package.   | string                                      |
| <b>softwareImages</b><br><i>optional</i>        | Information about VNF package artifacts that are software images. This attribute shall not be present before the VNF package content is on-boarded. Otherwise, this attribute shall be present unless it has been requested to be excluded per attribute selector.  | < <a href="#">softwareImages</a> ><br>array |
| <b>usageState</b><br><i>required</i>            | "The enumeration PackageUsageStateType shall comply with the provisions. Acceptable values are: - IN_USE: "Individual VNF instance" resources created from this VNF package exist. - NOT_IN_USE: - No "individual VNF instance" resource created from this VNF package exists.  | enum (IN_USE, NOT_IN_USE)                   |
| <b>userDefinedData</b><br><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                                      |
| <b>vnfProductName</b><br><i>optional</i>        | Name to identify the VNF product. Invariant for the VNF product lifetime. This information is copied from the VNFD. It shall be present after the VNF package content has been on-boarded and absent otherwise.   | string                                      |
| <b>vnfProvider</b><br><i>optional</i>           | Provider of the VNF package and the VNFD. This information is copied from the VNFD. It shall be present after the VNF package content has been on-boarded and absent otherwise.   | string                                      |

| Name   | Description  | Schema           |
|--|--|------------------|
| <b>vnfSoftwareVersion</b><br><i>optional</i> | A Version. Representation: string of variable length.  | string           |
| <b>vnfdId</b><br><i>optional</i>             | An identifier with the intention of being globally unique.                                     | string           |
| <b>vnfdVersion</b><br><i>optional</i>        | A Version. Representation: string of variable length.  | string           |
| <b>vnfmInfo</b><br><i>required</i>           | Specifies VNFMs compatible with the VNF. This information is copied from the VNFD. See note 4. | < string > array |

### links

| Name                                     | Description                                | Schema                         |
|--|--|--------------------------------|
| <b>packageContent</b><br><i>required</i> | This type represents a link to a resource. | <a href="#">packageContent</a> |
| <b>self</b><br><i>required</i>           | This type represents a link to a resource. | <a href="#">self</a>           |
| <b>vnfd</b><br><i>required</i>           | This type represents a link to a resource. | <a href="#">vnfd</a>           |

### packageContent

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

### self

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

#### vnfd

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

#### additionalArtifacts

| Name   | Description   | Schema                           |
|--|---|----------------------------------|
| <b>artifactClassification</b><br><i>optional</i> | Marks specific types of artifacts as defined in the VNF package. If none of the specific classes listed below applies, the attribute shall not be present. Valid values: - HISTORY: a history artifact as per clause 4.3.3 in ETSI GS NFV-SOL 004 [5] - TESTING: a testing artifact as per clause 4.3.4 in ETSI GS NFV-SOL 004 [5] - LICENSE: a license artifact as per clause 4.3.5 in ETSI GS NFV-SOL 004 [5] | enum (HISTORY, TESTING, LICENSE) |
| <b>artifactPath</b><br><i>optional</i>           | A string as defined in IETF RFC 8259.   | string                           |
| <b>artifactURI</b><br><i>optional</i>            | String formatted according to IETF RFC 3986.  | string (uri)                     |
| <b>checksum</b><br><i>required</i>               | This type represents the checksum of a VNF package or an artifact file.   | <a href="#">checksum</a>         |
| <b>isEncrypted</b><br><i>required</i>            | Reflects whether the artifact is encrypted (true) or not (false).   | boolean                          |
| <b>metadata</b><br><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 |
|--|---|--------|
| <b>nonManoArtifactSetId</b><br><i>optional</i> | Non-MANO artifact set identifier of the non-MANO artifact set to which the artifact belongs, as defined in clause 4.3.7 of ETSI GS NFV-SOL 004 [5]. Shall be provided if the artifact is a non-MANO artifact, and shall be omitted otherwise. | string |

#### checksum

| Name                                | Description  | Schema |
|-------------------------------------|--|--------|
| <b>algorithm</b><br><i>required</i> | Name of the algorithm used to generate the checksum, as defined in ETSI GS NFV-SOL 004 [5]. For example, SHA-256, SHA-512. | string |
| <b>hash</b><br><i>required</i>      | The hexadecimal value of the checksum.   | string |

#### checksum

| Name                                | Description  | Schema |
|-------------------------------------|--|--------|
| <b>algorithm</b><br><i>required</i> | Name of the algorithm used to generate the checksum, as defined in ETSI GS NFV-SOL 004 [5]. For example, SHA-256, SHA-512. | string |
| <b>hash</b><br><i>required</i>      | The hexadecimal value of the checksum.   | string |

#### onboardingFailureDetails

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

## softwareImages

| Name                                      | Description  | Schema  |
|---|--|---|
| <b>checksum</b><br><i>required</i>        | This type represents the checksum of a VNF package or an artifact file.  | <a href="#">checksum</a>                                    |
| <b>containerFormat</b><br><i>required</i> | Container format indicates whether the software image is in a file format that also contains meta-data about the actual software. Permitted values: - AKI: a kernel image format - AMI: a machine image format - ARI: a ram disk image format - BARE: the image does not have a container or meta-data envelope - DOCKER: docker container format - OVA: OVF package in a tar file - OVF: OVF container format   | enum (AKI, AMI, ARI, BARE, DOCKER, OVA, OVF)                |
| <b>diskFormat</b><br><i>required</i>      | Disk format of a software image is the format of the underlying disk image. Permitted values: - AKI: a kernel image format - AMI: a machine image format - ARI: a ramdisk image format - ISO: an archive format for the data contents of an optical disc, such as CD-ROM - QCOW2: a common disk image format, which can expand dynamically and supports copy on write - RAW: an unstructured disk image format - VDI: a common disk image format - VHD: a common disk image format - VHDX: enhanced version of VHD format - VMDK: a common disk image format | enum (AKI, AMI, ARI, ISO, QCOW2, RAW, VDI, VHD, VHDX, VMDK) |
| <b>id</b><br><i>required</i>              | Identifier of the VNF Virtual Link Descriptor (VLD) in the VNFD.   | string  |



| Name                                   | Description   | Schema       |
|--|---|--------------|
| <b>imagePath</b><br><i>required</i>    | Path in the VNF package, which identifies the image artifact and also allows to access a copy of the image artifact. For a software image contained as a file in the VNF package, this attribute shall be present, and the value of this attribute shall start with the name of the first segment in the path in the package, i.e., it shall not be prefixed by path separator characters such as "." and "/". EXAMPLE: foo/bar/m%40ster.vhd For an external software image represented as a URI in the VNF descriptor, this attribute shall be present if the image artifact has been downloaded by the NFVO and shall be absent otherwise. If present, it shall contain the artifactPath under which the image artifact can be obtained using the "Individual artifact in a VNF package" resource defined in clause 9.4.7. It is the responsibility of the NFVO to synthesize this path in a manner that avoids any collision of the synthesized artifact path with the paths and names of image artifacts included in the package. | string       |
| <b>imageUri</b><br><i>optional</i>     | String formatted according to IETF RFC 3986.  | string (uri) |
| <b>isEncrypted</b><br><i>required</i>  | Reflects whether the image is encrypted (true) or not (false).  | boolean      |
| <b>minDisk</b><br><i>required</i>      | The minimal disk for this software image in bytes.<br><b>Minimum value : 0</b>  | integer      |
| <b>minRam</b><br><i>required</i>       | The minimal RAM for this software image in bytes.<br><b>Minimum value : 0</b>   | integer      |
| <b>name</b><br><i>required</i>         | Name of the software image.   | string       |
| <b>provider</b><br><i>required</i>     | Provider of the software image.   | string       |
| <b>size</b><br><i>required</i>         | Size of this software image in bytes.<br><b>Minimum value : 0</b>   | integer      |
| <b>userMetadata</b><br><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 |
|-----------------------------------|---|--------|
| <b>version</b><br><i>required</i> | A Version. Representation: string of variable length. | string |

#### checksum

| Name                                | Description  | Schema |
|-------------------------------------|--|--------|
| <b>algorithm</b><br><i>required</i> | Name of the algorithm used to generate the checksum, as defined in ETSI GS NFV-SOL 004 [5]. For example, SHA-256, SHA-512. | string |
| <b>hash</b><br><i>required</i>      | The hexadecimal value of the checksum.   | string |

#### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages/{vnfPkgId}

### Description

The GET method reads the information of a VNF package.



## Parameters

| Type   | Name                                    | Description  | Schema |
|--------|---|--|--------|
| Header | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response. Reference: IETF RFC 7231 | string |
| Header | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.           | string |
| Header | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.         | string |
| Path   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the VNF package. The identifier is allocated by the NFVO.      | string |

## Responses

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 200       | <p>200 OK Shall be returned when information of the VNF package has been read successfully. The response body shall contain the VNF package info representation defined in clause 9.5.2.5.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response. This header field shall be present if the response has a non-empty message body.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 200 |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema                       |
|-----------|--|------------------------------|
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <a href="#">Response 416</a> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 500</a> |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | <a href="#">Response 503</a> |

## Response 200

| Name                                   | Description                                  | Schema                 |
|--|--|------------------------|
| <b><u>links</u></b><br><i>required</i> | Links to resources related to this resource. | <a href="#">_links</a> |

| Name   | Description  | Schema  |
|--|--|---|
| <b>additionalArtifacts</b><br><i>optional</i>      | Information about VNF package artifacts contained in the VNF package that are not software images. This attribute shall not be present before the VNF package content is on-boarded. Otherwise, this attribute shall be present if the VNF package contains additional artifacts.  | < <a href="#">additionalArtifacts</a> > array           |
| <b>checksum</b><br><i>optional</i>                 | This type represents the checksum of a VNF package or an artifact file.  | <a href="#">checksum</a>                                |
| <b>compatibleSpecifications</b><br><i>optional</i> | A Version. Representation: string of variable length.  | string  |
| <b>id</b><br><i>required</i>                       | An identifier with the intention of being globally unique.   | string  |
| <b>onboardingFailureDetails</b><br><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]. | <a href="#">onboardingFailureDetails</a>                |
| <b>onboardingState</b><br><i>required</i>          | The enumeration PackageOnboardingStateType shall comply with the provisions defined in Table 9.5.4.3-1. Permitted values: - CREATED: The VNF package resource has been created. - UPLOADING: The associated VNF package content is being uploaded. - PROCESSING: The associated VNF package content is being processed, e.g. validation. - ONBOARDED: The associated VNF package content is successfully on-boarded. - ERROR: There was an error during upload of the VNF package content or external artifacts, or during VNF package processing.   | enum (CREATED, UPLOADING, PROCESSING, ONBOARDED, ERROR) |

| Name  | Description   | Schema                                      |
|---|---|---|
| <b>operationalState</b><br><i>required</i>      | "The enumeration PackageOperationalStateType shall comply with the provisions defined in Table 9.5.4.4-1." Acceptable values are: - ENABLED - The VNF package is enabled, i.e. it can be used for instantiation of new VNF instances. - DISABLED - The VNF package is disabled, i.e. it cannot be used for further VNF instantiation requests (unless and until the VNF package is re-enabled). | enum (ENABLED, DISABLED)                    |
| <b>packageSecurityOption</b><br><i>required</i> | Signals the security option used by the package as defined in clause 5.1 of ETSI GS NFV-SOL 004 [5]. Valid values: OPTION_1, OPTION_2   | enum (OPTION_1, OPTION_2)                   |
| <b>signingCertificate</b><br><i>optional</i>    | The singleton signing certificate if it is included as a file in the VNF package.   | string                                      |
| <b>softwareImages</b><br><i>optional</i>        | Information about VNF package artifacts that are software images. This attribute shall not be present before the VNF package content is on-boarded. Otherwise, this attribute shall be present unless it has been requested to be excluded per attribute selector.  | < <a href="#">softwareImages</a> ><br>array |
| <b>usageState</b><br><i>required</i>            | "The enumeration PackageUsageStateType shall comply with the provisions. Acceptable values are: - IN_USE: "Individual VNF instance" resources created from this VNF package exist. - NOT_IN_USE: - No "individual VNF instance" resource created from this VNF package exists.  | enum (IN_USE, NOT_IN_USE)                   |
| <b>userDefinedData</b><br><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                                      |
| <b>vnfProductName</b><br><i>optional</i>        | Name to identify the VNF product. Invariant for the VNF product lifetime. This information is copied from the VNFD. It shall be present after the VNF package content has been on-boarded and absent otherwise.   | string                                      |
| <b>vnfProvider</b><br><i>optional</i>           | Provider of the VNF package and the VNFD. This information is copied from the VNFD. It shall be present after the VNF package content has been on-boarded and absent otherwise.   | string                                      |

| Name   | Description  | Schema           |
|--|--|------------------|
| <b>vnfSoftwareVersion</b><br><i>optional</i> | A Version. Representation: string of variable length.  | string           |
| <b>vnfdId</b><br><i>optional</i>             | An identifier with the intention of being globally unique.                                     | string           |
| <b>vnfdVersion</b><br><i>optional</i>        | A Version. Representation: string of variable length.  | string           |
| <b>vnfmInfo</b><br><i>required</i>           | Specifies VNFMs compatible with the VNF. This information is copied from the VNFD. See note 4. | < string > array |

### links

| Name                                     | Description                                | Schema                         |
|--|--|--------------------------------|
| <b>packageContent</b><br><i>required</i> | This type represents a link to a resource. | <a href="#">packageContent</a> |
| <b>self</b><br><i>required</i>           | This type represents a link to a resource. | <a href="#">self</a>           |
| <b>vnfd</b><br><i>required</i>           | This type represents a link to a resource. | <a href="#">vnfd</a>           |

### packageContent

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

### self



| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

#### **vnfd**

| Name                           | Description  | Schema       |
|--------------------------------|--|--------------|
| <b>href</b><br><i>required</i> | URI of a resource referenced from a notification. Should be an absolute URI (i.e. a URI that contains {apiRoot}), however, may be a relative URI (i.e. a URI where the {apiRoot} part is omitted) if the {apiRoot} information is not available. | string (url) |

#### **additionalArtifacts**

| Name   | Description   | Schema                           |
|--|---|----------------------------------|
| <b>artifactClassification</b><br><i>optional</i> | Marks specific types of artifacts as defined in the VNF package. If none of the specific classes listed below applies, the attribute shall not be present. Valid values: - HISTORY: a history artifact as per clause 4.3.3 in ETSI GS NFV-SOL 004 [5] - TESTING: a testing artifact as per clause 4.3.4 in ETSI GS NFV-SOL 004 [5] - LICENSE: a license artifact as per clause 4.3.5 in ETSI GS NFV-SOL 004 [5] | enum (HISTORY, TESTING, LICENSE) |
| <b>artifactPath</b><br><i>optional</i>           | A string as defined in IETF RFC 8259.   | string                           |
| <b>artifactURI</b><br><i>optional</i>            | String formatted according to IETF RFC 3986.  | string (uri)                     |
| <b>checksum</b><br><i>required</i>               | This type represents the checksum of a VNF package or an artifact file.   | <a href="#">checksum</a>         |
| <b>isEncrypted</b><br><i>required</i>            | Reflects whether the artifact is encrypted (true) or not (false).   | boolean                          |
| <b>metadata</b><br><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 |
|--|---|--------|
| <b>nonManoArtifactSetId</b><br><i>optional</i> | Non-MANO artifact set identifier of the non-MANO artifact set to which the artifact belongs, as defined in clause 4.3.7 of ETSI GS NFV-SOL 004 [5]. Shall be provided if the artifact is a non-MANO artifact, and shall be omitted otherwise. | string |

#### checksum

| Name                                | Description  | Schema |
|-------------------------------------|--|--------|
| <b>algorithm</b><br><i>required</i> | Name of the algorithm used to generate the checksum, as defined in ETSI GS NFV-SOL 004 [5]. For example, SHA-256, SHA-512. | string |
| <b>hash</b><br><i>required</i>      | The hexadecimal value of the checksum.   | string |

#### checksum

| Name                                | Description  | Schema |
|-------------------------------------|--|--------|
| <b>algorithm</b><br><i>required</i> | Name of the algorithm used to generate the checksum, as defined in ETSI GS NFV-SOL 004 [5]. For example, SHA-256, SHA-512. | string |
| <b>hash</b><br><i>required</i>      | The hexadecimal value of the checksum.   | string |

#### onboardingFailureDetails

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

## softwareImages

| Name                                      | Description  | Schema  |
|---|--|---|
| <b>checksum</b><br><i>required</i>        | This type represents the checksum of a VNF package or an artifact file.  | <a href="#">checksum</a>                                    |
| <b>containerFormat</b><br><i>required</i> | Container format indicates whether the software image is in a file format that also contains meta-data about the actual software. Permitted values: - AKI: a kernel image format - AMI: a machine image format - ARI: a ram disk image format - BARE: the image does not have a container or meta-data envelope - DOCKER: docker container format - OVA: OVF package in a tar file - OVF: OVF container format   | enum (AKI, AMI, ARI, BARE, DOCKER, OVA, OVF)                |
| <b>diskFormat</b><br><i>required</i>      | Disk format of a software image is the format of the underlying disk image. Permitted values: - AKI: a kernel image format - AMI: a machine image format - ARI: a ramdisk image format - ISO: an archive format for the data contents of an optical disc, such as CD-ROM - QCOW2: a common disk image format, which can expand dynamically and supports copy on write - RAW: an unstructured disk image format - VDI: a common disk image format - VHD: a common disk image format - VHDX: enhanced version of VHD format - VMDK: a common disk image format | enum (AKI, AMI, ARI, ISO, QCOW2, RAW, VDI, VHD, VHDX, VMDK) |
| <b>id</b><br><i>required</i>              | Identifier of the VNF Virtual Link Descriptor (VLD) in the VNFD.   | string  |

| Name                                   | Description   | Schema       |
|--|---|--------------|
| <b>imagePath</b><br><i>required</i>    | Path in the VNF package, which identifies the image artifact and also allows to access a copy of the image artifact. For a software image contained as a file in the VNF package, this attribute shall be present, and the value of this attribute shall start with the name of the first segment in the path in the package, i.e., it shall not be prefixed by path separator characters such as "." and "/". EXAMPLE: foo/bar/m%40ster.vhd For an external software image represented as a URI in the VNF descriptor, this attribute shall be present if the image artifact has been downloaded by the NFVO and shall be absent otherwise. If present, it shall contain the artifactPath under which the image artifact can be obtained using the "Individual artifact in a VNF package" resource defined in clause 9.4.7. It is the responsibility of the NFVO to synthesize this path in a manner that avoids any collision of the synthesized artifact path with the paths and names of image artifacts included in the package. | string       |
| <b>imageUri</b><br><i>optional</i>     | String formatted according to IETF RFC 3986.  | string (uri) |
| <b>isEncrypted</b><br><i>required</i>  | Reflects whether the image is encrypted (true) or not (false).  | boolean      |
| <b>minDisk</b><br><i>required</i>      | The minimal disk for this software image in bytes.<br><b>Minimum value : 0</b>  | integer      |
| <b>minRam</b><br><i>required</i>       | The minimal RAM for this software image in bytes.<br><b>Minimum value : 0</b>   | integer      |
| <b>name</b><br><i>required</i>         | Name of the software image.   | string       |
| <b>provider</b><br><i>required</i>     | Provider of the software image.   | string       |
| <b>size</b><br><i>required</i>         | Size of this software image in bytes.<br><b>Minimum value : 0</b>   | integer      |
| <b>userMetadata</b><br><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 |
|-----------------------------------|---|--------|
| <b>version</b><br><i>required</i> | A Version. Representation: string of variable length. | string |

#### checksum

| Name                                | Description  | Schema |
|-------------------------------------|--|--------|
| <b>algorithm</b><br><i>required</i> | Name of the algorithm used to generate the checksum, as defined in ETSI GS NFV-SOL 004 [5]. For example, SHA-256, SHA-512. | string |
| <b>hash</b><br><i>required</i>      | The hexadecimal value of the checksum.   | string |

#### Response 400

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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



| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages/{vnfPkgId}

### Description

The DELETE method deletes an individual VNF Package resource.

## Parameters

| Type   | Name                                    | Description   | Schema |
|--------|---|---|--------|
| Header | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.      | string |
| Header | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.    | string |
| Path   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the VNF package. The identifier is allocated by the NFVO. | string |

## Responses

| HTTP Code | Description   | Schema     |
|-----------|---|------------|
| 204       | 204 No Content The VNF package has been deleted successfully. The response body shall be empty.<br><b>Headers :</b><br><i>Version</i> (string) : Version of the API used in the response. | No Content |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be properly specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema                       |
|-----------|--|------------------------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <a href="#">Response 409</a> |
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <a href="#">Response 416</a> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 500</a> |



| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 503 |

### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages/{vnfPkgId}

### Description

"The PATCH method updates the information of a VNF package." "This method shall follow the provisions specified in the Tables 9.4.3.3.4-1 and 9.4.3.3.4-2 for URI query parameters, request and response data structures, and response codes."



## Parameters

| Type   | Name                                    | Description   | Schema               |
|--------|---|---|----------------------|
| Header | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.      | string               |
| Header | <b>Content-Type</b><br><i>required</i>  | The MIME type of the body of the request. Reference: IETF RFC 7231      | string               |
| Header | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.    | string               |
| Path   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the VNF package. The identifier is allocated by the NFVO. | string               |
| Body   | <b>body</b><br><i>required</i>          | Parameters for VNF package information modifications.                   | <a href="#">body</a> |

### body

| Name                                       | Description   | Schema                   |
|--|---|--------------------------|
| <b>operationalState</b><br><i>optional</i> | "The enumeration PackageOperationalStateType shall comply with the provisions defined in Table 9.5.4.4-1." Acceptable values are: - ENABLED - The VNF package is enabled, i.e. it can be used for instantiation of new VNF instances. - DISABLED - The VNF package is disabled, i.e. it cannot be used for further VNF instantiation requests (unless and until the VNF package is re-enabled). | enum (ENABLED, DISABLED) |
| <b>userDefinedData</b><br><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                   |

## Responses

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 200       | <p>200 OK Shall be returned when the operation has been completed successfully. The response body shall contain attribute modifications for an "Individual VNF package" resource.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 200 |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema                       |
|-----------|--|------------------------------|
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <a href="#">Response 416</a> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 500</a> |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | <a href="#">Response 503</a> |

## Response 200

| Name                                       | Description   | Schema                   |
|--|---|--------------------------|
| <b>operationalState</b><br><i>optional</i> | "The enumeration PackageOperationalStateType shall comply with the provisions defined in Table 9.5.4.4-1." Acceptable values are: - ENABLED - The VNF package is enabled, i.e. it can be used for instantiation of new VNF instances. - DISABLED - The VNF package is disabled, i.e. it cannot be used for further VNF instantiation requests (unless and until the VNF package is re-enabled). | enum (ENABLED, DISABLED) |
| <b>userDefinedData</b><br><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                   |

### Response 400

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

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

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



| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages/{vnfPkgId}/artifacts

### Description

The GET method shall return an archive that contains a set of artifacts according to the provisions for inclusion/exclusion defined below, embedded in a directory structure being the same as in the VNF package. The criteria for exclusion/inclusion of an artifact in the archive are defined as

follows: • Artifacts that are software images shall be excluded from the archive. • Artifacts that are not software images and that are external to the VNF package shall be excluded from the archive unless the URI query parameter "include\_external\_artifacts" has been provided. External artifacts shall be included in the archive using the content of the "artifactPath" attribute as the path. • All additional artifacts included in the VNF package that are MANO artifacts shall be included in the archive, unless the URI query parameter "exclude\_all\_mano\_artifacts" has been provided, in which case such artifacts shall be excluded. • All additional artifacts included in the VNF package that are non-MANO artifacts shall be included in the archive, unless: - the URI query parameter "exclude\_all\_non\_mano\_artifacts" has been provided, in which case such artifacts shall be excluded; - the URI query parameter "select\_non\_mano\_artifact\_sets" has been provided and is supported by the NFVO, in which case only those non-MANO artifacts shall be included whose non-MANO artifact set identifier matches one of the values of the query parameter. Package metadata such as manifest file or VNFD shall not be included in the archive. This method shall follow the provisions specified in the Tables 9.4.5a.3.2-1 and 9.4.5a.3.2-2 for URI query parameters, request and response data structures, and response codes.

## Parameters

| Type   | Name                                    | Description  | Schema                    |
|--------|---|--|---------------------------|
| Header | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response.  | enum<br>(application/zip) |
| Header | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.   | string                    |
| Header | <b>Range</b><br><i>optional</i>         | The request may contain a "Range" HTTP header to obtain single range of bytes from the archive containing the artifacts. This can be used to continue an aborted transmission. If the "Range" header is present in the request and the NFVO does not support responding to range requests with a 206 response, it shall return a 200 OK response instead as defined below. | string                    |
| Header | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.   | string                    |
| Path   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the on-boarded VNF package. The identifier is allocated by the NFVO. This identifier can be retrieved from the "vnfPkgId" attribute in the VnfPackageOnboardingNotification or VnfPackageChangeNotification.   | string                    |

| Type  | Name   | Description  | Schema |
|-------|--|--|--------|
| Query | <b>exclude_all_mano_artifacts</b><br><i>optional</i>     | Flag (i.e. parameter without value) that instructs the NFVO to exclude the set of additional MANO artifacts (i.e. those that are not images) from the response payload body. The NFVO shall support this parameter. The OSS/BSS may supply this parameter.   | string |
| Query | <b>exclude_all_non_mano_artifacts</b><br><i>optional</i> | Flag (i.e. parameter without value) that instructs the NFVO to exclude the set of non-MANO artifacts from the response payload body. The NFVO shall support this parameter. The OSS/BSS may supply this parameter.   | string |
| Query | <b>include_external_artifacts</b><br><i>optional</i>     | Flag (i.e. parameter without value) that instructs the NFVO to include external artifacts in the response payload body. It shall not be treated as an error if this flag is provided but there is no external artifact to include in the result. If this parameter is missing, no external artifacts shall be included. The NFVO shall support this parameter. The OSS/BSS may supply this parameter.                                | string |
| Query | <b>include_signatures</b><br><i>optional</i>             | If this parameter is provided, the NFVO shall include in the ZIP archive the individual signatures and, if provided, related certificates for the included artifacts, in the format in which they are provided in the VNF package. If this parameter is not given, the NFVO shall only provide copies of the artifact files. This URI query parameter is a flag, i.e. it shall have no value. The NFVO shall support this parameter. | string |
| Query | <b>select_non_mano_artifact_sets</b><br><i>optional</i>  | Comma-separated list of non-MANO artifact set identifiers for which the artifacts are to be included in the response body. The NFVO should support this parameter. If the NFVO does not support this parameter, it shall ignore it, i.e. provide a response as if no parameter was provided. The OSS/BSS may supply this parameter.  | string |

## Responses

| HTTP Code | Description   | Schema     |
|-----------|---|------------|
| 200       | <p>200 OK Shall be returned when the whole content of the archive containing the artifact files has been read successfully. The payload body shall be a ZIP archive containing the requested set of artifacts selected according to the provisions specified above in this clause, and, if the flag "include_signatures" was provided in the related request, the applicable signature files and, if available, the separate certificate files from the VNF package. The "Content-Type" HTTP header shall be set to "application/zip".</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | No Content |
| 206       | <p>206 Partial Content. If the NFVO supports range requests, this response shall be returned when a single consecutive byte range from the content of the archive that would have been returned in a "200 OK" response has been read successfully according to the request. The response body shall contain the requested part of the archive. The "Content-Type" HTTP header shall be set to "application/zip". The "Content-Range" HTTP header shall be provided according to IETF RFC 7233 [10].</p> <p><b>Headers :</b></p> <p><b>Content-Range</b> (string)</p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 409</a></p> |
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 416</a></p> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 500</a></p> |

| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 503 |

### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages/{vnfPkgId}/artifacts/{artifactPath}

### Description

The GET method fetches the content of an artifact within a VNF package. This method shall follow the provisions specified in the Tables 9.4.7.3.2-1 and 9.4.7.3.2-2 for URI query parameters, request and response data structures, and response codes.

## Parameters

| Type   | Name                                    | Description   | Schema |
|--------|---|---|--------|
| Header | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response.   | string |
| Header | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.  | string |
| Header | <b>Range</b><br><i>optional</i>         | The request may contain a "Range" HTTP header to obtain single range of bytes from the VNF package file. This can be used to continue an aborted transmission. If the NFVO does not support range requests, it should return the whole file with a 200 OK response instead.   | string |
| Header | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.  | string |
| Path   | <b>artifactPath</b><br><i>required</i>  | For an artifact contained as a file in the VNF package, this variable shall contain a sequence of one or more path segments representing the path of the artifact within the VNF package, relative to the root of the package. See note 3. EXAMPLE: foo/bar/m%40ster.sh For an external artifact represented as a URI in the VNF package manifest, this variable shall contain a sequence of one or more path segments as synthesized by the NFVO (see clause 9.5.3.3), representing this artifact. See note 2 and note 3 | string |
| Path   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the on-boarded VNF package. The identifier is allocated by the NFVO. This identifier can be retrieved from the "vnfPkgId" attribute in the VnfPackageOnboardingNotification or VnfPackageChangeNotification.  | string |

| Type  | Name   | Description  | Schema |
|-------|--|--|--------|
| Query | <b>include_signatures</b><br><i>optional</i> | If this parameter is provided, the NFVO shall return the artifact and related security information (such as signature and optional certificate) in a ZIP archive. If this parameter is not given, the NFVO shall provide only a copy of the artifact file. This URI query parameter is a flag, i.e. it shall have no value. The NFVO shall support this parameter. | string |

## Responses

| HTTP Code | Description   | Schema     |
|-----------|---|------------|
| 200       | <p>200 OK Shall be returned when the whole content of the artifact file has been read successfully. If the "include_signatures" request URI parameter was not provided in the related request, the payload body shall contain a copy of the artifact file from the VNF package, as defined by ETSI GS NFV-SOL 004 [5], and the "Content-Type" HTTP header shall be set according to the content type of the artifact file. If the artifact is encrypted, the header shall be set to the value "application/cms" (IETF RFC 7193 [17]). If the content type cannot be determined, the header shall be set to the value "application/octet-stream". If the "include_signatures" request URI parameter was provided in the related request, the "ContentType" HTTP header shall be set to "application/zip" and the payload body shall contain a ZIP archive which includes: - a copy of the artifact file from the VNF package, as defined by ETSI GS NFV-SOL 004 [5]; - the related security information (individual signature file and optional related individual certificate file).</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | No Content |

| HTTP Code | Description   | Schema     |
|-----------|---|------------|
| 206       | <p>Partial Content. If the NFVO supports range requests and the "include_signatures" request URI parameter was not present in the related request, this response shall be returned when a single consecutive byte range from the content of the artifact file has been read successfully according to the request. The response body shall contain the requested part of the artifact file from the VNF package, as defined by ETSI GS NFV-SOL 004 [5]. The "Content-Type" HTTP header shall be set according to the content type of the artifact file. If the content type cannot be determined, the header shall be set to the value "application/octet-stream". The "Content-Range" HTTP header shall be provided according to IETF RFC 7233 [10].</p> <p><b>Headers :</b></p> <p><b>Content-Range</b> (string)</p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |



| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 404 |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 405 |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 406 |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 409</a></p> |
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 416</a></p> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 500</a></p> |

| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 503 |

### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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



| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
|---------------------------------|---|--------------|
| <b>title</b><br><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       |
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages/{vnfPkgId}/ext\_artifacts\_access

### Description

The GET method reads the access configuration information that is used by the NFVO to get the content of external VNF package artifacts. This method shall follow the provisions specified in the Tables 9.4.4a.3.2-1 and 9.4.4a.3.2-2 for URI query parameters, request and response data structures,

and response codes.

## Parameters

| Type   | Name                                    | Description  | Schema |
|--------|---|--|--------|
| Header | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response.  | string |
| Header | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.   | string |
| Header | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.   | string |
| Path   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the on-boarded VNF package. The identifier is allocated by the NFVO. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new Individual VNF package resource. | string |

## Responses

| HTTP Code | Description  | Schema                       |
|-----------|--|------------------------------|
| 200       | <p>200 OK Shall be returned when the access configuration information has been read successfully. If no information has been provided previously, an empty array shall be returned.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 200</a> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 404 |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 405 |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 406 |

| HTTP Code | Description  | Schema                       |
|-----------|--|------------------------------|
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <a href="#">Response 416</a> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 500</a> |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | <a href="#">Response 503</a> |

## Response 200



| Name  | Description  | Schema  |
|---|--|---|
| <b>ExternalArtifactsAccessConfig</b><br><i>optional</i> | This type represents the access configuration information for downloading external VNF package artifacts. The NFVO can obtain the external VNF package artifact file through the information provided in this structure, together with information provided in the manifest / VNFD. The data structure shall comply with the provisions defined in Table 9.5.2.10-1. If the data structure is part of a response body, security-sensitive attributes shall be excluded as specified in Table 9.5.2.10-1. | <a href="#">ExternalArtifactsAccessConfig</a> |

### ExternalArtifactsAccessConfig

| Name                               | Description  | Schema                   |
|------------------------------------|--|--------------------------|
| <b>artifact</b><br><i>optional</i> | Access configuration information for an external artefact. | <a href="#">artifact</a> |

### artifact

| Name  | Description   | Schema  |
|---|---|---|
| <b>artifactUri</b><br><i>required</i>                   | String formatted according to IETF RFC 3986.  | string (uri)                                  |
| <b>authType</b><br><i>optional</i>                      | Defines the type of authentication / authorization for downloading the VNF package. Permitted values: - BASIC: Only the "username" and "password" attributes shall be present. - OAUTH2_CLIENT_CREDENTIALS: Only the "paramsOauth2ClientCredentials" attribute shall be present. This attribute shall not be present if no credentials are provided for the artifact. | enum (BASIC, OAUTH2_CLIENT_CREDENTIALS)       |
| <b>overrideUri</b><br><i>optional</i>                   | String formatted according to IETF RFC 3986.  | string (uri)                                  |
| <b>paramsOauth2ClientCredentials</b><br><i>optional</i> | Parameters for authentication/authorization using OAUTH2_CLIENT_CREDENTIALS.  | <a href="#">paramsOauth2ClientCredentials</a> |
| <b>password</b><br><i>optional</i>                      | Password to be used for authentication. Shall not be present in response bodies.  | string  |

| Name                               | Description                              | Schema |
|------------------------------------|--|--------|
| <b>username</b><br><i>optional</i> | User name to be used for authentication. | string |

#### paramsOauth2ClientCredentials

| Name                                     | Description   | Schema       |
|--|---|--------------|
| <b>clientId</b><br><i>required</i>       | Client identifier to be used in the access token request of the OAuth 2.0 client credentials grant type.  | string       |
| <b>clientPassword</b><br><i>required</i> | Client password to be used in the access token request of the OAuth 2.0 client credentials grant type. Shall not be present in response bodies. | string       |
| <b>tokenEndpoint</b><br><i>required</i>  | String formatted according to IETF RFC 3986.  | string (uri) |

#### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

## PUT /vnf\_packages/{vnfPkgId}/ext\_artifacts\_access

### Description

The PUT method provides the access configuration information for the NFVO to download the content of external VNF package artifacts. As precondition for invoking this method, the individual VNF package resource shall have been created, and the value of "onboardingState" attribute shall equal to "CREATED" or "ERROR". The resource representation in the payload body of the PUT request shall replace the current state of the resource. This method shall follow the provisions specified in the Tables 9.4.4a.3.3-1 and 9.4.4a.3.3-2 for URI query parameters, request and response data structures, and response codes.

### Parameters

| Type          | Name                                    | Description  | Schema               |
|---------------|---|--|----------------------|
| <b>Header</b> | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.   | string               |
| <b>Header</b> | <b>Content-Type</b><br><i>required</i>  | The MIME type of the body of the request. Reference: IETF RFC 7231   | string               |
| <b>Header</b> | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.   | string               |
| <b>Path</b>   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the on-boarded VNF package. The identifier is allocated by the NFVO. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new Individual VNF package resource. | string               |
| <b>Body</b>   | <b>body</b><br><i>required</i>          | The payload body contains the access configuration information based on which the NFVO can obtain the external VNF package artifact files.   | <a href="#">body</a> |

### body

| Name                               | Description  | Schema                   |
|------------------------------------|--|--------------------------|
| <b>artifact</b><br><i>optional</i> | Access configuration information for an external artefact. | <a href="#">artifact</a> |

### artifact

| Name  | Description   | Schema  |
|---|---|---|
| <b>artifactUri</b><br><i>required</i>                   | String formatted according to IETF RFC 3986.  | string (uri)                                  |
| <b>authType</b><br><i>optional</i>                      | Defines the type of authentication / authorization for downloading the VNF package. Permitted values: - BASIC: Only the "username" and "password" attributes shall be present. - OAUTH2_CLIENT_CREDENTIALS: Only the "paramsOauth2ClientCredentials" attribute shall be present. This attribute shall not be present if no credentials are provided for the artifact. | enum (BASIC, OAUTH2_CLIENT_CREDENTIALS)       |
| <b>overrideUri</b><br><i>optional</i>                   | String formatted according to IETF RFC 3986.  | string (uri)                                  |
| <b>paramsOauth2ClientCredentials</b><br><i>optional</i> | Parameters for authentication/authorization using OAUTH2_CLIENT_CREDENTIALS.  | <a href="#">paramsOauth2ClientCredentials</a> |
| <b>password</b><br><i>optional</i>                      | Password to be used for authentication. Shall not be present in response bodies.  | string  |
| <b>username</b><br><i>optional</i>                      | User name to be used for authentication.  | string  |

### paramsOauth2ClientCredentials

| Name                                     | Description   | Schema |
|--|---|--------|
| <b>clientId</b><br><i>required</i>       | Client identifier to be used in the access token request of the OAuth 2.0 client credentials grant type.  | string |
| <b>clientPassword</b><br><i>required</i> | Client password to be used in the access token request of the OAuth 2.0 client credentials grant type. Shall not be present in response bodies. | string |

| Name                                    | Description                                  | Schema       |
|---|--|--------------|
| <b>tokenEndpoint</b><br><i>required</i> | String formatted according to IETF RFC 3986. | string (uri) |

## Responses

| HTTP Code  | Description   | Schema                       |
|------------|---|------------------------------|
| <b>200</b> | <p>200 OK Shall be returned when the attribute "onboardingState" = "CREATED" or when the attribute "onboardingState" = "ERROR" and the VNF package has not been uploaded successfully previously, to indicate that the access configuration information has been stored successfully by the NFVO. The response body shall contain a representation of the state of the resource.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 200</a> |
| <b>202</b> | <p>202 ACCEPTED</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>Location</b> (string (url)) : The resource URI of the created NS instance.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | No Content                   |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 409</a></p> |
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 416</a></p> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 500</a></p> |

| HTTP Code | Description   | Schema                       |
|-----------|---|------------------------------|
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <a href="#">Response 503</a> |

## Response 200

| Name  | Description  | Schema  |
|---|--|---|
| <b>ExternalArtifactsAccessConfig</b><br><i>optional</i> | This type represents the access configuration information for downloading external VNF package artifacts. The NFVO can obtain the external VNF package artifact file through the information provided in this structure, together with information provided in the manifest / VNFD. The data structure shall comply with the provisions defined in Table 9.5.2.10-1. If the data structure is part of a response body, security-sensitive attributes shall be excluded as specified in Table 9.5.2.10-1. | <a href="#">ExternalArtifactsAccessConfig</a> |

## ExternalArtifactsAccessConfig

| Name                               | Description  | Schema                   |
|------------------------------------|--|--------------------------|
| <b>artifact</b><br><i>optional</i> | Access configuration information for an external artefact. | <a href="#">artifact</a> |

## artifact

| Name                                  | Description                                  | Schema       |
|---------------------------------------|--|--------------|
| <b>artifactUri</b><br><i>required</i> | String formatted according to IETF RFC 3986. | string (uri) |



| Name  | Description   | Schema  |
|---|---|---|
| <b>authType</b><br><i>optional</i>                      | Defines the type of authentication / authorization for downloading the VNF package. Permitted values: - BASIC: Only the "username" and "password" attributes shall be present. - OAUTH2_CLIENT_CREDENTIALS: Only the "paramsOauth2ClientCredentials" attribute shall be present. This attribute shall not be present if no credentials are provided for the artifact. | enum (BASIC, OAUTH2_CLIENT_CREDENTIALS)       |
| <b>overrideUri</b><br><i>optional</i>                   | String formatted according to IETF RFC 3986.  | string (uri)                                  |
| <b>paramsOauth2ClientCredentials</b><br><i>optional</i> | Parameters for authentication/authorization using OAUTH2_CLIENT_CREDENTIALS.  | <a href="#">paramsOauth2ClientCredentials</a> |
| <b>password</b><br><i>optional</i>                      | Password to be used for authentication. Shall not be present in response bodies.  | string  |
| <b>username</b><br><i>optional</i>                      | User name to be used for authentication.  | string  |

### paramsOauth2ClientCredentials

| Name                                     | Description   | Schema       |
|--|---|--------------|
| <b>clientId</b><br><i>required</i>       | Client identifier to be used in the access token request of the OAuth 2.0 client credentials grant type.  | string       |
| <b>clientPassword</b><br><i>required</i> | Client password to be used in the access token request of the OAuth 2.0 client credentials grant type. Shall not be present in response bodies. | string       |
| <b>tokenEndpoint</b><br><i>required</i>  | String formatted according to IETF RFC 3986.  | string (uri) |

### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                    | <b>Description</b>   | <b>Schema</b> |
|--------------------------------|--|---------------|
| <b>type</b><br><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

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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
|---------------------------------|---|--------------|
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages/{vnfPkgId}/manifest

### Description

The GET method reads the content of the manifest within a VNF package.

### Parameters

| Type          | Name                                    | Description  | Schema                             |
|---------------|---|--|------------------------------------|
| <b>Header</b> | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response.  | enum (text/plain, application/zip) |
| <b>Header</b> | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.   | string                             |
| <b>Header</b> | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.   | string                             |
| <b>Path</b>   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the on-boarded VNF package. The identifier is allocated by the NFVO. This identifier can be retrieved from the "vnfPkgId" attribute in the VnfPackageOnboardingNotification or VnfPackageChangeNotification. | string                             |

| Type  | Name   | Description   | Schema |
|-------|--|---|--------|
| Query | <b>include_signatures</b><br><i>optional</i> | If this parameter is provided, the NFVO shall return the manifest and related security information (such as certificate) in a ZIP archive. If this parameter is not given, the NFVO shall provide only a copy of the manifest file. This URI query parameter is a flag, i.e. it shall have no value. The NFVO shall support this parameter. | string |

## Responses

| HTTP Code | Description  | Schema     |
|-----------|--|------------|
| 200       | <p>200 OK Shall be returned when the content of the manifest has been read successfully. If the "include_signatures" URI query parameter was absent in the request, or if the manifest file has all security-related information embedded (i.e. there is no separate certificate file), the payload body shall contain a copy of the manifest file of the VNF package, and the "Content-Type" HTTP header shall be set to "text/plain". If the "include_signatures" URI query parameter was present in the related request and the manifest file does not have all the security-related information embedded (i.e. there is a separate certificate file), the "Content-Type" HTTP header shall be set to "application/zip" and the payload body shall contain a ZIP archive which includes: - a copy of the manifest file of the VNF package - a copy of the related individual certificate file.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | No Content |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 404 |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 405 |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | Response 406 |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 409</a></p> |
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 416</a></p> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 500</a></p> |

| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 503 |

### Response 400

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



| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string        |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
|---------------------------------|---|--------------|
| <b>title</b><br><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       |
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages/{vnfPkgId}/package\_content

### Description

The GET method fetches the content of a VNF package identified by the VNF package identifier allocated by the NFVO. The content of the package is provided as onboarded, i.e. depending on the security option used, the CSAR or the CSAR wrapped in a ZIP archive together with an external

signature is returned, as defined in clause 5.1 of ETSI GS NFV-SOL 004 [5]. NOTE: Information about the applicable security option can be obtained by evaluating the "packageSecurityOption" attribute in the "VnfPkgInfo" structure. This method shall follow the provisions specified in the Tables 9.4.5.3.2-1 and 9.4.5.3.2-2 for URI query parameters, request and response data structures, and response codes.

## Parameters

| Type   | Name                                    | Description   | Schema                    |
|--------|---|---|---------------------------|
| Header | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response.   | enum<br>(application/zip) |
| Header | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.  | string                    |
| Header | <b>Range</b><br><i>optional</i>         | The request may contain a "Range" HTTP header to obtain single range of bytes from the VNF package file. This can be used to continue an aborted transmission. If the NFVO does not support range requests, it should return the whole file with a 200 OK response instead. | string                    |
| Header | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.  | string                    |
| Path   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the on-boarded VNF package. The identifier is allocated by the NFVO.  | string                    |

## Responses

| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 200       | <p>200 OK Shall be returned when the whole content of the VNF package file has been read successfully. The response body shall include a copy of the VNF package file. The "Content-Type" HTTP header shall be set according to the type of the file, i.e. to "application/zip" for a VNF Package as defined in ETSI GS NFV-SOL 004.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | No Content   |
| 206       | <p>206 PARTIAL CONTENT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>Content-Range</b> (string) : The Content-Range response HTTP header indicates where in a full body message a partial message belongs.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | Response 206 |



| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 409</a></p> |
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 416</a></p> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 500</a></p> |

| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 503 |

### Response 206

| Name                               | Description   | Schema       |
|------------------------------------|---|--------------|
| <b>detail</b><br><i>required</i>   | A human-readable explanation specific to this occurrence of the problem.  | string       |
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
|--------------------------------|--|--------------|
| <b>type</b><br><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 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| Name                               | Description   | Schema       |
|------------------------------------|---|--------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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) |

## PUT /vnf\_packages/{vnfPkgId}/package\_content

### Description

The PUT method uploads the content of a VNF package. This method shall follow the provisions specified in the Tables 9.4.5.3.3-1 and 9.4.5.3.3-2 for URI query parameters, request and response data structures, and response codes. Upon start of the upload of the package, the NFVO shall set the "onboardingState" attribute in the "VnfPkgInfo" structure to "UPLOADING". Upon successful upload of the package, if the package references external artifacts, the NFVO shall obtain the external artifacts. Subsequently, upon success, the NFVO shall set that attribute to "PROCESSING" and shall process the package, which shall include checking package consistency. Upon successful processing, the NFVO shall set the "onboardingState" attribute to "ONBOARDED", the "operationalState" attribute to "ENABLED", and the "usageState" attribute to "NOT\_IN\_USE". In addition, the NFVO shall set the value of the attributes in the "VnfPkgInfo" that are copied from the VNFD (refer to clause 9.5.2.5). If an error occurs during uploading the package, downloading the external artifacts or processing the package, the NFVO shall set the "onboardingState" attribute to "ERROR" and shall populate the "onboardingFailureDetails" attribute in "VnfPkgInfo".

## Parameters

| Type     | Name                                    | Description   | Schema                    |
|----------|---|---|---------------------------|
| Header   | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response.   | enum<br>(application/zip) |
| Header   | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235.  | string                    |
| Header   | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.  | string                    |
| Path     | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the on-boarded VNF package. The identifier is allocated by the NFVO.  | string                    |
| FormData | <b>file</b><br><i>optional</i>          | The payload body contains a ZIP file that represents the VNF package. The "Content-Type" HTTP header shall be set according to the type of the file, i.e. to "application/zip" for a VNF Package as defined in ETSI GS NFV-SOL 004. | file                      |

## Responses

| HTTP Code | Description   | Schema     |
|-----------|---|------------|
| 202       | <p>202 Accepted Shall be returned when the VNF package has been accepted for uploading, but the processing has not been completed. It is expected to take some time for processing. The response body shall be empty. See note.</p> <p><b>Headers :</b><br/> <b>Version</b> (string) : Version of the API used in the response.</p> | No Content |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |



| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | Response 409 |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 500 |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | Response 503 |

### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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



| Name                               | Description   | Schema       |
|------------------------------------|---|--------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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) |

## Consumes

- `multipart/form-data`

## POST

**/vnf\_packages/{vnfPkgId}/package\_content/upload\_from\_uri**

### Description

The POST method provides the information for the NFVO to get the content of a VNF package. This method shall follow the provisions specified in the Tables 9.4.6.3.1-1 and 9.4.6.3.1-2 for URI query parameters, request and response data structures, and response codes. Upon start of obtaining the package, the NFVO shall set the "onboardingState" attribute in the "VnfPkgInfo" structure to "UPLOADING". Upon successfully obtaining the package, if the package references external artifacts, the NFVO shall obtain the external artifacts. Subsequently, upon success, the NFVO shall set that attribute to "PROCESSING" and shall process the package, which shall include checking package consistency. Upon successful processing, the NFVO shall set the "onboardingState" attribute to "ONBOARDED", the "operationalState" attribute to "ENABLED", and the "usageState" attribute to

"NOT\_IN\_USE". In addition, the NFVO shall set the value of the attributes in the "VnfPkgInfo" that are copied from the VNFD (refer to clause 9.5.2.5). If an error occurs during obtaining the package, downloading the external artifacts or processing the package, the NFVO shall set the "onboardingState" attribute to "ERROR" and shall populate the "onboardingFailureDetails" attribute in "VnfPkgInfo".

## Parameters

| Type   | Name                                    | Description  | Schema               |
|--------|---|--|----------------------|
| Header | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response. Reference: IETF RFC 7231   | string               |
| Header | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235  | string               |
| Header | <b>Version</b><br><i>required</i>       | Version of the API requested to use when responding to this request.   | string               |
| Path   | <b>vnfPkgId</b><br><i>required</i>      | Identifier of the VNF package. The identifier is allocated by the NFVO.  | string               |
| Body   | <b>body</b><br><i>required</i>          | The payload body contains the address information based on which the NFVO can obtain the content of the VNF package. | <a href="#">body</a> |

### body

| Name  | Description   | Schema  |
|---|---|---|
| <b>addressInformation</b><br><i>required</i>            | String formatted according to IETF RFC 3986.  | string (uri)                                  |
| <b>authType</b><br><i>optional</i>                      | Defines the type of authentication / authorization for downloading the VNF package. Permitted values: - BASIC: Only the "username" and "password" attributes shall be present. - OAUTH2_CLIENT_CREDENTIALS: Only the "paramsOauth2ClientCredentials" attribute shall be present. This attribute shall not be present if no credentials are provided for the artifact. | enum (BASIC, OAUTH2_CLIENT_CREDENTIALS)       |
| <b>paramsOauth2ClientCredentials</b><br><i>optional</i> | Parameters for authentication/authorization using OAuth 2.0.  | <a href="#">paramsOauth2ClientCredentials</a> |

| Name                               | Description  | Schema |
|------------------------------------|--|--------|
| <b>password</b><br><i>optional</i> | Password to be used for authentication. Shall not be present in response bodies. | string |
| <b>username</b><br><i>optional</i> | User name to be used for authentication.   | string |

### paramsOauth2ClientCredentials

| Name                                     | Description   | Schema       |
|--|---|--------------|
| <b>clientId</b><br><i>required</i>       | Client identifier to be used in the access token request of the OAuth 2.0 client credentials grant type.  | string       |
| <b>clientPassword</b><br><i>required</i> | Client password to be used in the access token request of the OAuth 2.0 client credentials grant type. Shall not be present in response bodies. | string       |
| <b>tokenEndpoint</b><br><i>required</i>  | String formatted according to IETF RFC 3986.  | string (uri) |

### Responses

| HTTP Code | Description  | Schema     |
|-----------|--|------------|
| 202       | <p>202 Accepted The information about the VNF package has been received successfully, but the on-boarding has not been completed. It is expected to take some time for processing. The response body shall be empty.</p> <p><b>Headers :</b><br/> <b>Version</b> (string) : Version of the API used in the response.</p> | No Content |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema       |
|-----------|--|--------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | Response 409 |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 500 |
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>                        | Response 503 |

### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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



| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| Name                               | Description   | Schema       |
|------------------------------------|---|--------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI) |
| <b>status</b><br><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      |
| <b>title</b><br><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       |
| <b>type</b><br><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\_packages/{vnfPkgId}/vnfd

### Description

The GET method reads the content of the VNFD within a VNF package. The VNFD is implemented as a collection of one or more files. A ZIP archive embedding these files shall be returned when reading this resource. The default format of the ZIP archive shall comply with the CSAR format as specified in ETSI GS NFV-SOL 004 where only the files representing the VNFD and information needed to navigate the ZIP archive and to identify the file that is the entry point for parsing the VNFD and (if requested) further security information are included, and software images as well as other artifacts referenced from the YAML files are excluded. This means that the structure of the ZIP archive shall correspond to the directory structure used in the VNF package and that the archive shall contain the following files from the package: - TOSCA.meta (if available in the package). - The main TOSCA definitions YAML file (either as referenced from TOSCA.meta or available as a file with the extension ".yml" or ".yaml" from the root of the archive). - Every component of the VNFD referenced (recursively) from the main TOSCA definitions YAML file. NOTE 1: For a VNFD based on TOSCA, it includes all the imported type definition files as indicated in the top level service template and in any of the lower level service template if it has any as described in ETSI GS NFV-SOL 001. NOTE 2: For a VNFD based on YANG, it includes the file as indicated by the "yang\_definitions" keyname in the metadata section of the main yaml file as described in ETSI GS

NFV-SOL 004. - The related security information, if the "include\_signatures" URI parameter is provided, as follows: - the manifest file; - the singleton certificate file in the root of the VNF package (if available in the package); - the signing certificates of the individual files included in the ZIP archive (if available in the package); - the signatures of the individual files (if available in the package). Tree examples are provided below. NOTE 3: These examples do not show the security related files. EXAMPLE 1: Assuming a request is sent for the following VNF package (as described in clause A.1 in ETSI GS NFV-SOL 004): !—TOSCA-Metadata !—TOSCA.meta (metadata for navigating the ZIP file) !—Definitions !— MRF.yaml (main VNFD file) !— OtherTemplates (e.g. type definitions referenced by the main VNFD file)

!—Files !— ChangeLog.txt !— image(s) !— other artifacts

!—Tests !— file(s)

!—Licenses !— file(s)

!—Scripts !— install.sh !— MRF.mf The NFVO will return a ZIP file of the following format:  
!—TOSCA-Metadata !—TOSCA.meta

!—Definitions !— MRF.yaml !— OtherTemplates

EXAMPLE 2: Assuming a request is sent for the following VNF package (a VNF package without a TOSCA Metadata directory, as described in clause A.2 in ETSI GS NFV-SOL 004): !—MRF.yaml (main VNFD file) !—MRF.mf !—ChangeLog.txt !—Tests !— file(s)

!—Licenses !— file(s)

!—Artifacts !— install.sh !— start.yang

The NFVO will return a ZIP file of the following format: !—MRF.yaml EXAMPLE 3: Assuming a request is sent for the following VNF package (a VNF package with the YANG VNFD without a TOSCA-Metadata directory, as described in clause A.3 in ETSI GS NFV SOL 004): !—CompanyVNFD.yaml !—CompanyVNFD.xml !—CompanyVNFD.mf !—ChangeLog.txt !—Files !—Instance Data Files !—start.xml

!—Licenses !—Scripts !—install.sh

The NFVO will return a ZIP file of the following format: !—CompanyVNFD.yaml !—CompanyVNFD.xml (indicated in the yang\_definitions metadata in CompanyVNFD.yaml)

## Parameters

| Type   | Name                                    | Description  | Schema                             |
|--------|---|--|------------------------------------|
| Header | <b>Accept</b><br><i>required</i>        | Content-Types that are acceptable for the response.                | enum (text/plain, application/zip) |
| Header | <b>Authorization</b><br><i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235. | string                             |

| Type   | Name   | Description   | Schema |
|--------|--|---|--------|
| Header | <b>Version</b><br><i>required</i>            | Version of the API requested to use when responding to this request.  | string |
| Path   | <b>vnfPkgId</b><br><i>required</i>           | Identifier of the on-boarded VNF package. The identifier is allocated by the NFVO. This identifier can be retrieved from the "vnfPkgId" attribute in the VnfPackageOnboardingNotification or VnfPackageChangeNotification.    | string |
| Query  | <b>include_signatures</b><br><i>optional</i> | If this parameter is provided, the NFVO shall include in the ZIP archive the security information as specified above. This URI query parameter is a flag, i.e. it shall have no value. The NFVO shall support this parameter. | string |

## Responses

| HTTP Code | Description  | Schema     |
|-----------|--|------------|
| 200       | <p>200 OK Shall be returned when the content of the VNFD has been read successfully. The payload body shall contain a copy of the file representing the VNFD or a ZIP file that contains the file or multiple files representing the VNFD, as specified above. The "Content-Type" HTTP header shall be set according to the format of the returned file, i.e. to "text/plain" for a YAML file or to "application/zip" for a ZIP file.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | No Content |



| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 400       | <p>400 BAD REQUEST 400 code can be returned in the following specified cases, the specific cause has to be proper specified in the "ProblemDetails" structure to be returned. If the request is malformed or syntactically incorrect (e.g. if the request URI contains incorrect query parameters or the payload body contains a syntactically incorrect data structure), 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 response to a GET request which queries a container resource would be so big that the performance of the API producer is adversely affected, and the API producer does not support paging for the affected resource, it 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 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. 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. The use of this HTTP error response code described above is applicable to the use of the OAuth 2.0 for the authorization of API requests and notifications, as defined in clauses 4.5.3.3 and 4.5.3.4.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 400</a></p> |

| HTTP Code | Description   | Schema                              |
|-----------|---|-------------------------------------|
| 401       | <p>401 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 401</a></p> |
| 403       | <p>403 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 403</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 404       | <p>404 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. This response code is not appropriate in case the resource addressed by the URI is a container resource which is designed to contain child resources, but does not contain any child resource at the time the request is received. For a GET request to an existing empty container resource, a typical response contains a 200 OK response code and a payload body with an empty array.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 404</a></p> |
| 405       | <p>405 METHOD NOT ALLOWED If a particular HTTP method is not supported for a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 405</a></p> |
| 406       | <p>406 NOT ACCEPTABLE If the "Accept" 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.</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 406</a></p> |

| HTTP Code | Description  | Schema                              |
|-----------|--|-------------------------------------|
| 409       | <p>409 CONFLICT</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>   | <p><a href="#">Response 409</a></p> |
| 416       | <p>416 RANGE NOT SATISFIABLE</p> <p><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p>  | <p><a href="#">Response 416</a></p> |
| 500       | <p>500 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | <p><a href="#">Response 500</a></p> |

| HTTP Code | Description   | Schema       |
|-----------|---|--------------|
| 503       | <p>503 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 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><b>Headers :</b></p> <p><b>Content-Type</b> (string) : The MIME type of the body of the response.</p> <p><b>WWW-Authenticate</b> (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><b>Version</b> (string) : Version of the API used in the response.</p> | Response 503 |

### Response 400

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                        | <b>Description</b>  | <b>Schema</b> |
|------------------------------------|---|---------------|
| <b>instance</b><br><i>optional</i> | A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.   | string (URI)  |
| <b>status</b><br><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       |
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                     | <b>Description</b>  | <b>Schema</b> |
|---------------------------------|---|---------------|
| <b>title</b><br><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        |
| <b>type</b><br><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

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

| <b>Name</b>                    | <b>Description</b>   | <b>Schema</b> |
|--------------------------------|--|---------------|
| <b>type</b><br><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

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