## SOL003 - Virtualised Resources Quota Available Notification Notification interface

## **Overview**

SOL003 - Virtualised Resources Quota Available Notification Notificatoion interface

**IMPORTANT** 

Please note that this file might be not aligned to the current version of the ETSI Group Specification it refers to. In case of discrepancies the published ETSI Group Specification takes precedence.

In clause 4.3.2 of ETSI GS NFV-SOL 003 v2.4.1, an attribute-based filtering mechanism is defined. This mechanism is currently not included in the corresponding OpenAPI design for this GS version. Changes to the attribute-based filtering mechanism are being considered in v2.5.1 of this GS for inclusion in the corresponding future ETSI NFV OpenAPI design. Please report bugs to https://forge.etsi.org/bugzilla/buglist.cgi?component=Nfv-Openapis&list\_id=61&product=NFV&resolution=

#### **Version information**

Version: 1.2.1-impl:etsi.org:ETSI\_NFV\_OpenAPI:1

## License information

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Terms of service: null

#### **URI scheme**

BasePath:/vrqan/v1 Schemes: HTTPS

#### Consumes

application/json

#### **Produces**

• application/json

#### **External Docs**

Description: ETSI GS NFV-SOL 003 V2.8.1

URL: https://www.etsi.org/deliver/etsi\_gs/NFV-SOL/001\_099/003/02.08.01\_60/gs\_NFV-

SOL003v020801p.pdf

## **Paths**

## POST /URI-is-provided-by-the-client-when-creating-the-subscription-VrQuotaAvailNotification

#### **Description**

The POST method delivers a notification from the API producer to an API consumer. The API consumer shall have previously created an "Individual subscription" resource with a matching filter. This method shall follow the provisions specified in the tables 11.4.4.3.1-1 and 11.4.4.3.1-2 for URI query parameters, request and response data structures, and response codes.

#### **Parameters**

Туре	Name	Description	Schema
Header	<b>Authorization</b> optional	The authorization token for the request. Reference: IETF RFC 7235	string
Header	Content-Type required	The Content-Type header shall be set to "application/merge-patch+json" according to IETF RFC 7396.	string
Header	<b>Version</b> required	Version of the API requested to use when responding to this request.	string
Body	VrQuotaAvail Notification required	A notification related to the availability of the virtualised resources quota.	VrQuotaAvailNotific ation

#### **VrQuotaAvailNotification**

Name	Description	Schema
_links required	This type represents the links to resources that a notification of type "VrQuotaAvailNotification" can contain. It shall comply with the provisions defined in table 11.5.3.3-1.	linko

Name	Description	Schema
<b>id</b> required	An identifier with the intention of being globally unique.	string
notificationTy pe required	A string defined in IETF RFC 8259.	string
resourceGrou pId required	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance.	string
resourceProvi derId optional	An identifier with the intention of being globally unique.	string
subscriptionI d required	An identifier with the intention of being globally unique.	string
timeStamp required	Date-time stamp. Representation: String formatted according to IETF RFC 3339.	string (date-time)
vimConnectio nInfo optional	This type represents parameters to connect to a VIM for managing the resources of a VNF instance. This structure is used to convey VIM-related parameters over the Or-Vnfm interface. Additional parameters for a VIM may be configured into the VNFM by means outside the scope of the present document, and bound to the identifier of that VIM.	vimConnectionInfo

#### \_links

Name	Description	Schema
<b>subscription</b> required	This type represents a link to a resource in a notification, using an absolute or relative URI.	subscription

## subscription

Name	Description	Schema
<b>href</b> required	String formatted according to IETF RFC 3986.	string

#### vim Connection Info

Name	Description	Schema
accessInfo optional	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 keyvalue pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 8259. In the following example, a list of key-value pairs with four keys ("aString", "aNumber", "anArray" and "anObject") is provided to illustrate that the values associated with different keys can be of different type.	object
<b>extra</b> optional	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 keyvalue pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 8259. In the following example, a list of key-value pairs with four keys ("aString", "aNumber", "anArray" and "anObject") is provided to illustrate that the values associated with different keys can be of different type.	
<b>id</b> required	An identifier with the intention of being globally unique.	string
interfaceInfo optional	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 keyvalue pairs is represented as an object. It shall comply with the provisions defined in clause 4 of IETF RFC 8259. In the following example, a list of key-value pairs with four keys ("aString", "aNumber", "anArray" and "anObject") is provided to illustrate that the values associated with different keys can be of different type.	object
vimId optional	An identifier with the intention of being globally unique.	string
vimType required	Discriminator for the different types of the VIM information. The value of this attribute determines the structure of the "interfaceInfo" and "accessInfo" attributes, based on the type of the VIM. The set of permitted values is expected to change over time as new types or versions of VIMs become available. The ETSI NFV registry of VIM-related information provides access to information about VimConnectionInfo definitions for various VIM types. The structure of the registry is defined in Annex C of SOL003.	

HTTP Code	Description	Schema
204	204 NO CONTENT Shall be returned when the notification has been delivered successfully. The response body shall be empty.  Headers:  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	No Content

HTTP Code	Description	Schema
400	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 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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.	

HTTP Code	Description	Schema
401	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 401
403	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 403
405	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.  Headers: Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 405

HTTP Code	Description	Schema
406	406 NOT ACCEPTABLE If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 406
500	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	
503	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 503

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

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

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

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

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

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

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

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

# GET /URI-is-provided-by-the-client-when-creating-the-subscription-VrQuotaAvailNotification

#### **Description**

The GET method allows the API producer to test the notification endpoint that is provided by the API consumer, e.g. during subscription. This method shall follow the provisions specified in the tables 7.4.6.3.2-1 and 7.4.6.3.2-2 for URI query parameters, request and response data structures, and response codes.

#### **Parameters**

Type	Name	Description	Schema
Header	Authorization optional	The authorization token for the request. Reference: IETF RFC 7235	string
Header	<b>Version</b> required	Version of the API requested to use when responding to this request.	string

HTTP Code	Description	Schema
204	204 NO CONTENT Shall be returned to indicate that the notification endpoint has been tested successfully. The response body shall be empty.  Headers:  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	No Content

HTTP Code	Description	Schema
400	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid auth	Response 400

HTTP Code	Description	Schema
401	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 401
403	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 403
405	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.  Headers: Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 405

HTTP Code	Description	Schema
406	406 NOT ACCEPTABLE If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 406
500	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 500
503	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 503

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

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

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

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

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

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

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

Name	Description	Schema
<b>detail</b> required	A human-readable explanation specific to this occurrence of the problem.	string
instance optional	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	
<b>status</b> required	The HTTP status code for this occurrence of the problem. The HTTP status code ([RFC7231], Section 6) generated by the origin server for this occurrence of the problem.	integer
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Name	Description	Schema
<b>type</b> optional	A URI reference according to IETF RFC 3986 [5] that identifies the problem type. It is encouraged that the URI provides human-readable documentation for the problem (e.g. using HTML) when dereferenced. When this member is not present, its value is assumed to be "about:blank".	

## **Retrieve API version information**

GET /api\_versions

#### **Description**

The GET method reads API version information. This method shall follow the provisions specified in table 4.6.3.3.3.2-1 for request and response data structures, and response codes. URI query parameters are not supported.

#### **Parameters**

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

HTTP Code	Description	Schema
200	200 OK API version information was read successfully. The response body shall contain 4.4 API version information, as defined in clause 4.4.1.13.  Headers: Content-Type (string): The MIME type of the body of the response. Version (string): The used API version.	

HTTP Code	Description	Schema
400	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid autho	

HTTP Code	Description	Schema
401	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 401
403	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 403

HTTP Code	Description	Schema
404	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	
405	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 405
406	406 NOT ACCEPTABLE If the "Accept" HTTP header does not contain at least one name of a content type that is acceptable to the API producer, the API producer shall respond with this response code. The "ProblemDetails" structure may be omitted.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 406

HTTP Code	Description	Schema
413	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 413
414	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	
416	416 Range Not Satisfiable  Headers: Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 416

HTTP Code	Description	Schema
422	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 422
429	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	

HTTP Code	Description	Schema
500	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	
503	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 503
504	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.  Headers:  Content-Type (string): The MIME type of the body of the response.  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  Version (string): Version of the API used in the response.	Response 504

Name	Description	Schema
apiVersions required	Version(s) supported for the API signaled by the uriPrefix attribute.	< apiVersions > array
<b>uriPrefix</b> required	Specifies the URI prefix for the API, in the following form {apiRoot}/{apiName}/{apiMajorVersion}/.	string

## apiVersions

Name	Description	Schema
<b>isDeprecated</b> optional	If such information is available, this attribute indicates whether use of the version signaled by the version attribute is deprecated (true) or not (false). A deprecated version is still supported by the API producer but is recommended not to be used any longer. When a version is no longer supported, it does not appear in the response body.	boolean
retirementDat e optional	Date-time stamp. Representation: String formatted according to IETF RFC 3339.	string (date-time)
<b>version</b> required	Identifies a supported version. The value of the version attribute shall be a version identifier as specified in clause 9.1 (SOL013).	string

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

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

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

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<b>detail</b> required	A human-readable explanation specific to this occurrence of the problem.	string

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