# SOL011 - NS Fault Management Interface

## **Overview**

SOL011 - NS Fault 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/SOL011/-/issues

## **Version information**

Version: 1.1.0-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: /nsfm/v1 Schemes: HTTP, HTTPS

### **Consumes**

• application/json

## **Produces**

• application/json

## **External Docs**

Description: ETSI GS NFV-SOL 011 V4.4.1

URL: https://www.etsi.org/deliver/etsi\_gs/NFV-SOL/001\_099/011/04.04.01\_60/gs\_NFV-

SOL011v040401p.pdf

## **Paths**

## Query alarms related to NS instances.

GET /alarms

## **Description**

Get Alarm List. The client can use this method to retrieve information about the alarm list.

#### **Parameters**

Туре	Name	Description	Schema
Header	<b>Accept</b> required	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
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
Query	<b>filter</b> optional	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. The following attribute names shall be supported by the NFVO in the filter expression:  - id - nsInstanceId - rootCauseFaultyComponent.faultyNestedNsInstanceId - rootCauseFaultyComponent.faultyNsVirtualLink InstanceId - rootCauseFaultyComponent.faultyVnfInstanceId - rootCauseFaultyResource.faultyResourceType - eventType - perceivedSeverity - probableCause	string
Query	nextpage_opa que_marker optional	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.	string

HTTP Code	Description	Schema
200	200 OK Shall be returned when information about zero or more alarms has been queried successfully. The response body shall contain the list of related alarms. 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 clauses 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.  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.  Link (string): Reference to other resources. Used for paging in the present document, see clause 4.7.2.1.	< Response 200 > array

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.	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" 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.	

Name	Description	Schema
_links required	Links for this resource.	_links
ackState required	Acknowledgment state of the alarm. Permitted values: UNACKNOWLEDGED ACKNOWLEDGED	enum (UNACKNOWLEDGE D, ACKNOWLEDGED)
correlatedAla rmIds optional	List of identifiers of other alarms correlated to this fault.	< string > array
eventType required	The enumeration EventType represents those types of events that trigger an alarm COMMUNICATIONS_ALARM: An alarm of this type is associated with the procedure and/or process required conveying information from one point to another (ITU-T Recommendation X.733) PROCESSING_ERROR_ALARM: An alarm of this type is associated with a software or processing fault (ITU-T Recommendation X.733) ENVIRONMENTAL_ALARM: An alarm of this type is associated with a condition related to an enclosure in which the equipment resides (ITU-T Recommendation X.733) QOS_ALARM: An alarm of this type is associated with degradation in the quality of a service (ITU-T Recommendation X.733) EQUIPMENT_ALARM: An alarm of this type is associated with an equipment fault (ITU-T Recommendation X.733).	enum (COMMUNICATIONS _ALARM, PROCESSING_ERROR _ALARM, ENVIRONMENTAL_ ALARM, QOS_ALARM, EQUIPMENT_ALAR M)
<b>faultDetails</b> optional	Provides additional information about the fault	< string > array
faultType optional	Additional information to clarify the type of the fault.	string
<b>id</b> required	An identifier with the intention of being globally unique.	string
<b>isRootCause</b> required	Attribute indicating if this fault is the root for other correlated alarms. If TRUE, then the alarms listed in the attribute CorrelatedAlarmId are caused by this fault.	boolean
managedObje ctId required	An identifier with the intention of being globally unique.	string

Name	Description	Schema
perceivedSeve rity required	Indicates the relative level of urgency for operator attention. * CRITICAL: The Critical severity level indicates that a service affecting condition has occurred and an immediate corrective action is required. Such a severity can be reported, for example, when a managed object becomes totally out of service and its capability needs to be restored (ITU-T Recommendation X.733). * MAJOR: The Major severity level indicates that a service affecting condition has developed and an urgent corrective action is required. Such a severity can be reported, for example, when there is a severe degradation in the capability of the managed object and its full capability needs to be restored (ITU-T Recommendation X.733). * MINOR: The Minor severity level indicates the existence of a non-service affecting fault condition and that corrective action should be taken in order to prevent a more serious (for example, service affecting) fault. Such a severity can be reported, for example, when the detected alarm condition is not currently degrading the capacity of the managed object (ITU-T Recommendation X.733). * WARNING: The Warning severity level indicates the detection of a potential or impending service affecting fault, before any significant effects have been felt. Action should be taken to further diagnose (if necessary) and correct the problem in order to prevent it from becoming a more serious service affecting fault (ITU-T Recommendation X.733). * INDETERMINATE: The Indeterminate severity level indicates that the severity level cannot be determined (ITU-T Recommendation X.733). * CLEARED: The Cleared severity level indicates the clearing of one or more previously reported alarms. This alarm clears all alarms for this managed object that have the same Alarm type, Probable cause and Specific problems (if given) (ITU-T Recommendation X.733).	MAJOR, MINOR, WARNING, INDETERMINATE,
probableCaus e required	Information about the probable cause of the fault.	string
rootCauseFau ltyComponent required	This type represents the faulty component that has a negative impact on an NS. It shall comply with the provisions defined in Table 8.5.3.4-1.	rootCauseFaultyCom ponent
rootCauseFau ltyResource optional	This type represents the faulty virtual resources that have a negative impact on a NS.	rootCauseFaultyRes ource

#### \_links

Name	Description	Schema
objectInstanc e optional	This type represents a link to a resource.	objectInstance
self required	This type represents a link to a resource.	self

### objectInstance

Name	Description	Schema
<b>href</b> required	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> required	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)

## root Cause Faulty Component

Name	Description	Schema
faultyNestedN sInstanceId optional	An identifier with the intention of being globally unique.	string
faultyNsVirtu alLinkInstanc eId optional	An identifier with the intention of being globally unique.	string
faultyResourc eType optional	An identifier with the intention of being globally unique.	string

### root Cause Faulty Resource

Name	Description	Schema
faultyResourc e required	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance or by an NS instance. Information about the resource is available from the VIM.	faultyResource
faultyResourc eType required	The enumeration FaultyResourceType represents those types of faulty resource. Acceptable values are: - COMPUTE - Virtual compute resource STORAGE - Virtual storage resource NETWORK - Virtual network resource.	enum (COMPUTE, STORAGE, NETWORK)

#### faulty Resource

Name	Description	Schema
resourceId required	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance. Representation: string of variable length.	string
resourceProvi derId optional	An identifier with the intention of being globally unique.	string
vimId optional	An identifier with the intention of being globally unique.	string
vimLevelReso urceType optional	Type of the resource in the scope of the VIM or the resource provider. The value set of the "vimLevelResourceType" attribute is within the scope of the VIM or the resource provider and can be used as information that complements the ResourceHandle.	string

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.	string (URI)

Name	Description	Schema
<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".	

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

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<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>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
<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".	

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".	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
<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".	string (URI)

## Read individual alarm.

GET /alarms/{alarmId}

## Description

The client can use this method to read an individual alarm.

## **Parameters**

Type	Name	Description	Schema
Header	Accept required	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization optional	The authorization token for the request. Reference: IETF RFC 7235.	string
Header	Content-Type required	The MIME type of the body of the request. Reference: IETF RFC 7231	string
Header	<b>Version</b> required	Version of the API requested to use when responding to this request.	string
Path	<b>alarmId</b> required	Identifier of the alarm. This identifier can be retrieved from the "id" attribute of the "alarm" attribute in the AlarmNotification or AlarmClearedNotification. It can also be retrieved from the "id" attribute of the applicable array element in the payload body of the response to a GET request to the "Alarms" resource.	string

HTTP Code	Description	Schema
200	200 OK Shall be returned when information about an individual alarm has been read successfully. The response body shall contain a representation of the individual alarm.  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 200

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" 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
_links required	Links for this resource.	_links
<b>ackState</b> required	Acknowledgment state of the alarm. Permitted values: UNACKNOWLEDGED ACKNOWLEDGED	enum (UNACKNOWLEDGE D, ACKNOWLEDGED)
correlatedAla rmIds optional	List of identifiers of other alarms correlated to this fault.	< string > array
eventType required	The enumeration EventType represents those types of events that trigger an alarm COMMUNICATIONS_ALARM: An alarm of this type is associated with the procedure and/or process required conveying information from one point to another (ITU-T Recommendation X.733) PROCESSING_ERROR_ALARM: An alarm of this type is associated with a software or processing fault (ITU-T Recommendation X.733) ENVIRONMENTAL_ALARM: An alarm of this type is associated with a condition related to an enclosure in which the equipment resides (ITU-T Recommendation X.733) QOS_ALARM: An alarm of this type is associated with degradation in the quality of a service (ITU-T Recommendation X.733) EQUIPMENT_ALARM: An alarm of this type is associated with an equipment fault (ITU-T Recommendation X.733).	enum (COMMUNICATIONS _ALARM, PROCESSING_ERROR _ALARM, ENVIRONMENTAL_ ALARM, QOS_ALARM, EQUIPMENT_ALAR M)
<b>faultDetails</b> optional	Provides additional information about the fault	< string > array
<b>faultType</b> optional	Additional information to clarify the type of the fault.	string
<b>id</b> required	An identifier with the intention of being globally unique.	string
<b>isRootCause</b> required	Attribute indicating if this fault is the root for other correlated alarms. If TRUE, then the alarms listed in the attribute CorrelatedAlarmId are caused by this fault.	boolean
managedObje ctId required	An identifier with the intention of being globally unique.	string

Name	Description	Schema
perceivedSeve rity required	Indicates the relative level of urgency for operator attention. * CRITICAL: The Critical severity level indicates that a service affecting condition has occurred and an immediate corrective action is required. Such a severity can be reported, for example, when a managed object becomes totally out of service and its capability needs to be restored (ITU-T Recommendation X.733). * MAJOR: The Major severity level indicates that a service affecting condition has developed and an urgent corrective action is required. Such a severity can be reported, for example, when there is a severe degradation in the capability of the managed object and its full capability needs to be restored (ITU-T Recommendation X.733). * MINOR: The Minor severity level indicates the existence of a non-service affecting fault condition and that corrective action should be taken in order to prevent a more serious (for example, service affecting) fault. Such a severity can be reported, for example, when the detected alarm condition is not currently degrading the capacity of the managed object (ITU-T Recommendation X.733). * WARNING: The Warning severity level indicates the detection of a potential or impending service affecting fault, before any significant effects have been felt. Action should be taken to further diagnose (if necessary) and correct the problem in order to prevent it from becoming a more serious service affecting fault (ITU-T Recommendation X.733). * INDETERMINATE: The Indeterminate severity level indicates that the severity level cannot be determined (ITU-T Recommendation X.733). * CLEARED: The Cleared severity level indicates the clearing of one or more previously reported alarms. This alarm clears all alarms for this managed object that have the same Alarm type, Probable cause and Specific problems (if given) (ITU-T Recommendation X.733).	MAJOR, MINOR, WARNING, INDETERMINATE,
probableCaus e required	Information about the probable cause of the fault.	string
rootCauseFau ltyComponent required	This type represents the faulty component that has a negative impact on an NS. It shall comply with the provisions defined in Table 8.5.3.4-1.	rootCauseFaultyCom ponent
rootCauseFau ltyResource optional	This type represents the faulty virtual resources that have a negative impact on a NS.	rootCauseFaultyRes ource

#### \_links

Name	Description	Schema
objectInstanc e optional	This type represents a link to a resource.	objectInstance
<b>self</b> required	This type represents a link to a resource.	self

## objectInstance

Name	Description	Schema
<b>href</b> required	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.	

#### self

Name	Description	Schema
<b>href</b> required	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.	

### ${\bf root Cause Faulty Component}$

Name	Description	Schema
faultyNestedN sInstanceId optional	An identifier with the intention of being globally unique.	string
faultyNsVirtu alLinkInstanc eId optional	An identifier with the intention of being globally unique.	string
faultyResourc eType optional	An identifier with the intention of being globally unique.	string

### root Cause Faulty Resource

Name	Description	Schema
faultyResourc e required	This type represents the information that allows addressing a virtualised resource that is used by a VNF instance or by an NS instance. Information about the resource is available from the VIM.	faultyResource
faultyResourc eType required	The enumeration FaultyResourceType represents those types of faulty resource. Acceptable values are: - COMPUTE - Virtual compute resource STORAGE - Virtual storage resource NETWORK - Virtual network resource.	enum (COMPUTE, STORAGE, NETWORK)

#### faulty Resource

Name	Description	Schema
resourceId required	An identifier maintained by the VIM or other resource provider. It is expected to be unique within the VIM instance. Representation: string of variable length.	string
resourceProvi derId optional	An identifier with the intention of being globally unique.	string
vimId optional	An identifier with the intention of being globally unique.	string
vimLevelReso urceType optional	Type of the resource in the scope of the VIM or the resource provider. The value set of the "vimLevelResourceType" attribute is within the scope of the VIM or the resource provider and can be used as information that complements the ResourceHandle.	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.	string (URI)

Name	Description	Schema
<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
<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).	

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).	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
<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
<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).	
<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)

# Acknowledge individual alarm.

PATCH /alarms/{alarmId}

## Description

Acknowledge Alarm This method modifies an individual alarm resource.

## **Parameters**

Туре	Name	Description	Schema
Header	<b>Accept</b> required	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
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.	enum (application/merge- patch+json)
Header	<b>Version</b> required	Version of the API requested to use when responding to this request.	string
Path	<b>alarmId</b> required	Identifier of the alarm. This identifier can be retrieved from the "id" attribute of the "alarm" attribute in the AlarmNotification or AlarmClearedNotification. It can also be retrieved from the "id" attribute of the applicable array element in the payload body of the response to a GET request to the "Alarms" resource.	string
Body	<b>body</b> required	The parameter for the alarm modification, as defined in clause 8.5.2.8.	body

### body

Name	Description	Schema
ackState required	New value of the "ackState" attribute in "Alarm". Permitted values: - ACKNOWLEDGED	enum (ACKNOWLEDGED)

HTTP Code	Description	Schema
200	200 OK Shall be returned when the request has been accepted and completed. The response body shall contain attribute modifications for an 'Individual alarm' resource (see clause 8.5.2.4).  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.  Version (string): Version of the API used in the response.	Response 200

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" 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
409	409 CONFLICT 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 409
412	412 PRECONDITION FAILED Error: A precondition given in an HTTP request header is not fulfilled. Typically, this is due to an ETag mismatch, indicating that the resource was modified by another entity. The response body should contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.  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 412

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.	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.	

Name	Description	Schema
ackState required	New value of the "ackState" attribute in "Alarm". Permitted values: - ACKNOWLEDGED	enum (ACKNOWLEDGED)

Name	Description	Schema
	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).	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
<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".	

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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	
<b>instance</b> optional	A URI reference that identifies the specific occurrence of the problem. It may yield further information if dereferenced.	string (URI)	
<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).		
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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".	

# 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> optional	Version of the API requested to use when responding to this request.	string

HTTP Code	Description	Schema
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

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".	

# **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	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.	Response 200

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	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

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.	Response 404
406	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.  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.	Response 429

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.	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
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 signalled 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	The Boolean is a data type having two values (TRUE and FALSE).	boolean
version required	Identifies a supported version. The value of the version attribute shall be a version identifier as specified in clause 4.6.1.	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
<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).	

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
<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).	
<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
<b>instance</b> 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
<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
<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.	
<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
<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).	

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).	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.	
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

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)

# 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
Header	<b>Version</b> optional	Version of the API requested to use when responding to this request.	string

## Responses

HTTP Code	Description	Schema
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

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".	

# **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
Header	<b>Version</b> optional	Version of the API requested to use when responding to this request.	string

HTTP Code	Description	Schema
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.	

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.	
<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".	

# 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> optional	Version of the API requested to use when responding to this request.	string

### Responses

HTTP Code	Description	Schema
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

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).	
<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".	

# Subscribe to alarms related to NSs.

POST /subscriptions

### **Description**

The POST method creates a new subscription. This method shall follow the provisions specified in the Tables 8.4.4.3.1-1 and 8.4.4.3.1-2 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 shall exist as defined in clause 8.4.5. This method shall not trigger any notification. Creation of two subscription resources with the same callbackURI and the same filter can result in performance degradation and will provide duplicates of notifications to the OSS, and might make sense only in very rare use cases. Consequently, the NFVO may either allow creating a subscription resource if another subscription resource with the same filter and callbackUri already exists (in which case it shall return the "201 Created" response code), or may decide to not create a duplicate subscription resource (in which case it shall return a "303 See Other" response code referencing the existing subscription resource with the same filter and callbackUri).

#### **Parameters**

Type	Name	Description	Schema
Header	<b>Accept</b> required	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string

Туре	Name	Description	Schema
Header	<b>Authorization</b> optional	The authorization token for the request. Reference: IETF RFC 7235.	string
Header	<b>Content-Type</b> required	The MIME type of the body of the request. Reference: IETF RFC 7231	string
Header	<b>Version</b> required	Version of the API requested to use when responding to this request.	string
Body	<b>body</b> required	Details of the subscription to be created, as defined in clause 8.5.2.2.	body

# body

Name	Description	Schema
authenticatio n optional		authentication
<b>callbackUri</b> required	The URI of the endpoint to send the notification to.	string (url)
<b>filter</b> optional	This type represents a subscription filter related to notifications about NS faults. It shall comply with the provisions defined in Table 8.5.3.2-1. 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)	

## authentication

Name	Description	Schema
<b>authType</b> required	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_CR EDENTIALS, TLS_CERT) > array
paramsBasic optional	Parameters for authentication/authorization using BASIC. Shall be present if authType is "BASIC" and the contained information has not been provisioned out of band. Shall be absent otherwise.	paramsBasic
paramsOauth 2ClientCreden tials optional	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.	paramsOauth2Client Credentials

## paramsBasic

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

# params O auth 2 Client Credentials

Name	Description	Schema
<b>clientId</b> optional	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
clientPasswor d optional	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.	
tokenEndpoin t optional	String formatted according to IETF RFC 3986.	string (uri)

### filter

Name	Description	Schema
eventTypes optional	Match VNF alarms related to NSs with an event type listed in this attribute.	<pre>&lt; enum (COMMUNICATIONS _ALARM, PROCESSING_ERROR _ALARM, ENVIRONMENTAL_ ALARM, QOS_ALARM, EQUIPMENT_ALAR M) &gt; array</pre>
faultyResourc eTypes optional	Match alarms related to NSs with a faulty resource type listed in this attribute.	< enum (COMPUTE, STORAGE, NETWORK) > array

Name	Description	Schema
notificationTy pes optional	Match particular notification types. Permitted values: - AlarmNotification - AlarmClearedNotification - AlarmListRebuiltNotification.	< enum (AlarmNotification, AlarmClearedNotific ation, AlarmListRebuiltNot ification) > array
nsInstanceSu bscriptionFilt er optional	This type represents subscription filter criteria to match NS instances. NOTE 1: The attributes "nsdIds", "vnfdIds" and "pnfdIds" are alternatives to reference to NS instances that are created based on certain NSDs, or contain VNF instances that are based on certain VNFDs, or contain PNFs that are based on certain PNFDs in a filter. They should not be used together in the same filter instance, but one alternative should be chosen. NOTE 2: The attributes "nsInstanceIds" and "nsInstanceNames" are alternatives to reference to particular NS Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	•
perceivedSeve rities optional	Match VNF alarms with a perceived severity listed in this attribute.	<pre>&lt; enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) &gt; array</pre>
probableCaus es optional	Match VNF alarms with a probable cause listed in this attribute.	< string > array

# ns In stance Subscription Filter

Name	Description	Schema
nsInstanceIds optional	If present, match NS instances with an instance identifier listed in this attribute.	< string > array
nsInstanceNa mes optional	If present, match NS instances with a NS Instance Name listed in this attribute.	< string > array
nsdIds optional	If present, match NS instances that were created based on a NSD identified by one of the nsdId values listed in this attribute.	< string > array

Name	Description	Schema
pnfdIds optional	If present, match NS instances that contain PNFs that are represented by a PNFD identified by one of the pnfdId values listed in this attribute.	
vnfdIds optional	If present, match NS instances that contain VNF instances that were created based on a VNFD identified by one of the vnfdId values listed in this attribute.	

HTTP Code	Description	Schema
201	201 Created Shall be returned when the subscription has been created successfully. The response body shall contain a representation of the created subscription resource. The HTTP response shall include a "Location:" HTTP header that points to the created subscription resource.  Headers:  Content-Type (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.  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 201
303	303 SEE OTHER  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.	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" 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.	

Name	Description	Schema
_links required	Links for this resource.	_links
<b>callbackUri</b> required	The URI of the endpoint to send the notification to.	string (url)
<b>filter</b> optional	This type represents a subscription filter related to notifications about NS faults. It shall comply with the provisions defined in Table 8.5.3.2-1. 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)	
<b>id</b> required	An identifier with the intention of being globally unique.	string

# \_links

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

### self

Name	Description	Schema
<b>href</b> required	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
eventTypes optional	Match VNF alarms related to NSs with an event type listed in this attribute.	<pre>&lt; enum (COMMUNICATIONS _ALARM, PROCESSING_ERROR _ALARM, ENVIRONMENTAL_ ALARM, QOS_ALARM, EQUIPMENT_ALAR M) &gt; array</pre>
faultyResourc eTypes optional	Match alarms related to NSs with a faulty resource type listed in this attribute.	< enum (COMPUTE, STORAGE, NETWORK) > array
notificationTy pes optional	Match particular notification types. Permitted values: - AlarmNotification - AlarmClearedNotification - AlarmListRebuiltNotification.	< enum (AlarmNotification, AlarmClearedNotific ation, AlarmListRebuiltNot ification) > array
nsInstanceSu bscriptionFilt er optional	This type represents subscription filter criteria to match NS instances. NOTE 1: The attributes "nsdIds", "vnfdIds" and "pnfdIds" are alternatives to reference to NS instances that are created based on certain NSDs, or contain VNF instances that are based on certain VNFDs, or contain PNFs that are based on certain PNFDs in a filter. They should not be used together in the same filter instance, but one alternative should be chosen. NOTE 2: The attributes "nsInstanceIds" and "nsInstanceNames" are alternatives to reference to particular NS Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	_
perceivedSeve rities optional	Match VNF alarms with a perceived severity listed in this attribute.	<pre>&lt; enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) &gt; array</pre>
probableCaus es optional	Match VNF alarms with a probable cause listed in this attribute.	< string > array

# ns In stance Subscription Filter

Name	Description	Schema
nsInstanceIds optional	If present, match NS instances with an instance identifier listed in this attribute.	< string > array
nsInstanceNa mes optional	If present, match NS instances with a NS Instance Name listed in this attribute.	< string > array
nsdIds optional	If present, match NS instances that were created based on a NSD identified by one of the nsdId values listed in this attribute.	< string > array
pnfdIds optional	If present, match NS instances that contain PNFs that are represented by a PNFD identified by one of the pnfdId values listed in this attribute.	< string > array
vnfdIds optional	If present, match NS instances that contain VNF instances that were created based on a VNFD identified by one of the vnfdId values listed in this attribute.	< string > array

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).	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.	
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

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
<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).	
<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)

# Query multiple subscriptions.

GET /subscriptions

# **Description**

Query Subscription Information The client can use this method to retrieve the list of active subscriptions for alarms related to a NS subscribed by the client. It can be used e.g. for resynchronization after error situations. This method shall follow the provisions specified in the Tables 8.4.4.3.2-1 and 8.4.4.3.2-2 for URI query parameters, request and response data structures, and response codes. Table 8.4.4.3.2-1: URI query parameters supported.

#### **Parameters**

Туре	Name	Description	Schema
Header	<b>Accept</b> required	Content-Types that are acceptable for the response. Reference: IETF RFC 7231	string
Header	Authorization optional	The authorization token for the request. Reference: IETF RFC 7235.	string
Header	Content-Type required	The MIME type of the body of the request. Reference: IETF RFC 7231	string
Header	<b>Version</b> required	Version of the API requested to use when responding to this request.	string
Query	<b>filter</b> optional	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 FmSubscription and in data types referenced from it shall be supported by the NFVO in the filter expression.	string
Query	nextpage_opa que_marker optional	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.	

HTTP Code	Description	Schema
200	200 OK 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 FM subscriptions, as defined in clause 8.5.2.3. 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.  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.  Link (string): Reference to other resources. Used for paging in the present document, see clause 4.7.2.1.	

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.	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" 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
412	412 PRECONDITION FAILED Error: A precondition given in an HTTP request header is not fulfilled. Typically, this is due to an ETag mismatch, indicating that the resource was modified by another entity. The response body should contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.  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 412
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

HTTP Code	Description	Schema
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
_links required	Links for this resource.	_links
<b>callbackUri</b> required	The URI of the endpoint to send the notification to.	string (url)
<b>filter</b> optional	This type represents a subscription filter related to notifications about NS faults. It shall comply with the provisions defined in Table 8.5.3.2-1. At a particular nesting level in the filter structure, the following applies: All attributes shall match in order for the filter to match (logical "and" between different filter attributes). If an attribute is an array, the attribute shall match if at least one of the values in the array matches (logical "or" between the values of one filter attribute)	filter
<b>id</b> required	An identifier with the intention of being globally unique.	string

# \_links

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

### self

Name	Description	Schema
<b>href</b> required	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
eventTypes optional	Match VNF alarms related to NSs with an event type listed in this attribute.	< enum (COMMUNICATIONS _ALARM, PROCESSING_ERROR _ALARM, ENVIRONMENTAL_ ALARM, QOS_ALARM, EQUIPMENT_ALAR M) > array
faultyResourc eTypes optional	Match alarms related to NSs with a faulty resource type listed in this attribute.	< enum (COMPUTE, STORAGE, NETWORK) > array
notificationTy pes optional	Match particular notification types. Permitted values: - AlarmNotification - AlarmClearedNotification - AlarmListRebuiltNotification.	< enum (AlarmNotification, AlarmClearedNotific ation, AlarmListRebuiltNot ification) > array

Name	Description	Schema
nsInstanceSu bscriptionFilt er optional	This type represents subscription filter criteria to match NS instances. NOTE 1: The attributes "nsdIds", "vnfdIds" and "pnfdIds" are alternatives to reference to NS instances that are created based on certain NSDs, or contain VNF instances that are based on certain VNFDs, or contain PNFs that are based on certain PNFDs in a filter. They should not be used together in the same filter instance, but one alternative should be chosen. NOTE 2: The attributes "nsInstanceIds" and "nsInstanceNames" are alternatives to reference to particular NS Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	nsInstanceSubscripti onFilter
perceivedSeve rities optional	Match VNF alarms with a perceived severity listed in this attribute.	<pre>&lt; enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) &gt; array</pre>
probableCaus es optional	Match VNF alarms with a probable cause listed in this attribute.	< string > array

# ns In stance Subscription Filter

Name	Description	Schema
nsInstanceIds optional	If present, match NS instances with an instance identifier listed in this attribute.	< string > array
nsInstanceNa mes optional	If present, match NS instances with a NS Instance Name listed in this attribute.	< string > array
nsdIds optional	If present, match NS instances that were created based on a NSD identified by one of the nsdId values listed in this attribute.	< string > array
pnfdIds optional	If present, match NS instances that contain PNFs that are represented by a PNFD identified by one of the pnfdId values listed in this attribute.	< string > array

Name	Description	Schema
vnfdIds optional	If present, match NS instances that contain VNF instances that were created based on a VNFD identified by one of the vnfdId values listed in this attribute.	

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.	string (URI)
<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".	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
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
<b>instance</b> 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
<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".	

# Read an individual subscription.

GET /subscriptions/{subscriptionId}

# **Description**

Query Subscription Information The client can use this method for reading an individual subscription for alarms related to NSs subscribed by the client. This method shall follow the provisions specified in the Tables 8.4.5.3.2-1 and 8.4.5.3.2-2 for URI query parameters, request and response data structures, and response codes

#### **Parameters**

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

HTTP Code	Description	Schema
200	200 OK Shall be returned when information about an individual subscription has been read successfully. The response body shall contain a representation of the subscription resource.  Headers:  Content-Type (string): The MIME type of the body of the request. Reference: IETF RFC 7231.  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 200

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	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" 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
_links required	Links for this resource.	_links
<b>callbackUri</b> required	The URI of the endpoint to send the notification to.	string (url)
<b>filter</b> optional	This type represents a subscription filter related to notifications about NS faults. It shall comply with the provisions defined in Table 8.5.3.2-1. At a particular nesting level in the filter structure, the following applies: All attributes shall match in order for the filter to match (logical "and" between different filter attributes). If an attribute is an array, the attribute shall match if at least one of the values in the array matches (logical "or" between the values of one filter attribute)	filter
<b>id</b> required	An identifier with the intention of being globally unique.	string

# \_links

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

### self

Name	Description	Schema
<b>href</b> required	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
eventTypes optional	Match VNF alarms related to NSs with an event type listed in this attribute.	<pre>&lt; enum (COMMUNICATIONS _ALARM, PROCESSING_ERROR _ALARM, ENVIRONMENTAL_ ALARM, QOS_ALARM, EQUIPMENT_ALAR M) &gt; array</pre>
faultyResourc eTypes optional	Match alarms related to NSs with a faulty resource type listed in this attribute.	< enum (COMPUTE, STORAGE, NETWORK) > array
notificationTy pes optional	Match particular notification types. Permitted values: - AlarmNotification - AlarmClearedNotification - AlarmListRebuiltNotification.	< enum (AlarmNotification, AlarmClearedNotific ation, AlarmListRebuiltNot ification) > array
nsInstanceSu bscriptionFilt er optional	This type represents subscription filter criteria to match NS instances. NOTE 1: The attributes "nsdIds", "vnfdIds" and "pnfdIds" are alternatives to reference to NS instances that are created based on certain NSDs, or contain VNF instances that are based on certain VNFDs, or contain PNFs that are based on certain PNFDs in a filter. They should not be used together in the same filter instance, but one alternative should be chosen. NOTE 2: The attributes "nsInstanceIds" and "nsInstanceNames" are alternatives to reference to particular NS Instances in a filter. They should not be used both in the same filter instance, but one alternative should be chosen.	_
perceivedSeve rities optional	Match VNF alarms with a perceived severity listed in this attribute.	<pre>&lt; enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) &gt; array</pre>
probableCaus es optional	Match VNF alarms with a probable cause listed in this attribute.	< string > array

# ns In stance Subscription Filter

Name	Description	Schema
nsInstanceIds optional	If present, match NS instances with an instance identifier listed in this attribute.	< string > array
nsInstanceNa mes optional	If present, match NS instances with a NS Instance Name listed in this attribute.	< string > array
nsdIds optional	If present, match NS instances that were created based on a NSD identified by one of the nsdId values listed in this attribute.	< string > array
pnfdIds optional	If present, match NS instances that contain PNFs that are represented by a PNFD identified by one of the pnfdId values listed in this attribute.	< string > array
vnfdIds optional	If present, match NS instances that contain VNF instances that were created based on a VNFD identified by one of the vnfdId values listed in this attribute.	< string > array

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

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

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<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".	

# Terminate a subscription.

DELETE /subscriptions/{subscriptionId}

# **Description**

Terminate Subscription This method terminates an individual subscription. 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**

Туре	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
Path	subscriptionI d required	Identifier of this subscription. This identifier can be retrieved from the resource referenced by the "Location" HTTP header in the response to a POST request creating a new subscription resource. It can also be retrieved from the "id" attribute in the payload body of that response.	

HTTP Code	Description	Schema
204	204 - No Content Shall be returned when the subscription resource has been deleted successfully. The response body shall be empty.  Headers:  WWW-Authenticate (string): Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.  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.  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	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" 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)

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