

SOL005 - NS Fault Management Interface

Overview

SOL005 - 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/bugzilla/buglist.cgi?component=Nfv-Openapis>

Version information

Version : 2.4.1

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 : HTTPS

Consumes

- `application/json`

Produces

- `application/json`

External Docs

Description : ETSI GS NFV-SOL 005 V2.4.1

URL : http://www.etsi.org/deliver/etsi_gs/NFV-SOL/001_099/005/02.04.01_60/gs_NFV-SOL005v020401p.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

| Type | Name | Description | Schema |
|--------|---|--|--------|
| Header | Accept <i>required</i> | Content-Types that are acceptable for the response. Reference: IETF RFC 7231 | string |
| Header | Authorization <i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235 | string |
| Query | filter <i>optional</i> | Attribute-based filtering parameters according to clause 4.3.2. The NFVO shall support receiving filtering parameters as part of the URI query string. The OSS/BSS may supply filtering parameters. The following attribute names shall be supported in attribute-based filtering parameters: - id - nsInstanceId - rootCauseFaultyComponent.faultyNestedNsInstanceId - rootCauseFaultyComponent.faultyNsVirtualLinkInstanceId - rootCauseFaultyComponent.faultyVnfInstanceId - rootCauseFaultyResource.faultyResourceType - eventType - perceivedSeverity | string |

Responses

| HTTP Code | Description | Schema |
|-----------|--|--|
| 200 | <p>200 OK. The request has succeeded. The response body shall contain the list of related alarms.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | < Response 200 > array |
| 400 | <p>Bad Request Error: Invalid attribute-based filtering parameters. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 400 |
| 401 | <p>Unauthorized. If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 401 |
| 403 | <p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 403 |

| HTTP Code | Description | Schema |
|-----------|--|------------------------------|
| 405 | <p>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 in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 405 |
| 406 | <p>If the "Accept" header does not contain at least one name of a content type for which the NFVO can provide a representation of the NSD, the NFVO shall respond with this response code. The "ProblemDetails" structure may be included with the "detail" attribute providing more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 406 |
| 500 | <p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The ProblemDetails structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 500 |
| 503 | <p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the Retry-After HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 503 |

Response 200

| Name | Description | Schema |
|---------------------------------|---|-----------------------|
| Alarm <i>optional</i> | The alarm data type encapsulates information about an alarm. It shall comply with the provisions defined in Table 8.5.2.4-1 | Alarm |

Alarm

| Name | Description | Schema |
|--|--|---|
| _links <i>required</i> | Links for this resource. | _links |
| ackState <i>required</i> | Acknowledgment state of the alarm. Permitted values: UNACKNOWLEDGED ACKNOWLEDGED | enum (UNACKNOWLEDGED, ACKNOWLEDGED) |
| alarmChangeTime <i>optional</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| alarmClearedTime <i>optional</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| alarmRaisedTime <i>required</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| correlatedAlarmIds <i>optional</i> | List of identifiers of other alarms correlated to this fault. | < string > array |
| eventTime <i>required</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| eventType <i>required</i> | 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_ALARM) |

| Name | Description | Schema |
|---|--|---------------|
| faultDetails <i>optional</i> | Provides additional information about the fault.. | string |
| faultType <i>optional</i> | Additional information to clarify the type of the fault. | string |
| id <i>required</i> | An identifier with the intention of being globally unique. | string |
| isRootCause <i>required</i> | 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 |
| managedObjectId <i>required</i> | An identifier with the intention of being globally unique. | string |

| Name | Description | Schema |
|--|--|--|
| perceivedSeverity <i>required</i> | 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). | enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) |
| probableCause <i>required</i> | Information about the probable cause of the fault. | string |
| rootCauseFaultyComponent <i>required</i> | 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. | rootCauseFaultyComponent |
| rootCauseFaultyResource <i>optional</i> | This type represents the faulty virtual resources that have a negative impact on a NS. | rootCauseFaultyResource |

links

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

self

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

rootCauseFaultyComponent

| Name | Description | Schema |
|---|--|--------|
| faultyNestedNsInstanceId <i>optional</i> | An identifier with the intention of being globally unique. | string |
| faultyNsVirtualLinkInstanceId <i>optional</i> | An identifier with the intention of being globally unique. | string |
| faultyResourceType <i>optional</i> | An identifier with the intention of being globally unique. | string |

rootCauseFaultyResource

| Name | Description | Schema |
|--|--|----------------------------------|
| faultyResource <i>required</i> | 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. The ResourceHandle type shall comply with the provisions defined in Table 6.5.3.54-1.. | faultyResource |
| faultyResourceType <i>required</i> | 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) |

faultyResource

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

Response 400

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

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

Response 401

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

Response 403

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

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

Response 405

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

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

Response 406

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

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

Response 500

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

Response 503

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

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

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

| Type | Name | Description | Schema |
|--------|--|--|--------|
| Header | Content-Type <i>required</i> | The MIME type of the body of the request. Reference: IETF RFC 7231 | string |
| Path | alarmId <i>required</i> | 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 |

Responses

| HTTP Code | Description | Schema |
|-----------|--|------------------------------|
| 200 | <p>200 OK. Information about an individual alarm was read successfully. The response body shall contain a representation of the individual alarm.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 200 |
| 400 | <p>Bad Request Error: Invalid attribute-based filtering parameters. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 400 |

| HTTP Code | Description | Schema |
|-----------|--|--------------|
| 401 | <p>Unauthorized. If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 401 |
| 403 | <p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 403 |
| 405 | <p>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 in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 405 |
| 406 | <p>If the "Accept" header does not contain at least one name of a content type for which the NFVO can provide a representation of the NSD, the NFVO shall respond with this response code. The "ProblemDetails" structure may be included with the "detail" attribute providing more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 406 |

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

Response 200

| Name | Description | Schema |
|---------------------------------|---|-----------------------|
| Alarm <i>optional</i> | The alarm data type encapsulates information about an alarm. It shall comply with the provisions defined in Table 8.5.2.4-1 | Alarm |

Alarm

| Name | Description | Schema |
|---|--|--|
| _links <i>required</i> | Links for this resource. | _links |
| ackState <i>required</i> | Acknowledgment state of the alarm. Permitted values: UNACKNOWLEDGED ACKNOWLEDGED | enum (UNACKNOWLEDGED, ACKNOWLEDGED) |
| alarmChangeTime <i>optional</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |

| Name | Description | Schema |
|--|--|---|
| alarmClearedTime <i>optional</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| alarmRaisedTime <i>required</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| correlatedAlarmIds <i>optional</i> | List of identifiers of other alarms correlated to this fault. | < string > array |
| eventTime <i>required</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| eventType <i>required</i> | 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_ALARM) |
| faultDetails <i>optional</i> | Provides additional information about the fault.. | string |
| faultType <i>optional</i> | Additional information to clarify the type of the fault. | string |
| id <i>required</i> | An identifier with the intention of being globally unique. | string |
| isRootCause <i>required</i> | 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 |

| Name | Description | Schema |
|--|--|--|
| managedObjectId <i>required</i> | An identifier with the intention of being globally unique. | string |
| perceivedSeverity <i>required</i> | 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). | enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) |
| probableCause <i>required</i> | Information about the probable cause of the fault. | string |
| rootCauseFaultyComponent <i>required</i> | 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. | rootCauseFaultyComponent |

| Name | Description | Schema |
|---|--|---|
| rootCauseFaultyResource <i>optional</i> | This type represents the faulty virtual resources that have a negative impact on a NS. | rootCauseFaultyResource |

links

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

self

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

rootCauseFaultyComponent

| Name | Description | Schema |
|---|--|--------|
| faultyNestedNsInstanceId <i>optional</i> | An identifier with the intention of being globally unique. | string |
| faultyNsVirtualLinkInstanceId <i>optional</i> | An identifier with the intention of being globally unique. | string |
| faultyResourceType <i>optional</i> | An identifier with the intention of being globally unique. | string |

rootCauseFaultyResource

| Name | Description | Schema |
|--|--|--------------------------------|
| faultyResource <i>required</i> | 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. The ResourceHandle type shall comply with the provisions defined in Table 6.5.3.54-1.. | faultyResource |

| Name | Description | Schema |
|--|--|----------------------------------|
| faultyResourceType <i>required</i> | 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) |

faultyResource

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

Response 400

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

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

Response 401

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

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

Response 403

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

Response 405

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

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

Response 406

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

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

Response 500

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

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

Response 503

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

Acknowledge individual alarm.

```
PATCH /alarms/{alarmId}
```

Description

Acknowledge Alarm This method modifies an individual alarm resource.

Parameters

| Type | Name | Description | Schema |
|--------|---|--|--|
| Header | Accept <i>required</i> | Content-Types that are acceptable for the response. Reference: IETF RFC 7231 | string |
| Header | Authorization <i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235 | string |
| Header | Content-Type <i>required</i> | The Content-Type header shall be set to "application/merge-patch+json" according to IETF RFC 7396. | enum (application/merge-patch+json) |
| Path | alarmId <i>required</i> | 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 | body <i>required</i> | | body |

body

| Name | Description | Schema |
|--|---|------------------------------------|
| AlarmModifications <i>required</i> | This type represents attribute modifications for an "Individual alarm" resource, i.e. modifications to a resource representation based on the "Alarm" data type. The attributes of "Alarm" that can be modified according to the provisions in clause 8.5.2.4 are included in the "AlarmModifications" data type. The "AlarmModifications" data type shall comply with the provisions defined in Table 8.5.2.8-1. | AlarmModifications |

AlarmModifications

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

Responses

| HTTP Code | Description | Schema |
|------------|--|------------------------------|
| 200 | <p>200 OK. The request was accepted and completed. The response body shall contain attribute modifications for an 'Individual alarm' resource (see clause 8.5.2.4).</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 200 |
| 400 | <p>Bad Request Error: Invalid attribute-based filtering parameters. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 400 |
| 401 | <p>Unauthorized. If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 401 |

| HTTP Code | Description | Schema |
|-----------|--|--------------|
| 403 | <p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 403 |
| 405 | <p>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 in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 405 |
| 406 | <p>If the "Accept" header does not contain at least one name of a content type for which the NFVO can provide a representation of the NSD, the NFVO shall respond with this response code. The "ProblemDetails" structure may be included with the "detail" attribute providing more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 406 |
| 409 | <p>Conflict Error: The operation cannot be executed currently, due to a conflict with the state of the "Individual alarm" resource. Typically, this is due to the fact that the alarm is already in the state that is requested to be set (such as trying to acknowledge an already-acknowledged alarm). The response body shall contain a ProblemDetails structure, in which the "detail" attribute shall convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 409 |

| HTTP Code | Description | Schema |
|-----------|--|------------------------------|
| 412 | <p>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.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 412 |
| 500 | <p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The ProblemDetails structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 500 |
| 503 | <p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the Retry-After HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 503 |

Response 200

| Name | Description | Schema |
|---|--|------------------------------------|
| AlarmModific ations <i>optional</i> | <p>This type represents attribute modifications for an "Individual alarm" resource, i.e. modifications to a resource representation based on the "Alarm" data type. The attributes of "Alarm" that can be modified according to the provisions in clause 8.5.2.4 are included in the "AlarmModifications" data type. The "AlarmModifications" data type shall comply with the provisions defined in Table 8.5.2.8-1.</p> | AlarmModifications |

AlarmModifications

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

Response 400

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

Response 401

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

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

Response 403

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

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

Response 405

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

Response 406

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

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

Response 409

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

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

Response 412

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

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

Response 500

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

Response 503

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

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

Notify about NS alarms.

POST /notification_endpoint

Description

The POST method notifies an alarm related to a NS or that the alarm list has been rebuilt.

Parameters

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

| Type | Name | Description | Schema |
|--------|---|---|-----------------------------------|
| Header | Content-Type <i>required</i> | The MIME type of the body of the request. Reference: IETF RFC 7231 | string |
| Body | alarmNotification <i>required</i> | Information of a NS alarm. | alarmNotification |

alarmNotification

| Name | Description | Schema |
|---|---|-----------------------------------|
| AlarmNotification <i>optional</i> | This type represents an alarm notification about NS faults. | AlarmNotification |

AlarmNotification

| Name | Description | Schema |
|--|---|------------------------------------|
| _links <i>required</i> | Links to resources related to this notification. | _links |
| alarm <i>required</i> | The alarm data type encapsulates information about an alarm. It shall comply with the provisions defined in Table 8.5.2.4-1 | alarm |
| id <i>required</i> | An identifier with the intention of being globally unique. | string |
| notificationType <i>required</i> | Discriminator for the different notification types. Shall be set to "AlarmNotification" for this notification type. | enum (AlarmClearedNotification) |
| subscriptionId <i>required</i> | An identifier with the intention of being globally unique. | string |
| timeStamp <i>required</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |

[_links](#)

| Name | Description | Schema |
|--|--|------------------------------|
| alarm <i>required</i> | This type represents a link to a resource. | alarm |
| subscription <i>required</i> | This type represents a link to a resource. | subscription |

alarm

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

subscription

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

alarm

| Name | Description | Schema |
|--|--|-------------------------------------|
| _links <i>required</i> | Links for this resource. | _links |
| ackState <i>required</i> | Acknowledgment state of the alarm. Permitted values: UNACKNOWLEDGED ACKNOWLEDGED | enum (UNACKNOWLEDGED, ACKNOWLEDGED) |
| alarmChangeTime <i>optional</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| alarmClearedTime <i>optional</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| alarmRaisedTime <i>required</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |

| Name | Description | Schema |
|--|--|---|
| correlatedAlarmIds <i>optional</i> | List of identifiers of other alarms correlated to this fault. | < string > array |
| eventTime <i>required</i> | Date-time stamp. Representation: String formatted according to IETF RFC 3339. | string (date-time) |
| eventType <i>required</i> | 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_ALARM) |
| faultDetails <i>optional</i> | Provides additional information about the fault.. | string |
| faultType <i>optional</i> | Additional information to clarify the type of the fault. | string |
| id <i>required</i> | An identifier with the intention of being globally unique. | string |
| isRootCause <i>required</i> | 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 |
| managedObjectId <i>required</i> | An identifier with the intention of being globally unique. | string |

| Name | Description | Schema |
|--|--|--|
| perceivedSeverity <i>required</i> | 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). | enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) |
| probableCause <i>required</i> | Information about the probable cause of the fault. | string |
| rootCauseFaultyComponent <i>required</i> | 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. | rootCauseFaultyComponent |
| rootCauseFaultyResource <i>optional</i> | This type represents the faulty virtual resources that have a negative impact on a NS. | rootCauseFaultyResource |

links

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

self

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

rootCauseFaultyComponent

| Name | Description | Schema |
|---|--|--------|
| faultyNestedNsInstanceId <i>optional</i> | An identifier with the intention of being globally unique. | string |
| faultyNsVirtualLinkInstanceId <i>optional</i> | An identifier with the intention of being globally unique. | string |
| faultyResourceType <i>optional</i> | An identifier with the intention of being globally unique. | string |

rootCauseFaultyResource

| Name | Description | Schema |
|--|--|----------------------------------|
| faultyResource <i>required</i> | 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. The ResourceHandle type shall comply with the provisions defined in Table 6.5.3.54-1.. | faultyResource |
| faultyResourceType <i>required</i> | 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) |

faultyResource

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

Responses

| HTTP Code | Description | Schema |
|-----------|--|------------------------------|
| 204 | The notification was delivered successfully. The response body shall be empty. | No Content |
| 400 | <p>Bad Request Error: Invalid attribute-based filtering parameters. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the response.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 400 |

| HTTP Code | Description | Schema |
|-----------|--|--------------|
| 401 | <p>Unauthorized. If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 401 |
| 403 | <p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 403 |
| 500 | <p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The ProblemDetails structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 500 |
| 503 | <p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the Retry-After HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 503 |

Response 400

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

Response 401

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

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

Response 403

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

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

Response 500

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

Response 503

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

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

Test the notification endpoint.

```
GET /notification_endpoint
```

Description

The GET method allows the server to test the notification endpoint that is provided by the client, e.g. during subscription.

Parameters

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

Responses

| HTTP Code | Description | Schema |
|-----------|--|------------------------------|
| 204 | The notification endpoint was tested successfully. The response body shall be empty. | No Content |
| 400 | <p>Bad Request Error: Invalid attribute-based filtering parameters. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 400 |
| 401 | <p>Unauthorized. If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 401 |
| 403 | <p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 403 |

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

Response 400

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

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

Response 401

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

Response 403

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

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

Response 500

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

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

Response 503

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

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

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

body

| Name | Description | Schema |
|---|--|---------------------------------------|
| FmSubscriptionRequest <i>required</i> | This type represents a subscription request related to notifications about VNF faults. | FmSubscriptionRequest |

FmSubscriptionRequest

| Name | Description | Schema |
|--|---|--------------------------------|
| authentication <i>optional</i> | Authentication parameters to configure the use of Authorization when sending notifications corresponding to this subscription, as defined in clause 4.5.3.4. This attribute shall only be present if the subscriber requires authorization of notifications. | authentication |
| callbackUri <i>required</i> | The URI of the endpoint to send the notification to. | string (url) |
| filter <i>optional</i> | 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 |

authentication

| Name | Description | Schema |
|------------------------------------|--|---|
| authType <i>required</i> | Defines the types of Authentication / Authorization which the API consumer is willing to accept when receiving a notification. Permitted values: * BASIC: In every HTTP request to the notification endpoint, use HTTP Basic authentication with the client credentials. * OAUTH2_CLIENT_CREDENTIALS: In every HTTP request to the notification endpoint, use an OAuth 2.0 Bearer token, obtained using the client credentials grant type. * TLS_CERT: Every HTTP request to the notification endpoint is sent over a mutually authenticated TLS session, i.e. not only the server is authenticated, but also the client is authenticated during the TLS tunnel setup. | < enum (BASIC, OAUTH2_CLIENT_CREDENTIALS, TLS_CERT) > array |

| Name | Description | Schema |
|---|---|---|
| paramsBasic <i>optional</i> | Parameters for authentication/authorization using BASIC. Shall be present if authType is "BASIC" and the contained information has not been provisioned out of band. Shall be absent otherwise. | paramsBasic |
| paramsOauth2ClientCredentials <i>optional</i> | Parameters for authentication/authorization using OAUTH2_CLIENT_CREDENTIALS. Shall be present if authType is "OAUTH2_CLIENT_CREDENTIALS" and the contained information has not been provisioned out of band. Shall be absent otherwise. | paramsOauth2ClientCredentials |

paramsBasic

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

paramsOauth2ClientCredentials

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

| Name | Description | Schema |
|---|--|--------|
| tokenEndpoint <i>optional</i> | String formatted according to IETF RFC 3986. | string |

filter

| Name | Description | Schema |
|--|--|--|
| eventTypes <i>optional</i> | Match VNF alarms with an event type listed in this attribute. | < enum (COMMUNICATIONS_ALARM, PROCESSING_ERROR_ALARM, ENVIRONMENTAL_ALARM, QOS_ALARM, EQUIPMENT_ALARM) > array |
| faultyResourceTypes <i>optional</i> | Match alarms related to NSs with a faulty resource type listed in this attribute. | < enum (COMPUTE, STORAGE, NETWORK) > array |
| notificationTypes <i>optional</i> | Match particular notification types. Permitted values: - AlarmNotification - AlarmClearedNotification - AlarmListRebuiltNotification. | < enum (AlarmNotification, AlarmClearedNotification, AlarmListRebuiltNotification) > array |
| nsInstanceSubscriptionFilter <i>optional</i> | This type represents subscription filter criteria to match NS instances. It shall comply with the provisions defined in Table 4.4.1.5-1. | nsInstanceSubscriptionFilter |
| perceivedSeverities <i>optional</i> | Match VNF alarms with a perceived severity listed in this attribute. | < enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) > array |
| probableCauses <i>optional</i> | Match VNF alarms with a probable cause listed in this attribute. | < string > array |

nsInstanceSubscriptionFilter

| Name | Description | Schema |
|---|--|------------------|
| nsInstanceIds <i>required</i> | If present, match NS instances with an instance identifier listed in this attribute. | < string > array |
| nsInstanceNames <i>optional</i> | If present, match NS instances with a NS Instance Name listed in this attribute. | < string > array |
| nsdIds <i>required</i> | 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 <i>required</i> | 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 <i>required</i> | 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 |

Responses

| HTTP Code | Description | Schema |
|------------|---|--------------|
| 201 | <p>201 Created</p> <p>Headers :</p> <p>Location (string) : The HTTP response shall include a Location HTTP header that contains the resource URI of the new NS descriptor resource.</p> <p>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.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 201 |
| 303 | See Other A subscription with the same callbackURI and the same filter already exists and the policy of the NFVO is to not create redundant subscriptions. The HTTP response shall include a "Location" HTTP eader that contains the resource URI of the existing subscription resource. The response body shall be empty. | No Content |

| HTTP Code | Description | Schema |
|-----------|--|--------------|
| 400 | <p>Bad Request Error: Invalid attribute-based filtering parameters. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 400 |
| 401 | <p>Unauthorized. If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 401 |
| 403 | <p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 403 |
| 405 | <p>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 in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 405 |

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

Response 201

| Name | Description | Schema |
|--|--|--------------------------------|
| FmSubscription <i>optional</i> | This type represents a subscription related to notifications about VNF faults. | FmSubscription |

FmSubscription

| Name | Description | Schema |
|---------------------------------------|--|------------------------|
| _links <i>required</i> | Links for this resource. | _links |
| callbackUri <i>required</i> | The URI of the endpoint to send the notification to. | string (url) |

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

links

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

self

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

filter

| Name | Description | Schema |
|---|---|--|
| eventTypes <i>optional</i> | Match VNF alarms with an event type listed in this attribute. | < enum (COMMUNICATIONS_ALARM, PROCESSING_ERROR_ALARM, ENVIRONMENTAL_ALARM, QOS_ALARM, EQUIPMENT_ALARM) > array |
| faultyResourceTypes <i>optional</i> | Match alarms related to NSs with a faulty resource type listed in this attribute. | < enum (COMPUTE, STORAGE, NETWORK) > array |

| Name | Description | Schema |
|--|--|--|
| notificationTypes <i>optional</i> | Match particular notification types. Permitted values: - AlarmNotification - AlarmClearedNotification - AlarmListRebuiltNotification. | < enum (AlarmNotification, AlarmClearedNotification, AlarmListRebuiltNotification) > array |
| nsInstanceSubscriptionFilter <i>optional</i> | This type represents subscription filter criteria to match NS instances. It shall comply with the provisions defined in Table 4.4.1.5-1. | nsInstanceSubscriptionFilter |
| perceivedSeverities <i>optional</i> | Match VNF alarms with a perceived severity listed in this attribute. | < enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) > array |
| probableCauses <i>optional</i> | Match VNF alarms with a probable cause listed in this attribute. | < string > array |

nsInstanceSubscriptionFilter

| Name | Description | Schema |
|---|--|------------------|
| nsInstanceIds <i>required</i> | If present, match NS instances with an instance identifier listed in this attribute. | < string > array |
| nsInstanceNames <i>optional</i> | If present, match NS instances with a NS Instance Name listed in this attribute. | < string > array |
| nsdIds <i>required</i> | 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 <i>required</i> | 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 <i>required</i> | 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 |

Response 400

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

Response 401

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

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

Response 403

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

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

Response 405

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

Response 406

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

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

Response 500

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

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

Response 503

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

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

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

| Type | Name | Description | Schema |
|---------------|---|--|--------|
| Header | Accept <i>required</i> | Content-Types that are acceptable for the response. Reference: IETF RFC 7231 | string |
| Header | Authorization <i>optional</i> | The authorization token for the request. Reference: IETF RFC 7235 | string |
| Header | Content-Type <i>required</i> | The MIME type of the body of the request. Reference: IETF RFC 7231 | string |
| Query | filter <i>optional</i> | Attribute-based filtering parameters according to clause 4.3.2. The NFVO shall support receiving filtering parameters as part of the URI query string. The OSS/BSS may supply filtering parameters. All attribute names that appear in the FmSubscription and in data types referenced from it shall be supported in attribute-based filtering parameters. | string |

Responses

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

| HTTP Code | Description | Schema |
|-----------|--|--------------|
| 401 | <p>Unauthorized. If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 401 |
| 403 | <p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 403 |
| 405 | <p>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 in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 405 |
| 406 | <p>If the "Accept" header does not contain at least one name of a content type for which the NFVO can provide a representation of the NSD, the NFVO shall respond with this response code. The "ProblemDetails" structure may be included with the "detail" attribute providing more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 406 |

| HTTP Code | Description | Schema |
|-----------|--|------------------------------|
| 412 | <p>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.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 412 |
| 500 | <p>Internal Server Error If there is an application error not related to the client's input that cannot be easily mapped to any other HTTP response code ("catch all error"), the API producer shall respond with this response code. The ProblemDetails structure shall be provided, and shall include in the "detail" attribute more information about the source of the problem.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 500 |
| 503 | <p>Service Unavailable If the API producer encounters an internal overload situation of itself or of a system it relies on, it should respond with this response code, following the provisions in IETF RFC 7231 [13] for the use of the Retry-After HTTP header and for the alternative to refuse the connection. The "ProblemDetails" structure may be omitted.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 503 |

Response 200

| Name | Description | Schema |
|--|--|--------------------------------|
| FmSubscription <i>optional</i> | This type represents a subscription related to notifications about VNF faults. | FmSubscription |

FmSubscription

| Name | Description | Schema |
|---------------------------------------|--|------------------------|
| _links <i>required</i> | Links for this resource. | _links |
| callbackUri <i>required</i> | The URI of the endpoint to send the notification to. | string (url) |

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

links

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

self

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

filter

| Name | Description | Schema |
|---|---|--|
| eventTypes <i>optional</i> | Match VNF alarms with an event type listed in this attribute. | < enum (COMMUNICATIONS_ALARM, PROCESSING_ERROR_ALARM, ENVIRONMENTAL_ALARM, QOS_ALARM, EQUIPMENT_ALARM) > array |
| faultyResourceTypes <i>optional</i> | Match alarms related to NSs with a faulty resource type listed in this attribute. | < enum (COMPUTE, STORAGE, NETWORK) > array |

| Name | Description | Schema |
|--|--|--|
| notificationTypes <i>optional</i> | Match particular notification types. Permitted values: - AlarmNotification - AlarmClearedNotification - AlarmListRebuiltNotification. | < enum (AlarmNotification, AlarmClearedNotification, AlarmListRebuiltNotification) > array |
| nsInstanceSubscriptionFilter <i>optional</i> | This type represents subscription filter criteria to match NS instances. It shall comply with the provisions defined in Table 4.4.1.5-1. | nsInstanceSubscriptionFilter |
| perceivedSeverities <i>optional</i> | Match VNF alarms with a perceived severity listed in this attribute. | < enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) > array |
| probableCauses <i>optional</i> | Match VNF alarms with a probable cause listed in this attribute. | < string > array |

nsInstanceSubscriptionFilter

| Name | Description | Schema |
|---|--|------------------|
| nsInstanceIds <i>required</i> | If present, match NS instances with an instance identifier listed in this attribute. | < string > array |
| nsInstanceNames <i>optional</i> | If present, match NS instances with a NS Instance Name listed in this attribute. | < string > array |
| nsdIds <i>required</i> | 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 <i>required</i> | 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 <i>required</i> | 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 |

Response 400

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

Response 401

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

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

Response 403

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

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

Response 405

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

Response 406

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

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

Response 412

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

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

Response 500

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

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

Response 503

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

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

Responses

| HTTP Code | Description | Schema |
|-----------|---|------------------------------|
| 200 | <p>The operation has completed successfully. The response body shall contain a representation of the subscription resource.</p> <p>Headers :</p> <p>Content-Type (string) : The MIME type of the body of the request. Reference: IETF RFC 7231.</p> <p>WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 200 |

| HTTP Code | Description | Schema |
|-----------|--|--------------|
| 400 | <p>Bad Request Error: Invalid attribute-based filtering parameters. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 400 |
| 401 | <p>Unauthorized. If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 401 |
| 403 | <p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 403 |
| 405 | <p>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 in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 405 |

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

Response 200

| Name | Description | Schema |
|---------------------------------------|--|------------------------|
| _links <i>required</i> | Links for this resource. | _links |
| callbackUri <i>required</i> | The URI of the endpoint to send the notification to. | string (url) |

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

links

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

self

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

filter

| Name | Description | Schema |
|---|---|--|
| eventTypes <i>optional</i> | Match VNF alarms with an event type listed in this attribute. | < enum (COMMUNICATIONS_ALARM, PROCESSING_ERROR_ALARM, ENVIRONMENTAL_ALARM, QOS_ALARM, EQUIPMENT_ALARM) > array |
| faultyResourceTypes <i>optional</i> | Match alarms related to NSs with a faulty resource type listed in this attribute. | < enum (COMPUTE, STORAGE, NETWORK) > array |

| Name | Description | Schema |
|--|--|--|
| notificationTypes <i>optional</i> | Match particular notification types. Permitted values: - AlarmNotification - AlarmClearedNotification - AlarmListRebuiltNotification. | < enum (AlarmNotification, AlarmClearedNotification, AlarmListRebuiltNotification) > array |
| nsInstanceSubscriptionFilter <i>optional</i> | This type represents subscription filter criteria to match NS instances. It shall comply with the provisions defined in Table 4.4.1.5-1. | nsInstanceSubscriptionFilter |
| perceivedSeverities <i>optional</i> | Match VNF alarms with a perceived severity listed in this attribute. | < enum (CRITICAL, MAJOR, MINOR, WARNING, INDETERMINATE, CLEARED) > array |
| probableCauses <i>optional</i> | Match VNF alarms with a probable cause listed in this attribute. | < string > array |

nsInstanceSubscriptionFilter

| Name | Description | Schema |
|---|--|------------------|
| nsInstanceIds <i>required</i> | If present, match NS instances with an instance identifier listed in this attribute. | < string > array |
| nsInstanceNames <i>optional</i> | If present, match NS instances with a NS Instance Name listed in this attribute. | < string > array |
| nsdIds <i>required</i> | 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 <i>required</i> | 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 <i>required</i> | 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 |

Response 400

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

Response 401

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

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

Response 403

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

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

Response 405

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

Response 406

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

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

Response 500

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

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

Response 503

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

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

Terminate a subscription.

```
DELETE /subscriptions/{subscriptionId}
```

Description

Terminate Subscription

This method terminates an individual subscription.

Parameters

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

Responses

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

| HTTP Code | Description | Schema |
|-----------|--|--------------|
| 400 | <p>Bad Request Error: Invalid attribute-based filtering parameters. The response body shall contain a ProblemDetails structure, in which the "detail" attribute should convey more information about the error.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 400 |
| 401 | <p>Unauthorized. If the request contains no access token even though one is required, or if the request contains an authorization token that is invalid (e.g. expired or revoked), the API producer should respond with this response. The details of the error shall be returned in the WWW-Authenticate HTTP header, as defined in IETF RFC 6750 and IETF RFC 7235. The ProblemDetails structure may be provided.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response. WWW-Authenticate (string) : Challenge if the corresponding HTTP request has not provided authorization, or error details if the corresponding HTTP request has provided an invalid authorization token.</p> | Response 401 |
| 403 | <p>Forbidden If the API consumer is not allowed to perform a particular request to a particular resource, the API producer shall respond with this response code. The "ProblemDetails" structure shall be provided. It should include in the "detail" attribute information about the source of the problem, and may indicate how to solve it.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 403 |
| 405 | <p>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 in that case.</p> <p>Headers : Content-Type (string) : The MIME type of the body of the response.</p> | Response 405 |

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

Response 400

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

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

Response 401

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

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

Response 403

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

Response 405

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

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

Response 406

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

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

Response 500

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

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

Response 503

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