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**oneM2M API guide
(oneM2M TR-0051 version 2.0.0)**



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Foreword

This Technical Report (TR) has been produced by ETSI Partnership Project oneM2M (oneM2M).

1 Scope

The present document is a collection of the CRUDN messages used for managing some of the main resources defined in ETSI TS 118 101 [i.2]. It also provides the description and associated flow in basic examples. It aims to use this list as a common sets of APIs to help developers to write applications that can run across different platforms and specific implementations.

When an application developer would need to build software code for managing a specific resource, he could have an immediate access to the list of CRUDN message with description and its associated examples of requests to send and its expected responses. The REST API examples are sorted by resource type and CRUDN operations, which allows a quick and easy access to the information.

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] oneM2M Drafting Rules.

NOTE: Available at <http://www.onem2m.org/images/files/oneM2M-Drafting-Rules.pdf>.

[i.2] ETSI TS 118 101: "oneM2M; Functional Architecture (oneM2M TS-0001)".

[i.3] ETSI TS 118 104: "oneM2M; Service Layer Core Protocol Specification (oneM2M TS-0004)".

3 Definition of terms, symbols and abbreviations

3.1 Terms

Void.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

| | |
|-----|-----------------------|
| ACP | Access Control Policy |
| AE | Application Entity |

| | |
|-------|---|
| AE-ID | Application Entity Identifier |
| API | Application Programming Interface |
| CBOR | Concise Binary Object Representation |
| CRUDN | Create, Retrieve, Update, Delete and Notify operations for REST API |
| CSE | Common Services Entity |
| HAIM | Home Appliances Information Model |
| HTTP | HyperText Transfer Protocol |
| JSON | JavaScript Object Notation |
| RCN | Result Content |
| REST | Representational State Transfer |
| XML | eXtensible Markup Language |

4 Conventions

The key words "Shall", "Shall not", "May", "Need not", "Should", "Should not" in the present document are to be interpreted as described in the oneM2M Drafting Rules [i.1].

5 oneM2M REST APIs

5.1 Introduction

The major objective of the present document is providing example sets of request and response. The REST APIs that are defined in the present document cover for resources Create, Retrieve, Update and Delete management, subscription/notification, data discovery, etc. Sending the CRUD request to the CSE and getting the response may help user to learn oneM2M specification.

In the current guide, examples of API are written based on HTTP protocol binding and JSON format. The APIs are written based on release 2a version.

For more references, please refer to clause 2.2.

5.2 Short name representation

5.2.1 Introduction

oneM2M defines short names for resources and attributes. To encode the message using XML, JSON and CBOR, short names are used. Request or response body which have been formed in short names can reduce the size of the message.

5.2.2 Resource type short names

Table 5.2.2-1 shows shot names for the resource type. It includes resource types which are used in the present document. For more information please refer to ETSI TS 118 104 [i.3].

Table 5.2.2-1: Resource type short names

| Resource Type Name | Short Name |
|---------------------|------------|
| accessControlPolicy | <i>acp</i> |
| AE | <i>ae</i> |
| container | <i>cnt</i> |
| contentInstance | <i>cin</i> |
| CSEBase | <i>cb</i> |
| group | <i>grp</i> |
| remoteCSE | <i>csr</i> |
| subscription | <i>sub</i> |
| semanticDescriptor | <i>smd</i> |
| timeSeries | <i>ts</i> |
| timeSeriesInstance | <i>tsi</i> |

5.2.3 Resource attribute short names

Table 5.2.3-1 shows shot names for the resource attribute. It includes attributes which are used in the present document. For more information please refer to ETSI TS 118 104 [i.3].

Table 5.2.3-1: Resource attribute short names

| Attribute Name | Occurs in | Short Name |
|-------------------------------|--|-------------|
| <i>accessControlPolicyIDs</i> | All except accessControlPolicy, contentInstance | <i>acpi</i> |
| <i>announcedAttribute</i> | accessControlPolicy, AE, container, contentInstance, group, locationPolicy, mgmtObj, node, remoteCSE, schedule, semanticDescriptor, trafficPattern | <i>aa</i> |
| <i>announceTo</i> | accessControlPolicy, AE, container, contentInstance, group, locationPolicy, mgmtObj, node, remoteCSE, schedule, semanticDescriptor, trafficPattern | <i>at</i> |
| <i>creationTime</i> | All | <i>ct</i> |
| <i>expirationTime</i> | All except contentInstance, CSEBase | <i>et</i> |
| <i>labels</i> | All (optional) | <i>lbl</i> |
| <i>lastModifiedTime</i> | All | <i>lt</i> |
| <i>Link</i> | All | <i>lnk</i> |
| <i>parentID</i> | All | <i>pi</i> |
| <i>resourceID</i> | All | <i>ri</i> |
| <i>resourceType</i> | All | <i>ty</i> |
| <i>stateTag</i> | container, contentInstance, delivery, request | <i>st</i> |
| <i>resourceName</i> | All | <i>rn</i> |
| <i>privileges</i> | accessControlPolicy | <i>pv</i> |
| <i>selfPrivileges</i> | accessControlPolicy | <i>pvs</i> |
| <i>App-ID</i> | AE | <i>api</i> |
| <i>AE-ID</i> | AE | <i>aei</i> |
| <i>appName</i> | AE | <i>apn</i> |
| <i>pointOfAccess</i> | AE, CSEBase, remoteCSE | <i>poa</i> |
| <i>ontologyRef</i> | AE, container, contentInstance, semanticDescriptor, flexContainer, timeSeries | <i>or</i> |
| <i>nodeLink</i> | AE, CSEBase, remoteCSE | <i>nl</i> |
| <i>contentSerialization</i> | AE | <i>csz</i> |
| <i>creator</i> | container, contentInstance, eventConfig, group, pollingChannel, statsCollect, statsConfig, subscription, semanticDescriptor, notificationTargetPolicy, flexContainer, timeSeries | <i>cr</i> |
| <i>maxNrOfInstances</i> | container, timeSeries | <i>mni</i> |
| <i>maxByteSize</i> | container, timeSeries | <i>mbs</i> |
| <i>maxInstanceAge</i> | container, timeSeries | <i>mia</i> |
| <i>currentNrOfInstances</i> | container, timeSeries | <i>cni</i> |
| <i>currentByteSize</i> | container | <i>cbs</i> |
| <i>locationID</i> | container | <i>li</i> |
| <i>disableRetrieval</i> | container | <i>disr</i> |
| <i>contentInfo</i> | contentInstance | <i>cnf</i> |
| <i>ContentSize</i> | contentInstance, timeSeriesInstance | <i>cs</i> |
| <i>contentRef</i> | contentInstance | <i>conr</i> |
| <i>containerDefinition</i> | flexContainer | <i>cnd</i> |

| Attribute Name | Occurs in | Short Name |
|--------------------------------------|---|-------------|
| <i>primitiveContent</i> | request | <i>pc</i> |
| <i>content</i> | contentInstance, timeSeriesInstance | <i>con</i> |
| <i>cseType</i> | CSEBase, remoteCSE | <i>cst</i> |
| <i>CSE-ID</i> | CSEBase, remoteCSE, serviceSubscribedNode | <i>csi</i> |
| <i>supportedResourceType</i> | CSEBase | <i>srt</i> |
| <i>notificationCongestionPolicy</i> | CSEBase | <i>ncp</i> |
| <i>memberType</i> | group | <i>mt</i> |
| <i>currentNrOfMembers</i> | group | <i>cnm</i> |
| <i>maxNrOfMembers</i> | group | <i>mnm</i> |
| <i>memberIDs</i> | group | <i>mid</i> |
| <i>membersAccessControlPolicyIDs</i> | group | <i>macp</i> |
| <i>memberTypeValidated</i> | group | <i>mtv</i> |
| <i>consistencyStrategy</i> | group | <i>csy</i> |
| <i>semanticSupportIndicator</i> | group | <i>ssi</i> |
| <i>notifyAggregation</i> | group | <i>nar</i> |
| <i>groupName</i> | group, subscription | <i>gn</i> |
| <i>CSEBase</i> | remoteCSE | <i>cb</i> |
| <i>M2M-Ext-ID</i> | remoteCSE | <i>mei</i> |
| <i>Trigger-Recipient-ID</i> | remoteCSE | <i>tri</i> |
| <i>requestReachability</i> | remoteCSE | <i>rr</i> |
| <i>triggerReferenceNumber</i> | remoteCSE | <i>trn</i> |
| <i>eventNotificationCriteria</i> | subscription | <i>enc</i> |
| <i>expirationCounter</i> | subscription | <i>exc</i> |
| <i>notificationURI</i> | subscription | <i>nu</i> |
| <i>groupID</i> | subscription | <i>gpi</i> |
| <i>notificationForwardingURI</i> | subscription | <i>nfu</i> |
| <i>batchNotify</i> | subscription | <i>bn</i> |
| <i>rateLimit</i> | subscription | <i>rl</i> |
| <i>preSubscriptionNotify</i> | subscription | <i>psn</i> |
| <i>pendingNotification</i> | subscription | <i>pn</i> |
| <i>notificationStoragePriority</i> | subscription | <i>nsp</i> |
| <i>latestNotify</i> | subscription | <i>ln</i> |
| <i>notificationContentType</i> | subscription | <i>nct</i> |
| <i>notificationEventCat</i> | subscription | <i>nec</i> |
| <i>subscriberURI</i> | subscription | <i>su</i> |
| <i>descriptorRepresentation</i> | semanticDescriptor | <i>dcrp</i> |
| <i>semanticOpExec</i> | semanticDescriptor | <i>soe</i> |
| <i>descriptor</i> | semanticDescriptor | <i>dsp</i> |
| <i>relatedSemantics</i> | semanticDescriptor | <i>rels</i> |
| <i>periodicInterval</i> | timeSeries | <i>pei</i> |
| <i>missingDataDetect</i> | timeSeries | <i>mdd</i> |
| <i>missingDataMaxNr</i> | timeSeries | <i>mdn</i> |
| <i>missingDataList</i> | timeSeries | <i>mdlt</i> |
| <i>missingDataCurrentNr</i> | timeSeries | <i>mdc</i> |
| <i>missingDataDetectTimer</i> | timeSeries | <i>mdt</i> |
| <i>dataGenerationTime</i> | timeSeriesInstance | <i>dgt</i> |
| <i>sequenceNr</i> | timeSeriesInstance | <i>snr</i> |
| <i>e2eSecInfo</i> | CSEBase, remoteCSE, AE | <i>esi</i> |
| <i>supportedReleaseVersions</i> | CSEBase, remoteCSE, AE | <i>srv</i> |
| <i>descriptorRepresentation</i> | semanticDescriptor | <i>dcrp</i> |
| <i>semanticOpExec</i> | semanticDescriptor | <i>soe</i> |
| <i>descriptor</i> | semanticDescriptor | <i>dsp</i> |
| <i>relatedSemantics</i> | semanticDescriptor | <i>rels</i> |
| <i>periodicInterval</i> | timeSeries | <i>pei</i> |
| <i>missingDataDetect</i> | timeSeries | <i>mdd</i> |
| <i>missingDataMaxNr</i> | timeSeries | <i>mdn</i> |
| <i>missingDataList</i> | timeSeries | <i>mdlt</i> |
| <i>missingDataCurrentNr</i> | timeSeries | <i>mdc</i> |
| <i>missingDataDetectTimer</i> | timeSeries | <i>mdt</i> |
| <i>dataGenerationTime</i> | timeSeriesInstance | <i>dgt</i> |
| <i>sequenceNr</i> | timeSeriesInstance | <i>snr</i> |
| <i>e2eSecInfo</i> | CSEBase, remoteCSE, AE | <i>esi</i> |
| <i>supportedReleaseVersions</i> | CSEBase, remoteCSE, AE | <i>srv</i> |

5.3 Enumeration data types

5.3.0 Introduction

The oneM2M Enumeration Types are based on xs:integer, and the numeric values are interpreted as specified in table 5.3.1-1.

5.3.1 m2m:resource Type

The enumeration type of resource Type is used in the Content-Type in the HTTP header of request. Table 5.3.1-1 only has enumeration type for resource Type which are used in the present document. More information can be found in ETSI TS 118 104 [i.3].

Table 5.3.1-1: Interpretation of resourceType

| Value | Interpretation | Note |
|-------|---------------------|------|
| 1 | accessControlPolicy | |
| 2 | AE | |
| 3 | container | |
| 4 | contentInstance | |
| 5 | CSEBase | |
| 9 | group | |
| 15 | pollingChannel | |
| 16 | remoteCSE | |
| 23 | subscription | |
| 24 | semanticDescriptor | |
| 28 | flexContainer | |
| 29 | timeSeries | |
| 30 | timeSeriesInstance | |

5.3.2 m2m:result content

The response format can be changed using resultContent (RCN) parameter. The oneM2M standard defines 8 different result content, but this API guide only deals with result content 0 to 3. Table 5.3.2-1 shows resultContent value and response format matches.

Table 5.3.2-1: Interpretation of resultContent

| Value | Interpretation | Note |
|-------|-------------------------------------|------|
| 0 | nothing | |
| 1 | attributes | |
| 2 | hierarchical address | |
| 3 | hierarchical address and attributes | |

6 Open API collection

6.1 APIs list

6.1.1 Introduction

The identifier of the API is constructed with the following format:

API/<RESOURCE_TYPE>/<OPERATION_TYPE>/<NUMBER>_<PERMUTATION>

Specific values are used in the format defined in table 6.1.1-1.

Table 6.1.1-1: API Id Notation

| Name | Value | interpretation |
|------------------|---|---|
| <RESOURCE_TYPE> | CB | CSEBase |
| | CSR | remoteCSE |
| | AE | AE |
| | CONT | container |
| | CI | contentInstance |
| | SMD | semanticDescriptor |
| | DIS | discovery |
| | SUB | subscription |
| | GRP | group |
| | TS | timeSeries |
| | TSI | timeSeriesInstance |
| | ACP | accessControlPolicy |
| | FLX | flexContainer |
| | CRE | CREATE |
| <OPERATION_TYPE> | RET | RETRIEVE |
| | UPD | UPDATE |
| | DEL | DELETE |
| | DIS | DISCOVERY |
| <NUMBER> | 001 - 999 | - |
| <PERMUTATION> | short name of attribute or resource type that is used in a request primitive. | A resultContent with its value is presented as a <PERMUTATION> – RCN1, RCN2, RCN3, RCN4 Filter Criteria parameter used in discovery clause is presented as a <PERMUTATION> – TY, LBL, LVL, CRB, etc. |

6.1.2 APIs list

Table 6.1.2-1: list of the APIs

| Interface ID | Interface Category | Interface Description |
|----------------------|----------------------|--|
| API/CB/RET/001 | <CSEBase> RETRIEVE | Retrieve CSEBase with resultContent set to 1 or no RCN |
| API/CB/RET/001_RCN1 | <CSEBase> RETRIEVE | Retrieve CSEBase with ResultContent set to 4 |
| API/CSR/CRE/001_RCN0 | <remoteCSE> CREATE | Create remoteCSE with resultContent set to 0 |
| API/CSR/CRE/001 | <remoteCSE> CREATE | Create remoteCSE with resultContent set to 1 or no RCN |
| API/CSR/CRE/001_RCN1 | <remoteCSE> CREATE | Create remoteCSE with resultContent set to 2 |
| API/CSR/CRE/001_RCN2 | <remoteCSE> CREATE | Create remoteCSE with resultContent set to 3 |
| API/CSR/RET/001 | <remoteCSE> RETRIEVE | Retrieve remoteCSE with resultContent set to 1 or no RCN |
| API/CSR/RET/001_RCN1 | <remoteCSE> RETRIEVE | Retrieve remoteCSE with resultContent set to 0 |
| API/CSR/UPD/001 | <remoteCSE> UPDATE | Update remoteCSE with resultContent set to 1 or no RCN |
| API/CSR/UPD/001_RCN1 | <remoteCSE> UPDATE | Update remoteCSE with resultContent set to 0 |
| API/CSR/UPD/001_RCN0 | <remoteCSE> UPDATE | Update remoteCSE with resultContent set to 1 or no RCN |
| API/CSR/DEL/001_RCN0 | <remoteCSE> DELETE | Delete remoteCSE with resultContent set to 0 |
| API/CSR/DEL/001 | <remoteCSE> DELETE | Delete remoteCSE with resultContent set to 1 or no RCN |
| API/CSR/DEL/001_RCN1 | <remoteCSE> DELETE | Delete remoteCSE with resultContent set to 0 |
| API/AE/CRE/001_RCN0 | <AE> CREATE | Create AE with resultContent set to 0 |
| API/AE/CRE/001 | <AE> CREATE | Create AE with resultContent set to 1 or no RCN |
| API/AE/CRE/001_RCN1 | <AE> CREATE | Create AE with resultContent set to 2 |
| API/AE/CRE/001_RCN2 | <AE> CREATE | Create AE with resultContent set to 3 |
| API/AE/CRE/001_RCN3 | <AE> CREATE | Create AE with resultContent set to 4 |
| API/AE/RET/001 | <AE> RETRIEVE | Retrieve AE with resultContent set to 1 or no RCN |
| API/AE/RET/001_RCN1 | <AE> RETRIEVE | Retrieve AE with resultContent set to 0 |
| API/AE/RET/001_RCN4 | <AE> RETRIEVE | Retrieve AE with resultContent set to 1 or no RCN |
| API/AE/UPD/001_RCN0 | <AE> UPDATE | Update AE with resultContent set to 0 |
| API/AE/UPD/001 | <AE> UPDATE | Update AE with resultContent set to 1 or no RCN |
| API/AE/UPD/001_RCN1 | <AE> UPDATE | Update AE with resultContent set to 0 |
| API/AE/DEL/001_RCN0 | <AE> DELETE | Delete AE with ResultContent set to 0 |
| API/AE/DEL/001 | <AE> DELETE | Delete AE with ResultContent set to 1 or no RCN |
| API/AE/DEL/001_RCN1 | <AE> DELETE | Delete AE with ResultContent set to 1 or no RCN |

| Interface ID | Interface Category | Interface Description |
|------------------------|-------------------------------|--|
| API/CONT/CRE/001_RCN0 | <container> CREATE | Create container with resultContent set to 0 |
| API/CONT/CRE/001 | <container> CREATE | Create container with resultContent set to 1 or no RCN |
| API/CONT/CRE/001_RCN1 | <container> CREATE | Create container with resultContent set to 2 |
| API/CONT/CRE/001_RCN2 | <container> CREATE | Create container with resultContent set to 3 |
| API/CONT/CRE/001_RCN3 | <container> CREATE | Create container with resultContent set to 4 |
| API/CONT/RET/001 | <container> RETRIEVE | Retrieve container with resultContent set to 1 or no RCN |
| API/CONT/RET/001_RCN1 | <container> RETRIEVE | Retrieve container with resultContent set to 2 |
| API/CONT/RET/002_RCN4 | <container> RETRIEVE | Retrieve container with resultContent set to 3 |
| API/CONT/UPD/001_RCN0 | <container> UPDATE | Update container with resultContent set to 0 |
| API/CONT/UPD/001 | <container> UPDATE | Update container with resultContent set to 1 or no RCN |
| API/CONT/UPD/001_RCN1 | <container> UPDATE | Update container with resultContent set to 2 |
| API/CONT/DEL/001_RCN0 | <container> DELETE | Delete container with resultContent set to 0 |
| API/CONT/DEL/001 | <container> DELETE | Delete container with resultContent set to 1 or no RCN |
| API/CONT/DEL/001_RCN1 | <container> DELETE | Delete container with resultContent set to 2 |
| API/CI/CRE/001_RCN0 | <contentInstance> CREATE | Create contentInstance with resultContent set to 0 |
| API/CI/CRE/001 | <contentInstance> CREATE | Create contentInstance with resultContent set to 1 or no RCN |
| API/CI/CRE/001_RCN1 | <contentInstance> CREATE | Create contentInstance with resultContent set to 2 |
| API/CI/CRE/001_RCN2 | <contentInstance> CREATE | Create contentInstance with resultContent set to 3 |
| API/CI/CRE/001_RCN3 | <contentInstance> CREATE | Create contentInstance with resultContent set to 4 |
| API/CI/RET/001_LA | <contentInstance> RETRIEVE | Retrieve a latest contentInstance resource |
| API/CI/RET/001_OL | <contentInstance> RETRIEVE | Retrieve an oldest contentInstance resource |
| API/CI/RET/001_CI | <contentInstance> RETRIEVE | Retrieve a specific contentInstance resource |
| API/CI/DEL/001_LA | <contentInstance> DELETE | Delete a latest contentInstance resource without setting resultContent |
| API/CI/DEL/001_LA_RCN0 | <contentInstance> DELETE | Delete a latest contentInstance resource with resultContent set to 0 |
| API/CI/DEL/001_OL | <contentInstance> DELETE | Delete an oldest contentInstance resource without setting resultContent |
| API/CI/DEL/001_OL_RCN0 | <contentInstance> DELETE | Delete an oldest contentInstance resource with resultContent set to 1 |
| API/CI/DEL/001_CI | <contentInstance> DELETE | Delete a specific contentInstance resource without setting resultContent |
| API/CI/DEL/001_CI_RCN0 | <contentInstance> DELETE | Delete a specific contentInstance resource with resultContent set to 2 |
| API/SMD/CRE/001_RCN0 | <semanticDescriptor> CREATE | Create semanticDescriptor with resultContent set to 0 |
| API/SMD/CRE/001 | <semanticDescriptor> CREATE | Create semanticDescriptor with resultContent set to 1 or no RCN |
| API/SMD/CRE/001_RCN1 | <semanticDescriptor> CREATE | Create semanticDescriptor with resultContent set to 2 |
| API/SMD/CRE/001_RCN3 | <semanticDescriptor> CREATE | Create semanticDescriptor with resultContent set to 3 |
| API/SMD/RET/001 | <semanticDescriptor> RETRIEVE | Retrieve semanticDescriptor with resultContent set to 1 or no RCN |
| API/SMD/RET/001_RCN1 | <semanticDescriptor> RETRIEVE | Retrieve semanticDescriptor with resultContent set to 2 |
| API/SMD/UPD/001_RCN0 | <semanticDescriptor> UPDATE | Update semanticDescriptor with resultContent set to 0 |
| API/SMD/UPD/001 | <semanticDescriptor> UPDATE | Update semanticDescriptor with resultContent set to 1 or no RCN |
| API/SMD/UPD/001_RCN1 | <semanticDescriptor> UPDATE | Update semanticDescriptor with resultContent set to 2 |
| API/SMD/DEL/001_RCN0 | <semanticDescriptor> DELETE | Delete semanticDescriptor with resultContent set to 0 |
| API/SMD/DEL/001 | <semanticDescriptor> DELETE | Delete semanticDescriptor with resultContent set to 1 or no RCN |
| API/SMD/DEL/001_RCN1 | <semanticDescriptor> DELETE | Delete semanticDescriptor with resultContent set to 2 |
| API/DIS_TY2 | Discovery | Discovery with resourceType filter criteria set to 2 |
| API/DIS_TY3 | Discovery | Discovery with resourceType filter criteria set to 3 |
| API/DIS_LBL_ACTUATOR | Discovery | Discovery with labels filter criteria set to actuator |
| API/DIS_LBL_SENSOR | Discovery | Discovery with labels filter criteria set to sensor |
| API/DIS_LVL1 | Discovery | Discovery with level filter criteria set to 1 |
| API/DIS_LVL2 | Discovery | Discovery with level filter criteria set to 2 |
| API/DIS_CRB | Discovery | Discovery with createdBefore filter criteria |
| API/DIS_CRA | Discovery | Discovery with createdAfter filter criteria |
| API/DIS_STB | Discovery | Discovery with stateTagBigger filter criteria |
| API/DIS_STS | Discovery | Discovery with stateTagSmaller filter criteria |
| API/DIS_SZB | Discovery | Discovery with sizeBelow filter criteria |
| API/DIS_SZA | Discovery | Discovery with sizeAbove filter criteria |

| Interface ID | Interface Category | Interface Description |
|----------------------|-------------------------------|---|
| API/DIS_CRB | Discovery | Discovery with unmodifiedSince filter criteria |
| API/DIS_CRA | Discovery | Discovery with modifiedSince filter criteria |
| API/DIS_EXB | Discovery | Discovery with expiredBefore filter criteria |
| API/DIS_EXA | Discovery | Discovery with expiredAfter filter criteria |
| API/SUB/CRE/001_RCN0 | <subscription> CREATE | Create subscription with resultContent set to 0 |
| API/SUB/CRE/001 | <subscription> CREATE | Create subscription with resultContent set to 1 or no RCN |
| API/SUB/CRE/001_RCN1 | <subscription> CREATE | Create subscription with resultContent set to 2 |
| API/SUB/CRE/001_RCN3 | <subscription> CREATE | Create subscription with resultContent set to 3 |
| API/SUB/RET/001 | <subscription> RETRIEVE | Retrieve subscription with resultContent set to 1 or no RCN |
| API/SUB/RET/001_RCN1 | <subscription> RETRIEVE | Retrieve subscription with resultContent set to 1 or no RCN |
| API/SUB/UPD/001_RCN0 | <subscription> UPDATE | Update subscription with resultContent set to 0 |
| API/SUB/UPD/001 | <subscription> UPDATE | Update subscription with resultContent set to 1 or no RCN |
| API/SUB/UPD/001_RCN1 | <subscription> UPDATE | Update subscription with resultContent set to 1 or no RCN |
| API/SUB/DEL/001_RCN0 | <subscription> DELETE | Delete subscription with resultContent set to 0 |
| API/SUB/DEL/001 | <subscription> DELETE | Delete subscription with resultContent set to 1 or no RCN |
| API/SUB/DEL/001_RCN1 | <subscription> DELETE | Delete subscription with resultContent set to 1 or no RCN |
| API/GRP/CRE/001_RCN0 | <group> CREATE | Create group with resultContent set to 0 |
| API/GRP/CRE/001 | <group> CREATE | Create group with resultContent set to 1 or no RCN |
| API/GRP/CRE/001_RCN1 | <group> CREATE | Create group with resultContent set to 2 |
| API/GRP/CRE/001_RCN3 | <group> CREATE | Create group with resultContent set to 3 |
| API/GRP/RET/001 | <group> RETRIEVE | Retrieve group with resultContent set to 1 or no RCN |
| API/GRP/RET/001_RCN1 | <group> RETRIEVE | Retrieve group with resultContent set to 1 or no RCN |
| API/GRP/UPD/001_RCN0 | <group> UPDATE | Update group with resultContent set to 0 |
| API/GRP/UPD/001 | <group> UPDATE | Update group with resultContent set to 1 or no RCN |
| API/GRP/UPD/001_RCN1 | <group> UPDATE | Update group with resultContent set to 1 or no RCN |
| API/GRP/DEL/001_RCN0 | <group> DELETE | Delete group with resultContent set to 0 |
| API/GRP/DEL/001 | <group> DELETE | Delete group with resultContent set to 1 or no RCN |
| API/GRP/DEL/001_RCN1 | <group> DELETE | Delete group with resultContent set to 1 or no RCN |
| API/TS/CRE/001_RCN0 | <timeSeries> CREATE | Create timeSeries with resultContent set to 0 |
| API/TS/CRE/001 | <timeSeries> CREATE | Create timeSeries with resultContent set to 1 or no RCN |
| API/TS/CRE/001_RCN1 | <timeSeries> CREATE | Create timeSeries with resultContent set to 2 |
| API/TS/CRE/001_RCN3 | <timeSeries> CREATE | Create timeSeries with resultContent set to 3 |
| API/TS/RET/001 | <timeSeries> RETRIEVE | Retrieve timeSeries with resultContent set to 1 or no RCN |
| API/TS/RET/001_RCN1 | <timeSeries> RETRIEVE | Retrieve timeSeries with resultContent set to 1 or no RCN |
| API/TS/UPD/001_RCN0 | <timeSeries> UPDATE | Update timeSeries with resultContent set to 0 |
| API/TS/UPD/001_RCN1 | <timeSeries> UPDATE | Update timeSeries with resultContent set to 1 or no RCN |
| API/TS/DEL/001_RCN0 | <timeSeries> DELETE | Delete timeSeries with resultContent set to 0 |
| API/TS/DEL/001 | <timeSeries> DELETE | Delete timeSeries with resultContent set to 1 or no RCN |
| API/TS/DEL/001_RCN1 | <timeSeries> DELETE | Delete timeSeries with resultContent set to 1 or no RCN |
| API/TSI/CRE/001_RCN0 | <timeSeriesInstance> CREATE | Create timeSeriesInstance with resultContent set to 0 |
| API/TSI/CRE/001 | <timeSeriesInstance> CREATE | Create timeSeriesInstance with resultContent set to 1 or no RCN |
| API/TSI/CRE/001_RCN1 | <timeSeriesInstance> CREATE | Create timeSeriesInstance with resultContent set to 2 |
| API/TSI/CRE/001_RCN2 | <timeSeriesInstance> CREATE | Create timeSeriesInstance with resultContent set to 3 |
| API/TSI/CRE/001_RCN3 | <timeSeriesInstance> CREATE | Create timeSeriesInstance with resultContent set to 4 |
| API/TSI/RET/001 | <timeSeriesInstance> RETRIEVE | Retrieve timeSeriesInstance with resultContent set to 1 or no RCN |
| API/TSI/RET/001_RCN1 | <timeSeriesInstance> RETRIEVE | Retrieve timeSeriesInstance with resultContent set to 1 or no RCN |
| API/TSI/DEL/001_RCN0 | <timeSeriesInstance> DELETE | Delete timeSeriesInstance with resultContent set to 0 |
| API/TSI/DEL/001 | <timeSeriesInstance> DELETE | Delete timeSeriesInstance with resultContent set to 1 or no RCN |
| API/TSI/DEL/001_RCN1 | <timeSeriesInstance> DELETE | Delete timeSeriesInstance with resultContent set to 1 or no RCN |
| API/ACP/CRE/001_RCN0 | <accessControlPolicy> CREATE | Create accessControlPolicy with resultContent set to 0 |
| API/ACP/CRE/001 | <accessControlPolicy> CREATE | Create accessControlPolicy with resultContent set to 1 or no RCN |
| API/ACP/CRE/001_RCN1 | <accessControlPolicy> CREATE | Create accessControlPolicy with resultContent set to 2 |
| API/ACP/CRE/001_RCN2 | <accessControlPolicy> CREATE | Create accessControlPolicy with resultContent set to 3 |
| API/ACP/CRE/001_RCN3 | <accessControlPolicy> CREATE | Create accessControlPolicy with resultContent set to 4 |

| Interface ID | Interface Category | Interface Description |
|---|-----------------------------------|--|
| API/ACP/RET/001 API/ACP/RET/001_RCN1 | <accessControlPolicy> RETRIEVE | Retrieve accessControlPolicy with resultContent set to 1 or no RCN |
| API/ACP/UPD/001_RCN0 | <accessControlPolicy> UPDATE | Update accessControlPolicy with resultContent set to 0 |
| API/ACP/UPD/001 API/ACP/UPD/001_RCN1 | <accessControlPolicy> UPDATE | Update accessControlPolicy with resultContent set to 1 or no RCN |
| API/ACP/DEL/001_RCN0 | <accessControlPolicy> DELETE | Delete accessControlPolicy with resultContent set to 0 |
| API/ACP/DEL/001 API/ACP/DEL/001_RCN1 | <accessControlPolicy> DELETE | Delete accessControlPolicy with resultContent set to 1 or no RCN |
| API/FLX/CRE/001_RCN0 | <flexContainer> CREATE | Create flexContainer with resultContent set to 0 |
| API/FLX/CRE/001 API/FLX/CRE/001_RCN1 | <flexContainer> CREATE | Create flexContainer with resultContent set to 1 or no RCN |
| API/FLX/CRE/001_RCN2 | <flexContainer> CREATE | Create flexContainer with resultContent set to 2 |
| API/FLX/CRE/001_RCN3 | <flexContainer> CREATE | Create flexContainer with resultContent set to 3 |
| API/FLX/RET/001 API/FLX/RET/001_RCN1 | <flexContainer> RETRIEVE | Retrieve flexContainer with resultContent set to 1 or no RCN |
| API/FLX/UPD/001_RCN0 | <flexContainer> UPDATE | Update flexContainer with resultContent set to 0 |
| API/FLX/UPD/001 API/FLX/UPD/001_RCN1 | <flexContainer> UPDATE | Update flexContainer with resultContent set to 1 or no RCN |
| API/FLX/DEL/001_RCN0 | <flexContainer> DELETE | Delete flexContainer with resultContent set to 0 |
| API/FLX/DEL/001 API/FLX/DEL/001_RCN1 | <flexContainer> DELETE | Delete flexContainer with resultContent set to 1 or no RCN |

6.2 API details

6.2.1 Introduction

This clause introduces standard APIs to perform CRUD operations on the target resource. Each API has request and response using HTTP binding and JSON serialization, but some resources do not have all CRUD APIs which means that the resource does not support all operations. A result content is only used from 0 to 3 in this clause.

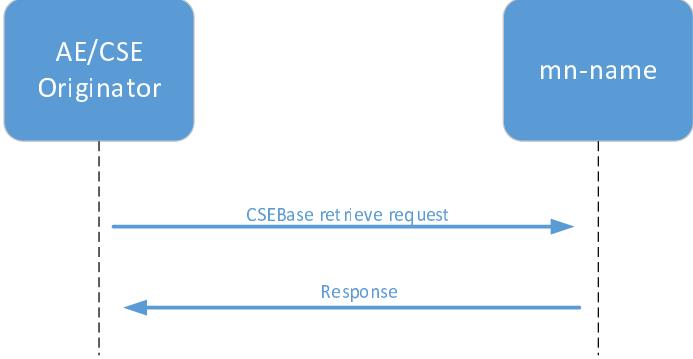
6.2.2 Resource Type *CSEBase*

6.2.2.0 Introduction

A <*CSEBase*> resource represents a CSE and it is the root for all resources that are residing in the CSE. The <*CSEBase*>resource does not support the creation, update, and delete operations via API but only supports retrieve operation.

6.2.2.1 API-CB-RET

| | |
|---|---|
| API Id | API/CB/RET/001 API/CB/RET/001_RCN1 API/CB/RET/001_RCN4 |
| API Name | CSEBase RETRIEVE with or without resultContent parameter |
| Target Resource | < <i>CSEBase</i> > resource of the requested < <i>AE</i> > resource |
| Description | The interface is used to send a < <i>CSEBase</i> > resource RETRIEVE request to CSE, and receive response from the CSE. |
| Resource Structure before Sending Request | mn-name (CSE) |

| Call Flow |  <p>A sequence diagram illustrating the call flow. On the left, a vertical bar labeled "Call Flow" contains two rounded rectangles: "AE/CSE Originator" at the top and "mn-name" at the bottom. A dashed vertical line connects them. Two horizontal arrows connect them: a solid blue arrow pointing from "AE/CSE Originator" to "mn-name" labeled "CSEBase retrieve request", and a dashed blue arrow pointing from "mn-name" back to "AE/CSE Originator" labeled "Response".</p> | | | | | | | | | | | |
|-------------------------|---|--------|-------|--------|-------------------|----------|------------|--------------|---------------------------------|-----------|---------------------------|--|
| HTTP Header Information | <table border="1"><thead><tr><th>Header</th><th>Value</th></tr></thead><tbody><tr><td>Accept</td><td>application/ json</td></tr><tr><td>X-M2M-RI</td><td>Request ID</td></tr><tr><td>X-M2M-Origin</td><td>Entity ID of request originator</td></tr><tr><td>X-M2M-RVI</td><td>Release Version Indicator</td></tr></tbody></table> | Header | Value | Accept | application/ json | X-M2M-RI | Request ID | X-M2M-Origin | Entity ID of request originator | X-M2M-RVI | Release Version Indicator | |
| Header | Value | | | | | | | | | | | |
| Accept | application/ json | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | |
| X-M2M-Origin | Entity ID of request originator | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | |

| | |
|--|---|
| | <p>API/CB/RET/001 API/CB/RET/001_RCN1</p> <p>Example with RCN=1 or No RCN</p> <p>HTTP Request:</p> <pre>GET /mn-name?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 Accept: application/json X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>HTTP/1.1 200 OK X-M2M-RI: 1234 X-M2M-RSC: 2000 Content-Length:344 Content-Type:application/json X-M2M-Origin:/mnID X-M2M-RVI: 2a</pre> <p>{</p> <pre>"m2m:cb": { "acpi": ["mnIDAcP"], "csi": "/mnID", "cst": 2, "czs": ["application/xml", "application/json"], "ct": "20180727T135221", "lb": ["17.0.0+", "ID-CSE-01"], "lt": "20180727T135221", "pi": null, "poa": ["http://192.168.0.10:8282"], "ri": "mnID", "rn": "mn-name", "srt": [1, 2, 3, 4, 5, 9, 12, 13, 14, 15, 16, 18, 23, 17, 11,</pre> |
|--|---|

```
  20,  
  19,  
  28,  
  22,  
  7,  
  21,  
  24,  
  100,  
  8,  
  10  
 ],  
 "srv": [  
   "2a"  
 ],  
 "ty": 5,  
 "srv": [  
   "1",  
   "2",  
   "2a"  
 ]  
 }  
 }
```

| | |
|---------------------------|---|
| Example with RCN=4 | <h3>API/CB/RET/001_RCN4</h3> <p>HTTP Request:</p> <pre>GET /mn-name?rcn=4 HTTP/1.1 Host: 192.168.0.10:8282 Accept: application/json X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>HTTP/1.1 200 OK X-M2M-RI: 1234 X-M2M-RSC: 2000 Content-Length: 1009 Content-Type:application/json X-M2M-Origin:/mnID X-M2M-RVI: 2a</pre> <pre>{ "m2m:cb": { "acpi": ["mnIDAcP"], "csi": "/mnID", "cst": 2, "csz": ["application/xml", "application/json"], "ct": "20180727T135221", "lbl": ["17.0.0+", "ID-CSE-01"], "lt": "20180727T135221", "m2m:acp": [{ "ct": "20180723T141039", "et": "99991231T235959", "lbl": ["cseAcP"], "lt": "20180723T141039", "pi": "mnID", "pv": { "acr": [{ "acco": { "acip": { "ipv4": ["127.0.0.1/0"] }, "actw": ["*** * * * *"] } }, "acop": 63, "acor": ["***"]] } }] } }</pre> |
|---------------------------|---|

```
        ]
      }
    ],
  "pvs": {
    "acr": [
      {
        "acco": {
          "acip": {
            "ipv4": [
              "127.0.0.1/0",
              "127.0.0.1/1"
            ]
          },
          "actw": [
            "* * * * *"
          ]
        },
        "acop": 63,
        "acor": [
          "*"
        ]
      }
    ],
    "ri": "mnIDAcP",
    "rn": "mn-nameAcP",
    "ty": 1
  }
},
"m2m:ae": [
  {
    "aei": "CAE0120180723T1415351396520173012480_cse01",
    "api": "A01.com.company.Temp",
    "ct": "20180723T141535",
    "et": "99991231T235959",
    "lbl": [
      "indoor_temp",
      "room_1"
    ],
    "lt": "20180723T142022",
    "pi": "mnID",
    "ri": "CAE0120180723T1415351396520173012480_cse01",
    "rn": "ae_sensor",
    "rr": false,
    "ty": 2
  }
],
"pi": null,
"poa": [
  "http://192.168.0.10:8282"
],
"ri": "mnID",
"rn": "mn-name",
"srt": [
  1,
  2,
  3,
  4,
  5,
  9,
  12,
  13,
  14,
  15,
  16,
  18,
  23,
```

| | |
|--|--|
| | <pre> 17, 11, 20, 19, 28, 22, 7, 21, 24, 100, 8, 10], "ty": 5, "srv": ["1", "2", "2a"] } </pre> |
|--|--|

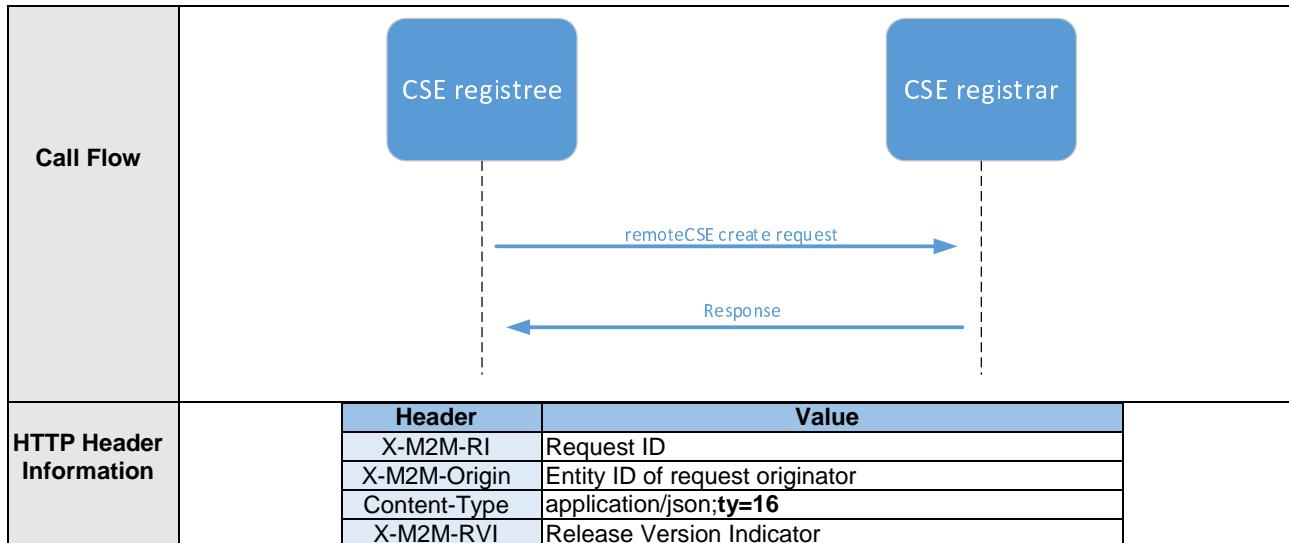
6.2.3 Resource Type *remoteCSE*

6.2.3.0 Introduction

The <remoteCSE> resource represents a Registrant CSE that is registered into a Registrar CSE, and <remoteCSE> locates directly under the <CSEBase> of the Registrar CSE. Similarly, one <remoteCSE> resource will also be created under the <CSEBase> of the Registrant CSE to represent the Registrar CSE when the Registrant CSE is successfully registered into the Registrar CSE.

6.2.3.1 API-CSR-CRE

| | |
|---------------------------|---|
| API Id | API/CSR/CRE/001 API/CSR/CRE/001_RCN1 API/CSR/CRE/001_RCN2 API/CSR/CRE/001_RCN3 API/CSR/CRE/001_RCN4 |
| API Name | remoteCSE CREATE with or without resultContent parameter |
| Target Resource | <remoteCSE> resource |
| Description | The interface is used to send a <remoteCSE> resource CREATE request to CSE, and receive response from the CSE. |
| Resource Structure | <pre> graph TD A[cse-name (CSEBase)] --> B[cse_name2 (remoteCSE)] </pre> |



| | |
|--|---|
| | <h3>API/CSR/CRE/001_RCN0</h3> <p>HTTP Request:</p> <p>POST /cse-name?rcn=0 HTTP/1.1 Host: 192.168.56.102:9011 Content-Type:application/json;ty=16 X-M2M-Origin: C0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>{</p> <p> "m2m:csr": {</p> <p> "cb": "//192.168.0.50:8080/cse-name2",</p> <p> "csi": "/cse2ID",</p> <p> "m": "cse-name2",</p> <p> "rr": true</p> <p> }</p> <p>}</p> <p>HTTP Response:</p> <p>HTTP/1.1 201 Created X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>Content-Length:0 Content-Type:application/json Content-Location: /cseID/cse2ID</p> |
|--|---|

| | |
|-------------------------------------|--|
| Example with RCN=1 or No RCN | <p>API/CSR/CRE/001 API/CSR/CRE/001_RCN1</p> <p>HTTP Request:</p> <pre>POST /cse-name?rcn=1 HTTP/1.1 Host: 192.168.56.102:9011 Content-Type:application/json;ty=16 X-M2M-Origin: C0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:csr": { "cb": "//192.168.56.50:8080/cse-name2", "csi": "/cse2ID", "rn": "cse-name2", "rr": true } }</pre> <p>HTTP Response:</p> <pre>HTTP/1.1 201 Created X-M2M-RI: 1234 X-M2M-RSC: 2001 X-M2M-RVI: 2a Content-Length:216 Content-Type:application/json Content-Location: /cseID/cse2ID</pre> <p>{</p> <pre>"m2m:csr": { "cb": "//192.168.0.50:8080/cse-name2", "csi": "/cse2ID", "ct": "20200604T123044,616218", "et": "99991231T235959", "lt": "20200604T123044,616218", "pi": "ID-CSE-01", "ri": "cse2ID", "rn": "cse-name2", "rr": false, "ty": 16 }</pre> <p>}</p> |
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| | <p>API/CSR/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>Example with RCN=2</p> <pre>POST /cse-name?rcn=2 HTTP/1.1 Host: 192.168.56.102:9011 Content-Type:application/json;ty=16 X-M2M-Origin: C0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:csr": { "cb": "//192.168.0.50:8080/cse-name2", "csi": "/cse2ID", "m": "cse-name2", "rr": true } }</pre> <p>HTTP Response:</p> <pre>HTTP/1.1 201 Created X-M2M-RI: 1234 X-M2M-RSC: 2001 X-M2M-RVI: 2a Content-Length:30 Content-Type:application/json Content-Location: /cseID/cse2ID {"m2m:uri":"cse-name/cse-name2"}</pre> |
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| Example with RCN=3 | <h3>API/CSR/CRE/001_RCN3</h3> <p>HTTP Request:</p> <pre>POST /cse-name?rcn=3 HTTP/1.1 Host: 192.168.56.102:9011 Content-Type:application/json;ty=16 X-M2M-Origin: C0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:csr": { "cb": "//192.168.0.50:8080/cse-name2", "csi": "/cse2ID", "rn": "cse-name2", "rr": true } }</pre> <p>HTTP Response:</p> <pre>HTTP/1.1 201 Created X-M2M-RI: 1234 X-M2M-RSC: 2001 X-M2M-RVI: 2a Content-Length:264 Content-Type:application/json Content-Location: /cseID/cse2ID { "m2m:rce": { "m2m:csr": { "cb": "//192.168.56.2:8282/cse-name2", "csi": "/cse2ID", "ct": "20180801T093501", "et": "99991231T235959", "lt": "20180801T093501", "pi": "cseID", "poa": ["http://192.168.56.2:8282"], "ri": "cse2ID", "rn": "cse-name2", "rr": true, "ty": 16, "srv": ["1", "2", "2a"] }, "uri": "cse-name/cse-name2" } }</pre> |
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6.2.3.2 API-CSR-RET

| API Id | API/CSR/RET/001 API/CSR/RET/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|--------|-------------------|----------|------------|--------------|---------------------------------|-----------|---------------------------|
| API Name | remoteCSE RETRIEVE with or without resultContent parameter | | | | | | | | | | |
| Target Resource | <remoteCSE> resource located under <CSEBase> of the hosting CSE | | | | | | | | | | |
| Description | The interface is used to send a <remoteCSE> RETRIEVE request attached with resultContent to a hosting CSE, and the hosting CSE will send back a response containing attributes of the requested <remoteCSE> resource. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD A[cse-name (CSE)] --> B[cse_name2 (CSE)] </pre> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant Originator as Originator (AE/CSE) participant HostingCSE as Hosting CSE cse-name Originator->>HostingCSE: remoteCSE retrieve request HostingCSE-->>Originator: Response </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/ json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>Entity ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/ json | X-M2M-RI | Request ID | X-M2M-Origin | Entity ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/ json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | Entity ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |

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| | <p>API/CSR/RET/001 API/CSR/RET/001_RCN1</p> <p>Example with RCN=1 or No RCN</p> <p>HTTP Request:</p> <pre>GET /cse-name/cse-name2?rcn=1 HTTP/1.1 Host: 192.168.56.102:9011 Accept: application/json X-M2M-Origin: C0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>HTTP/1.1 200 OK X-M2M-RI: 1234 X-M2M-RSC: 2000 X-M2M-RVI: 2a Content-Length:227 Content-Type:application/json</pre> <pre>{ "m2m:csr": { "cb": "//192.168.56.2:8282/cse-name2", "csi": "/cse2ID", "ct": "20180801T093501", "et": "99991231T235959", "lt": "20180801T093501", "pi": "cseID", "poa": ["http://192.168.56.2:8282"], "ri": "cse2ID", "rn": "cse-name2", "rr": true, "ty": 16, "srv": ["1", "2", "2a"] } }</pre> |
|--|--|

6.2.3.3 API-CSR-UPD

| API Id | API/CSR/UPD/001 API/CSR/UPD/001_RCN0 API/CSR/UPD/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|--------------|------------------|----------|------------|--------------|------------------------------|-----------|---------------------------|
| API Name | remoteCSE UPDATE with or without resultContent parameter | | | | | | | | | | |
| Target Resource | <remoteCSE> resource located under <CSEBase> of the hosting CSE | | | | | | | | | | |
| Description | The interface is used to send a <remoteCSE> UPDATE request attached with resultContent to a hosting CSE, and the hosting CSE will send back a response resultContent. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD A[cse-name (CSE)] --- B[cse_name2 (CSE)] </pre> | | | | | | | | | | |
| Call Flow | <pre> graph LR A[CSE Originator] -- "remoteCSE update request" --> B[Hosting CSE cse-name] B -- Response --> A </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Content-Type</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>CSE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Content-Type | application/json | X-M2M-RI | Request ID | X-M2M-Origin | CSE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | CSE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/CSR/UPD/001_RCN0</p> <p>EXAMPLE: Demonstrate the update of the <pointOfAccess> attribute of <remoteCSE> resource.</p> <p>HTTP Request:</p> <pre> PUT /cse-name/cse-name2?rcn=0 HTTP/1.1 Host: 192.168.56.102:9011 Content-Type: application/json X-M2M-Origin: C0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <pre> { "m2m:csr": { "poa": ["http://192.168.0.101:8282"] } } </pre> <p>HTTP Response:</p> <p>HTTP/1.1 200 OK</p> | | | | | | | | | | |

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| | <p>X-M2M-RI: 1234 X-M2M-RSC: 2004 X-M2M-RVI: 2a Content-Length:0</p> |
| Example with RCN=1 or No RCN | <p>API/CSR/UPD/001 API/CSR/UPD/001_RCN1</p> <p>EXAMPLE: Demonstrate the update of the <pointOfAccess> attribute of <remoteCSE> resource.</p> <p>HTTP Request:</p> <pre>PUT /cse-name/cse-name2?rcn=1 HTTP/1.1 Host: 192.168.56.102:9011 Accept: application/json X-M2M-Origin: C0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:csr": { "poa": ["http://192.168.0.100:8282"] } }</pre> <p>HTTP Response:</p> <pre>HTTP/1.1 200 OK X-M2M-RI: 1234 X-M2M-RSC: 2004 X-M2M-RVI: 2a Content-Length:251 Content-Type:application/json { "m2m:csr": { "cb": "//192.168.56.2:8282/cse-name2", "csi": "/cse2ID", "ct": "20180801T093501", "et": "99991231T235959", "lt": "20180801T095839", "pi": "cseID", "poa": ["http://192.168.0.100:8282"], "ri": "cse2ID", "rn": "cse-name2", "rr": true, "ty": 16 "srv": ["1", "2", "2a"] } }</pre> |

6.2.3.4 API-CSR-DEL

| API Id | API/CSR/DEL/001 API/CSR/DEL/001_RCN0 API/CSR/DEL/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|--------|------------------|----------|------------|--------------|------------------------------|-----------|---------------------------|
| API Name | remoteCSE DELETE with or without resultContent parameter | | | | | | | | | | |
| Target Resource | <remoteCSE> resource located under <CSEBase> of the hosting CSE | | | | | | | | | | |
| Description | The interface is used to send a <remoteCSE> DELETE request attached with resultContent set to 0 to the hosting CSE, and the hosting CSE will delete the <remoteCSE> resource and send back a response containing the response status code of the DELETE operation. | | | | | | | | | | |
| Resource Structure before Sending Request | | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant CSE_Originator participant Hosting_CSE CSE_Originator->>Hosting_CSE: remoteCSE delete request Hosting_CSE-->>CSE_Originator: Response </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>CSE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | CSE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | CSE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/CSR/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre> DELETE /cse-name/cse-name2?rcn=0 HTTP/1.1 Host: 192.168.56.102:9011 Accept: application/json X-M2M-Origin: C0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a Content-Length:0 </pre> <p>HTTP Response:</p> <pre> HTTP/1.1 200 OK X-M2M-RI: 1234 X-M2M-RSC: 2002 X-M2M-RVI: 2a Content-Length:0 </pre> | | | | | | | | | | |
| | <p>API/CSR/DEL/001 API/CSR/DEL/001_RCN1</p> | | | | | | | | | | |

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| Example with RCN=1 or No RCN | <p>HTTP Request:</p> <pre>DELETE /cse-name/cse-name2 HTTP/1.1 Host: 192.168.56.102:9011 Accept: application/json X-M2M-Origin: C0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>HTTP/1.1 200 OK X-M2M-RI: 1234 X-M2M-RSC: 2004 X-M2M-RVI: 2a Content-Length:228 Content-Type:application/json</pre> <pre>{ "m2m:csr": { "cb": "//192.168.56.2:8282/cse-name2", "csi": "/cse2ID", "ct": "20180801T093501", "et": "99991231T235959", "it": "20180801T100431", "pi": "cseID", "poa": ["http://192.168.0.101:8282"], "ri": "cse2ID", "rn": "cse-name2", "rr": true, "ty": 16, "srv": ["1", "2", "2a"] } }</pre> |
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6.2.4 Resource Type *AE*

6.2.4.0 Introduction

The <AE> resource represents information about an Application Entity that is registered to a CSE. The originator of an <AE> create request is and only can be an AE. A CSE is not allowed to initiate an <AE> create request.

The <AE> resource which resides in different kind of nodes such as Application Dedicated Node, Middle Node, Infrastructure Node, etc. An Application Dedicated Node could reside in a constrained M2M device, while a Middle Node could reside in an M2M gateway and an Infrastructure Node could reside in an M2M Service Infrastructure. For example, in smart home scenario, light bulbs are modelled as Application Dedicated Node which communicate with home gateway which is modelled as a Middle Node and in resource registration phase, light bulbs can be registered as an <AE> resource.

6.2.4.1 API-AE-CRE

| API Id | API/AE/CRE/001 API/AE/CRE/001_RCN0 API/AE/CRE/001_RCN1 API/AE/CRE/001_RCN2 API/AE/CRE/001_RCN3 | | | | | | | | | | |
|--|--|--------|-------|----------|------------|--------------|-----------------------------|--------------|-----------------------|-----------|---------------------------|
| API Name | AE CREATE with or without resultContent parameter | | | | | | | | | | |
| Target Resource | <CSEBase> resource of the requested <AE> resource | | | | | | | | | | |
| Description | The interface is used by a AE Registrant to send an <AE> CREATE request to a Registrar CSE and the Registrar CSE creates an <AE> resource and sends back a response to the AE Registrant according to the configured resultContent parameter. A sensor is registered to the platform by sending an <AE> registration request to the CSEBase. | | | | | | | | | | |
| Resource Structure before Sending Request | <div style="border: 1px solid black; padding: 5px; display: inline-block;">mn-name (CSE)</div> | | | | | | | | | | |
| Call Flow | <pre> graph LR AE[AE Registrant] -- "AE create request" --> mn[mn-name] mn -- "Response" --> AE </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json;ty=2</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json;ty=2 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json;ty=2 | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/AE/CRE/001_RCN0</p> <p>HTTP Request:</p> <pre> POST /mn-name?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: C Content-Type: application/json;ty=2 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ae": { "api": "A01.com.company.Temperature1", "lbl": ["indoor_temperature", "room_1"], "rr": false, "rn": "ae_sensor" } } </pre> | | | | | | | | | | |

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| | <p>HTTP Response:</p> <p>201 Created Content-Length:0 Content-Location:/mnID/CAE0120180404T0830181405122857960960_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001</p> |
| Example with RCN=1 or No RCN | <p>API/AE/CRE/001 API/AE/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /mn-name HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: C Content-Type: application/json;ty=2 X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre>{ "m2m:ae": { "api": "A01.com.company.Temperature", "lbl": ["indoor_temperature", "room_1"], "rr": false, "rn": "ae_sensor" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> |

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| | <pre> Content-Length:310 Content-Location:/mnID/CAE0120180404T0833201405122522252800_cse01 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001 { "m2m:ae": { "aei": "CAE0120180404T0833201405122522252800_cse01", "api": "A01.com.company.Temperature", "ct": "20180404T083320", "et": "99991231T235959", "lbl": ["indoor_temperature", "room_1"], "lt": "20180404T083320", "pi": "mnID", "ri": "CAE0120180404T0833201405122522252800_cse01", "rn": "ae_sensor", "rr": false, "ty": 2, "srv": ["1", "2", "2a"] } } </pre> |
| Example with RCN=2 | <p>API/AE/CRE/001_RCN2</p> <p>HTTP Request:</p> <pre> POST /mn-name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: C Content-Type: application/json;ty=2 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ae": { "api": "A01.com.company.Temperature", "lbl": ["indoor_temperature", "room_1"], "rr": false, "rn": "ae_sensor" } } </pre> <p>HTTP Response:</p> <p>201 Created</p> |

| | |
|--------------------|---|
| | <pre>Content-Length:40 Content-Location:/mnID/CAE0120180404T0836301405122354398720_cse01 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001 { "m2m:uri": "mn-name/ae_sensor" }</pre> |
| Example with RCN=3 | <p>API/AE/CRE/001_RCN3</p> <p>HTTP Request:</p> <pre>POST /mn-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: C Content-Type: application/json;ty=2 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ae": { "api": "A01.com.company.Temperature", "lbl": ["indoor_temperature", "room_1"], "rr": false, "rn": "ae_sensor" } }</pre> <p>HTTP Response:</p> <pre>201 Created</pre> |

```
Content-Length:355
Content-Location:/mnID/CAE0120180404T0838301405122186544640_cse01
Content-Type:application/json
X-M2M-RI:1234
X-M2M-RVI: 2a
X-M2M-RSC:2001

{
  "m2m:rce": {
    "m2m:ae": {
      "aei": "CAE0120180404T0838301405122186544640_cse01",
      "api": "A01.com.company.Temperature",
      "ct": "20180404T083830",
      "et": "99991231T235959",
      "lbl": [
        "lbl": [
          "indoor_temperature",
          "room_1"
        ],
        "lt": "20180404T083830",
        "pi": "mnID",
        "ri": "CAE0120180404T0838301405122186544640_cse01",
        "rn": "ae_sensor",
        "rr": false,
        "ty": 2,
        "srv": [
          "1",
          "2",
          "2a"
        ]
      ],
      "uri": "mn-name/ae_sensor"
    }
  }
}
```

6.2.4.2 API-AE-RET

| API Id | API/AE/RET/001_RCN1 API/AE/RET/001_RCN4 | | | | | | | | | | |
|--|---|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | AE RETRIEVE with or without resultContent parameter | | | | | | | | | | |
| Target Resource | The <AE> resource located under <CSEBase> | | | | | | | | | | |
| Description | The interface is used to send an <AE> RETRIEVE request attached with resultContent to the <AE> resource located under the <CSEBase> of the CSE, and the hosting CSE will send back a response according to the configured resultContent. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD CSE[mn-name (CSE)] --- AE[ae_sensor (AE)] </pre> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant AE_Registrer as AE Registrer participant mn_name as mn-name AE_Registrer->>mn_name: AE retrieve request mn_name-->>AE_Registrer: Response </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=1 or No RCN | <p>API/AE/RET/001 API/AE/RET/001_RCN1</p> <p>HTTP Request:</p> <pre> GET /mn-name/ae_sensor HTTP/1.1 Accept: application/json Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0838301405122186544640_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Length:308 Content-Type:application/json X-M2M-RI:1234 X-M2M-RSC:2000 </pre> | | | | | | | | | | |

| | |
|---------------------------|--|
| | <pre>{ "m2m:ae": { "aei": "CAE0120180404T0838301405122186544640_cse01", "api": "A01.com.company.Temperature", "ct": "20180404T083830", "et": "99991231T235959", "lbl": ["indoor_temperature", "room_1"], "lt": "20180404T083830", "pi": "mnID", "ri": "CAE0120180404T0838301405122186544640_cse01", "rn": "ae_sensor", "rr": false, "ty": 2, "srv": ["1", "2", "2a"] } }</pre> |
| Example with RCN=4 | <p>API/AE/RET/001_RCN4</p> <p>HTTP Request:</p> <pre>GET /mn-name/ae_sensor?rcn=4 HTTP/1.1 Accept: application/json Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0838301405122186544640_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a // In the example, the <AE> has 2 child <container> resources cont_temp1 and cont_temp2</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:874 Content-Type:application/json X-M2M-RI:1234</pre> |

```
X-M2M-RVI: 2a
X-M2M-RSC:2000

{
  "m2m:ae": {
    "aei": "CAE0120180404T0838301405122186544640_cse01",
    "api": "A01.com.company.Temperature",
    "ct": "20180404T083830",
    "et": "99991231T235959",
    "lbl": [
      "indoor_temperature",
      "room_1"
    ],
    "lt": "20180404T084508",
    "m2m:cnt": [
      {
        "cbs": 0,
        "cni": 0,
        "ct": "20180404T084508",
        "et": "99991231T235959",
        "lbl": [
          "indoor_temp"
        ],
        "lt": "20180404T084508",
        "mbs": 60000000,
        "mia": 1600,
        "mni": 10000,
        "pi": "CAE0120180404T0838301405122186544640_cse01",
        "ri": "cnt20180404T0845081405122522252801_cse01",
        "rn": "cont_temp2",
        "st": 0,
        "ty": 3
      },
      {
        "cbs": 0,
        "cni": 0,
        "ct": "20180404T084503",
        "et": "99991231T235959",
        "lbl": [
          "indoor_temp"
        ],
        "lt": "20180404T084503",
        "mbs": 60000000,
        "mia": 1600,
        "mni": 10000,
        "pi": "CAE0120180404T0838301405122186544640_cse01",
        "ri": "cnt20180404T0845031405122606179840_cse01",
        "rn": "cont_temp1",
        "st": 0,
        "ty": 3
      }
    ],
    "pi": "mnID",
    "ri": "CAE0120180404T0838301405122186544640_cse01",
    "rn": "ae_sensor",
    "rr": false,
    "ty": 2,
    "srv": [
      "1",
      "2",
      "2a"
    ]
  }
}
```

6.2.4.3 API-AE-UPD

| API Id | API/AE/UPD/001 API/AE/UPD/001_RCN0 API/AE/UPD/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------|-----------|---------------------------|
| API Name | AE UPDATE with or without resultContent set | | | | | | | | | | |
| Target Resource | The <AE> resource located under <CSEBase> resource of CSE | | | | | | | | | | |
| Description | The interface is used to send an <AE> UPDATE request to the target <AE> resource under the CSE, and the hosting CSE will send back a response only containing the response status code indicating the request processing status. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD CSE["mn-name (CSE)"] --> AE["ae_sensor (AE)"] </pre> | | | | | | | | | | |
| Call Flow | <pre> graph LR AE[AE Registrer] -- "AE update request" --> MN[mn-name] MN -- "Response" --> AE </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/AE/UPD/001_RCN0</p> <p>HTTP Request:</p> <pre> PUT /mn-name/ae_sensor?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0838301405122186544640_cse01 Content-Type:application/json Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ae": { "poa": ["http://ae.temp.com:9090"], "rr":true } } </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Length:0 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2004 </pre> | | | | | | | | | | |

| | |
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| | |
| Example with RCN=1 or No RCN | <p>API/AE/UPD/001_RCN1</p> <p>HTTP Request:</p> <pre>PUT /mn-name/ae_sensor HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0838301405122186544640_cse01 Content-Type:application/json Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ae": { "poa": ["http://ae.temp.com:9090"], "rr": true } }</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:341 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2004 { "m2m:ae": { "aei": "CAE0120180404T0838301405122186544640_cse01", "api": "A01.com.company.Temperature", "ct": "20180404T083830", "et": "99991231T235959", "lb": ["indoor_temperature", "room_1"], "lt": "20180404T085903", "pi": "mnID", "poa": ["http://ae.temp.com:9090"], "ri": "CAE0120180404T0838301405122186544640_cse01", "rn": "ae_sensor", "rr": true, "ty": 2, "srv": ["1", "2", "2a"] } }</pre> |

6.2.4.4 API-AE-DEL

| API Id | API/AE/DEL/001 API/AE/DEL/001_RCN0 API/AE/DEL/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | AE DELETE | | | | | | | | | | |
| Target Resource | The <AE> resource located under <CSEBase> resource of CSE | | | | | | | | | | |
| Description | The interface is used to send an <AE> DELETE request to the hosting CSE, and the hosting CSE will delete the <AE> and send back a response containing a response status code indicating the DELETE request status. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] </pre> | | | | | | | | | | |
| Call Flow | <pre> graph LR AE[AE Registrer] --- mn[mn-name] mn --- AE AE -- "AE update request" --> mn mn -- "Response" --> AE </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/AE/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre> DELETE /mn-name/ae_sensor?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0838301405122186544640_cse01 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Length:0 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002 </pre> | | | | | | | | | | |

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| Example with RCN=1 or no RCN | <p>API/AE/DEL/001 API/AE/DEL/001_RCN1</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_sensor HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0904581405122774033921_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:308 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002 { "m2m:ae": { "aei": "CAE0120180404T0904581405122774033921_cse01", "api": "A01.com.company.Temperature", "ct": "20180404T090458", "et": "99991231T235959", "lbl": ["indoor_temperature", "room_1"], "lt": "20180404T090556", "pi": "mnID", "ri": "CAE0120180404T0904581405122774033921_cse01", "rn": "ae_sensor", "rr": false, "ty": 2, "srv": ["1", "2", "2a"] } }</pre> |
|-------------------------------------|---|

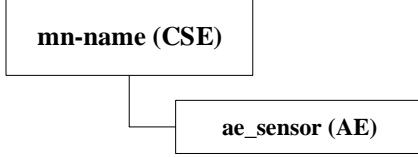
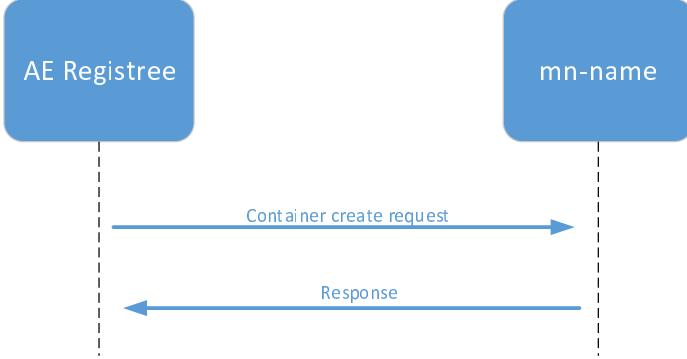
6.2.5 Resource Type *container*

6.2.5.0 Introduction

The <container> resource represents a container for data instances. It is used to share information with other entities and potentially to track the data. A <container> resource has no associated content. It has only attributes and child resources.

The <container> resource can be seen as a container of a group of data instances with same characteristics, for example, sensor measurement of temperature, humidity, illumination, CO2, etc. For example, when a temperature sensor is modelled as application dedicated node and registered with an <AE> resource, a <container> resource can be created under the created <AE> as its child resource to contain temperature measurements. Note that <container> resource has no associated content and the real data is contained in a child resource of container called <contentInstance> which will be introduced in clause 6.2.6.

6.2.5.1 API-CONT-CRE

| API Id | API/CONT/CRE/001 API/CONT/CRE/001_RCN0 API/CONT/CRE/001_RCN1 API/CONT/CRE/001_RCN2 API/CONT/CRE/001_RCN3 | | | | | | | | | | |
|--|--|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------------|-----------|---------------------------|
| API Name | container CREATE with and without resultContent parameter | | | | | | | | | | |
| Target Resource | <AE> resource as a parent resource of the requested <container> resource | | | | | | | | | | |
| Description | The interface is used to send a <container> CREATE request attached with resultContent under the <AE> resource located in the <CSEBase>. The hosting CSE will create the <container> resource under the <AE>, and send back a response according to the configured resultContent. | | | | | | | | | | |
| Resource Structure before Sending Request |  | | | | | | | | | | |
| Call Flow |  | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>Content-Type</td><td>application/json; ty=3</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json; ty=3 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json; ty=3 | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with No RCN or RCN=1 | <p>API/CONT/CRE/001 API/CONT/CRE/001_RCN1</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Content-Type: application/json;ty=3 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cnt": { "rn": "cont_temp" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Length:265 Content-Location:/mnID/cnt20180406T0857121405855183193600_cse01 Content-Type:application/json X-M2M-RI:1234</pre> | | | | | | | | | | |

| | |
|--------------------|---|
| | <pre>X-M2M-RVI: 2a X-M2M-RSC:2001 { "m2m:cnt": { "cbs": 0, "cni": 0, "ct": "20180406T085712", "et": "99991231T235959", "lt": "20180406T085712", "mbs": 60000000, "mia": 1600, "mni": 10000, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T0857121405855183193600_cse01", "rn": "cont_temp", "st": 0, "ty": 3 } }</pre> |
| Example with RCN=0 | <p>API/CONT/CRE/001_RCN/0</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Content-Type: application/json;ty=3 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cnt": { "rn": "cont_temp" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Length:0 Content-Location: /mnID/cnt20180406T0922111405855351047681_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001</pre> |
| Example with RCN=2 | <p>API/CONT/CRE/001_RCN2</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Content-Type: application/json;ty=3 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cnt": { "rn": "cont_temp" } }</pre> |

| | |
|---------------------------|---|
| | <p>HTTP Response:</p> <pre>201 Created Content-Length:50 Content-Location:/mnID/cnt20180406T0924461405855854609922_cse01 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001 { "m2m:uri": "mn-name/ae_sensor/cont_temp" }</pre> |
| Example with RCN=3 | <p>API/CONT/CRE/001_RCN3</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Content-Type: application/json;ty=3 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cnt": { "rn": "cont_temp" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Length:322 Content-Location:/mnID/cnt20180406T0927581405855602828800_cse01 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001 { "m2m:rce": { "m2m:cnt": { "cbs": 0, "cni": 0, "ct": "20180406T092758", "et": "99991231T235959", "it": "20180406T092758", "mbs": 60000000, "mia": 1600, "mni": 10000, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T0927581405855602828800_cse01", "rn": "cont_temp", "st": 0, "ty": 3 }, "uri": "mn-name/ae_sensor/cont_temp" } }</pre> |

6.2.5.2 API-CONT-RET

| API Id | API/CONT/RET/001 API/CONT/RET/001_RCN1 API/CONT/RET/001_RCN4 | | | | | | | | | | |
|--|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | container RETRIEVE with or without resultContent parameter set | | | | | | | | | | |
| Target Resource | Requested <container> resource | | | | | | | | | | |
| Description | The interface is used to send a <container> RETRIEVE request attached with resultContent to the <container> resource located in the <CSEBase>. The hosting CSE will send back a response according to the configured resultContent. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] ae --- cont[cont_temp (container)] </pre> <p>The diagram shows a hierarchical structure of resources. At the top is a box labeled "mn-name (CSE)". A line connects it to a box labeled "ae_sensor (AE)" below it. Another line connects "ae_sensor (AE)" to a box labeled "cont_temp (container)" at the bottom.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR AE[AE Registrant] --> mn[mn-name] mn -- "Container retrieve request" --> AE AE -- "Response" --> mn </pre> <p>The diagram illustrates the call flow between an "AE Registrant" and a "mn-name". An arrow labeled "Container retrieve request" points from the AE Registrant to the mn-name. A return arrow labeled "Response" points from the mn-name back to the AE Registrant.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with No RCN or RCN=1 | <p>API/CONT/RET/001 API/CONT/RET/001_RCN/1</p> <p>HTTP Request:</p> <pre> GET /mn-name/ae_sensor/cont_temp HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Length:265 Content-Type:application/json X-M2M-RI:1234 </pre> | | | | | | | | | | |

| | |
|--------------------|--|
| | <p>X-M2M-RVI: 2a X-M2M-RSC:2000</p> <pre>{ "m2m:cnt": { "cbs": 0, "cni": 0, "ct": "20180406T092758", "et": "99991231T235959", "lt": "20180406T092758", "mbs": 60000000, "mia": 1600, "mni": 10000, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T0927581405855602828800_cse01", "rn": "cont_temp", "st": 0, "ty": 3 } }</pre> |
| Example with RCN=4 | <p>API/CONT/RET/001_RCN4</p> <p>HTTP Request:</p> <pre>GET /mn-name/ae_sensor/cont_temp?rcn=4 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE3878123815422295646 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>// Container <cont_temp> has 2 child <contentinstance> resources</p> <p>HTTP Response:</p> <pre>200 OK Content-Length:1347 Content-Type:application/json X-M2M-Origin:/mnID X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC:2000 { "m2m:cnt": { "cbs": 6, "cni": 2, "ct": "20180406T092758", "et": "99991231T235959", "lt": "20180406T094838", "m2m:cin": [{ "con": "27", "cs": 3, "ct": "20180406T094838", "et": "99991231T235959", "lt": "20180406T094838", "pi": "cnt20180406T0927581405855602828800_cse01", "ri": "cin20180406T0948381405855183193602_cse01", "rn": "cin20180406T0948381405855183193601_cse01", "st": 2, "ty": 4 }, { "con": "27", "cs": 3, "ct": "20180406T094838", "et": "99991231T235959", "lt": "20180406T094838", "pi": "cnt20180406T0927581405855602828800_cse01", "ri": "cin20180406T0948381405855183193602_cse01", "rn": "cin20180406T0948381405855183193601_cse01", "st": 2, "ty": 4 }] } }</pre> |

| | |
|--|---|
| | <pre> "con": "28", "cs": 3, "ct": "20180406T094719", "et": "99991231T235959", "lt": "20180406T094719", "pi": "cnt20180406T0927581405855602828800_cse01", "ri": "cin20180406T0947191405855686755841_cse01", "rn": "cin20180406T0947191405855686755840_cse01", "st": 1, "ty": 4 }], "mbs": 60000000, "mia": 1600, "mni": 10000, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T0927581405855602828800_cse01", "rn": "cont_temp", "st": 2, "ty": 3 } } </pre> |
|--|---|

6.2.5.3 API-CONT-UPD

| | |
|--|---|
| API Id | API/CONT/UPD/001 API/CONT/UPD/001_RCN0 API/CONT/UPD/001_RCN1 |
| API Name | container UPDATE with or without resultContent set |
| Target Resource | Requested <container> resource |
| Description | The interface is used to send a <container> UPDATE request to the target <container> resource located under the CSE, and the hosting CSE will respond with only the response status code to indicate the UPDATE operation status. |
| Resource Structure before Sending Request | <pre> graph TD CSE[mn-name (CSE)] --- AE[ae_sensor (AE)] AE --- CONT[cont_temp (container)] </pre> <p>The diagram shows a hierarchical structure of resources. At the top is a box labeled "mn-name (CSE)". A line descends from it to a box labeled "ae_sensor (AE)". From "ae_sensor (AE)", a line descends to a box labeled "cont_temp (container)". This represents the resource structure before sending a request.</p> |
| Call Flow | <pre> sequenceDiagram participant AE_Registree participant mn_name AE_Registree->>mn_name: Container update request mn_name-->>AE_Registree: Response </pre> <p>The call flow diagram illustrates the interaction between an "AE Registree" and a "mn-name". An arrow points from the "AE Registree" to the "mn-name" with the label "Container update request". A return arrow points from the "mn-name" back to the "AE Registree" with the label "Response".</p> |

| HTTP Header Information | | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>Content-Type</td><td>application/json</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
|-------------------------------------|-----------------------------|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------|-----------|---------------------------|
| Header | Value | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | |
| Example with RCN=0 | | <p>API/CONT/UPD/001_RCN0</p> <p>HTTP Request:</p> <pre>PUT /mn-name/ae_sensor/cont_temp?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Content-Type: application/json X-M2M-RI:1234 X-M2M-RVI: 2a { "m2m:cnt": { "mni": 400, "lbl": ["indoor_temperature"] } }</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:0 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2004</pre> | | | | | | | | | | |
| Example with No RCN or RCN=1 | | <p>API/CONT/UPD/001</p> <p>HTTP Request:</p> <pre>PUT /mn-name/ae_sensor/cont_temp HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Accept: application/json X-M2M-RI:1234 X-M2M-RVI: 2a { "m2m:cnt": { "mni": 300, "lbl": ["indoor_temp"] } }</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:285 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2004</pre> | | | | | | | | | | |

| | |
|--|--|
| | <pre>{ "m2m:cnt": { "cbs": 0, "cni": 0, "ct": "20180406T125807", "et": "99991231T235959", "lbl": ["indoor_temp"], "lt": "20180406T130109", "mbs": 60000000, "mia": 1600, "mni": 300, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T1258071405855183193603_cse01", "rn": "cont_temp", "st": 1, "ty": 3 } }</pre> |
|--|--|

6.2.5.4 API-CONT-DEL

| API Id | API/CONT/DEL/001 API/CONT/DEL/001_RCN0 | | | | | | | | | | |
|---|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------|-----------|---------------------------|
| API Name | container DELETE with no resultContent (or resultContent set to 0) | | | | | | | | | | |
| Target Resource | Requested <container> resource | | | | | | | | | | |
| Description | The interface is used to send a <container> DELETE request to a target <container> resource located under the CSE, and the hosting CSE will respond with only response status code to indicate the DELETE operation status. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] ae --- cont[cont_temp (container)] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSE)". A line descends from it to a box labeled "ae_sensor (AE)". From "ae_sensor (AE)", a line descends to a box labeled "cont_temp (container)".</p> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant AE as AE Registrée participant CSE as mn-name AE->>CSE: Container delete request CSE-->>AE: Response </pre> <p>The call flow diagram illustrates the interaction between an "AE Registrée" (represented by a blue rounded rectangle) and a "mn-name" (represented by a blue rounded rectangle). A horizontal dashed line connects them. An arrow points from the "AE Registrée" to the "mn-name" with the label "Container delete request". Another arrow points back from the "mn-name" to the "AE Registrée" with the label "Response".</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |

| | |
|-------------------------------------|--|
| Example with RCN=0 | <p>API/CONT/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_sensor/cont_temp?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:0 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002</pre> |
| Example with No RCN or RCN=1 | <p>API/CONT/DEL/001</p> <p>API/CONT/DEL/001_RCN1</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_sensor/cont_temp HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK X-M2M-Origin:/mnID X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002 { "m2m:cnt": { "cbs": 0, "cni": 0, "ct": "20180406T125807", "et": "99991231T235959", "lbl": ["indoor_temp"], "lt": "20180406T130330", "mbs": 60000000, "mia": 1600, "mnl": 400, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T1258071405855183193603_cse01", "rn": "cont_temp", "st": 2, "ty": 3 } }</pre> |

6.2.6 Resource Type *contentInstance*

6.2.6.0 Introduction

The <contentInstance> resource represents a data instance stored in the <container> resource. Taking a temperature sensor device as an example, the temperature sensor is designed to collect temperature data of environment and in this case, the real temperature data is modelled as a <contentInstance> resource. In details, we assume both the temperature sensor is registered with <AE> resource and a <container> resource is created under the <AE> to store temperature instances, under this consumption, whenever the temperature data is uploaded into a central server, the temperature data has to be denoted as a value of *content* attribute of <contentInstance> resource.

The <contentInstance> resource cannot be modified once created, and is able to be deleted explicitly by an AE or may be deleted by the platform based on specific policies. If the platform has policies to manage the <contentInstance> resource, these policies are represented by attributes *axByteSize*, *maxNrOfInstances* and/or *maxInstanceAge* attributes in their parent <container> resource.

The <contentInstance> resource inherits the same access control policies of its parent <container> resource, and does not have its own *accessControlPolicyIDs* attribute.

6.2.6.1 API-CI-CRE

| | |
|--|--|
| API Id | API/CI/CRE/001 API/CI/CRE/001_RCN0 API/CI/CRE/001_RCN1 API/CI/CRE/001_RCN2 API/CI/CRE/001_RCN3 |
| API Name | contentInstance CREATE with or without resultContent parameter |
| Target Resource | The <container> resource as a parent resource of being created <contentInstance> resource |
| Description | The interface is used to send a <contentInstance> CREATE request to the target <container> resource located under the CSE, and the hosting CSE will create a new <contentInstance> under the requested <container>, and send back a response containing only the response status code to indicate the CREATE operation status. |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] ae --- cont[cont_temp (container)] </pre> |
| Call Flow | <pre> sequenceDiagram participant AEReg as AE Registrée participant MN as mn-name AEReg->>MN: contentInstance create request MN-->>AEReg: Response </pre> |

| HTTP Header Information | | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>Content-Type</td><td>application/json;ty=4</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json;ty=4 | X-M2M-RVI | Release Version Indicator |
|-------------------------------------|-----------------------------|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|-----------------------|-----------|---------------------------|
| Header | Value | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | | |
| Content-Type | application/json;ty=4 | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | |
| Example with rcn=0 | | <p>API/CI/CRE/001_RCN/0</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor/cont_temp?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Content-Type: application/json;ty=4 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cin": { "con": "20" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Length:0 Content-Location:/mnID/cin20180406T1358251405855267120642_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001</pre> | | | | | | | | | | |
| Example with No RCN or RCN=1 | | <p>API/CI/CRE/001</p> <p>API/CI/CRE/001_RCN1</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor/cont_temp HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Content-Type: application/json;ty=4 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cin": { "con": "20" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Length:258 Content-Location:/mnID/cin20180406T1355091405855351047683_cse01 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a</pre> | | | | | | | | | | |

| | |
|--------------------|---|
| | <p>X-M2M-RSC:2001</p> <pre>{ "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T135509", "et": "99991231T235959", "lt": "20180406T135509", "pi": "cnt20180406T135304140585518901760_cse01", "ri": "cin20180406T1355091405855351047683_cse01", "rn": "cin20180406T1355091405855351047682_cse01", "st": 1, "ty": 4 } }</pre> |
| Example with RCN=2 | <p>API/CI/CRE/001_RCN2</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor/cont_temp?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Content-Type: application/json;ty=4 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cin": { "con": "20" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Length:91 Content-Location:/mnID/cin20180406T1400131405855099266562_cse01 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001 { "m2m:uri": "mn-name/ae_sensor/cont_temp/cin20180406T1400131405855099266561_cse01" }</pre> |
| Example with RCN=3 | <p>API/CI/CRE/001_RCN3</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor/cont_temp?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 Content-Type: application/json;ty=4 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cin": { "con": "20" } }</pre> |

HTTP Response:

```
201 Created
Content-Length:356
Content-Location:/mnID/cin20180406T1402131405855770682883_cse01
Content-Type:application/json
X-M2M-RI:1234
X-M2M-RVI: 2a
X-M2M-RSC:2001

{
  "m2m:rce": {
    "m2m:cin": {
      "con": "20",
      "cs": 2,
      "ct": "20180406T140213",
      "et": "99991231T235959",
      "lt": "20180406T140213",
      "pi": "cnt20180406T1353041405855518901760_cse01",
      "ri": "cin20180406T1402131405855770682883_cse01",
      "rn": "cin20180406T1402131405855770682882_cse01",
      "st": 4,
      "ty": 4
    },
    "uri": "mn-name/ae_sensor/cont_temp/cin20180406T1402131405855770682882_cse01"
  }
}
```

6.2.6.2 API-CI-RET

| API Id | API/CI/RET/001_LA API/CI/RET/001_OL API/CI/RET/001_CI | | | | | | | | | | |
|--|---|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | Latest, Oldest or specific contentInstance RETRIEVE | | | | | | | | | | |
| Target Resource | <latest>, <oldest> virtual resources or individual <contentInstance> resource of the requested <container> resource | | | | | | | | | | |
| Description | The interface is used to send a <contentInstance> RETRIEVE request to the CSE, and the hosting CSE will send back a response containing the result. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] ae --- cont[cont_temp (container)] cont --- ci1[ci_temp_value1 (contentInstance)] cont --- ci2[ci_temp_value2 (contentInstance)] cont --- ci3[ci_temp_value3 (contentInstance)] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSE)". A line descends from it to a box labeled "ae_sensor (AE)". From "ae_sensor (AE)", a line descends to a box labeled "cont_temp (container)". Finally, three lines descend from "cont_temp (container)" to three separate boxes labeled "ci_temp_value1 (contentInstance)", "ci_temp_value2 (contentInstance)", and "ci_temp_value3 (contentInstance)".</p> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant AE_Registree participant mn AE_Registree->>mn: contentInstance retrieve request mn-->>AE_Registree: Response </pre> <p>The call flow diagram illustrates the interaction between an "AE Registree" and a "mn-name". An arrow points from the "AE Registree" to the "mn-name" with the label "contentInstance retrieve request". A return arrow points from the "mn-name" back to the "AE Registree" with the label "Response".</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with latest | <p>API/CI/RET/001_LA</p> <p>HTTP Request:</p> <pre> GET /mn-name/ae_sensor/cont_temp/la HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Length:258 Content-Type:application/json </pre> | | | | | | | | | | |

| | |
|-----------------------------|--|
| | <p>X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2000</p> <pre>{ "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T140213", "et": "99991231T235959", "lt": "20180406T140213", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1402131405855770682883_cse01", "rn": "cin20180406T1402131405855770682882_cse01", "st": 4, "ty": 4 } }</pre> |
| Example with oldest | <p>API/CI/RET/001_OL</p> <p>HTTP Request:</p> <pre>GET /mn-name/ae_sensor/cont_temp/ol HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:258 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2000 { "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T135509", "et": "99991231T235959", "lt": "20180406T135509", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1355091405855351047683_cse01", "rn": "cin20180406T1355091405855351047682_cse01", "st": 1, "ty": 4 } }</pre> |
| Example with CI name | <p>API/CI/RET/001_CI</p> <p>HTTP Request:</p> <pre>GET /mn-name/ae_sensor/cont_temp/cin20180406T1400131405855099266561_cse01 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> |

HTTP Response:

```
200 OK
Content-Length:258
Content-Type:application/json
X-M2M-RI:1234
X-M2M-RVI: 2a
X-M2M-RSC:2000

{
  "m2m:cin": {
    "con": "20",
    "cs": 2,
    "ct": "20180406T140013",
    "et": "99991231T235959",
    "lt": "20180406T140013",
    "pi": "cnt20180406T1353041405855518901760_cse01",
    "ri": "cin20180406T1400131405855099266562_cse01",
    "rn": "cin20180406T1400131405855099266561_cse01",
    "st": 3,
    "ty": 4
  }
}
```

6.2.6.3 API-CI-DEL

| API Id | API/CI/DEL/001_LA API/CI/DEL/001_LA_RCN0 API/CI/DEL/001_OL API/CI/DEL/001_OL_RCN0 API/CI/DEL/001_CI API/CI/DEL/001_CI_RCN0 | | | | | | | | | | |
|--|---|--------|-------|----------|------------|--------------|-----------------------------|--------|------------------|-----------|---------------------------|
| API Name | Latest, Oldest or specific contentInstance DELETE | | | | | | | | | | |
| Target Resource | <latest>, <oldest> virtual resources or individual <contentInstance> resource of the requested <container> resource | | | | | | | | | | |
| Description | The interface is used to send a <container> DELETE request to the CSE, and the hosting CSE will delete the <contentInstance>, and send back a response containing the response status code to indicate the status of the DELETE operation. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] ae --- cont[cont_temp (container)] cont --- ci1[ci_temp_value1 (contentInstance)] cont --- ci2[ci_temp_value2 (contentInstance)] cont --- ci3[ci_temp_value3 (contentInstance)] </pre> <p>The diagram illustrates the resource structure before sending a request. It shows a hierarchy starting from 'mn-name (CSE)' at the top, which contains 'ae_sensor (AE)'. 'ae_sensor (AE)' contains 'cont_temp (container)'. 'cont_temp (container)' contains three content instances: 'ci_temp_value1 (contentInstance)', 'ci_temp_value2 (contentInstance)', and 'ci_temp_value3 (contentInstance)'.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR AE[AE Registrée] -- "contentInstance delete request" --> mn[mn-name] mn -- Response --> AE </pre> <p>The call flow diagram shows the interaction between 'AE Registrée' and 'mn-name'. An arrow labeled 'contentInstance delete request' points from 'AE Registrée' to 'mn-name'. A return arrow labeled 'Response' points from 'mn-name' back to 'AE Registrée'.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Accept | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with latest (No RCN or RCN=1) | <p>API/CI/DEL/001_LA</p> <p>HTTP Request:</p> <pre> DELETE /mn-name/ae_sensor/cont_temp/la HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|--|---|
| | <p>HTTP Response:</p> <p>200 OK Content-Length:258 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002</p> <pre>{ "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T140213", "et": "99991231T235959", "lt": "20180406T140213", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1402131405855770682883_cse01", "rn": "cin20180406T1402131405855770682882_cse01", "st": 4, "ty": 4 } }</pre> |
| Example with latest and RCN=0 | <p>API/CI/DEL/001_LA_RCN0</p> <p>HTTP Request:</p> <p>DELETE /mn-name/ae_sensor/cont_temp/la?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK Content-Length:0 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002</p> |
| Example with oldest (No RCN or RCN=1) | <p>API/CI/DEL/001_OL</p> <p>HTTP Request:</p> <p>DELETE /mn-name/ae_sensor/cont_temp/ol HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK Content-Length:258 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002</p> |

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| | <pre>{ "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T135509", "et": "99991231T235959", "lt": "20180406T135509", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1355091405855351047683_cse01", "rn": "cin20180406T1355091405855351047682_cse01", "st": 1, "ty": 4 } }</pre> |
| Example with oldest and RCN=0 | <p>API/CI/DEL/001_OL_RCN0</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_sensor/cont_temp/ol?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:0 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002</pre> |
| Example with CI name (No RCN or RCN=1) | <p>API/CI/DEL/001_CI</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_sensor/cont_temp/cin20180406T1400131405855099266561_cse01 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK X-M2M-Origin:/mnID X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002</pre> <pre>{ "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T143434", "et": "99991231T235959", "lt": "20180406T143434", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1434341405855518901762_cse01", "rn": "cin20180406T1434341405855518901761_cse01", "st": 9, "ty": 4 } }</pre> |

| | |
|--------------------------------|--|
| | <pre>}</pre> |
| Example with CI name and RCN=0 | <p>API/CI/DEL/001_CI_RCN0</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_sensor/cont_temp/cin20180406T1400131405855099266561_cse01?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T0846311405855351047680_cse01 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:0 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002</pre> |

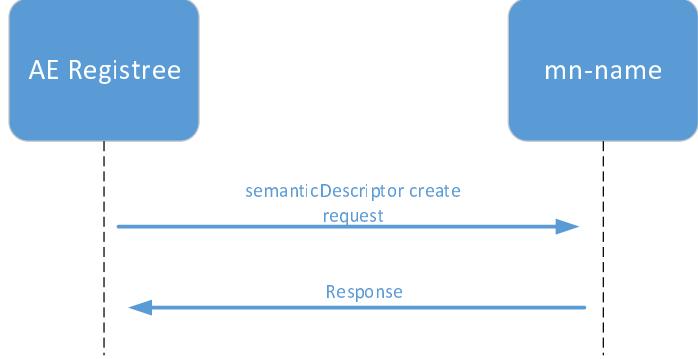
6.2.7 Resource Type *semanticDescriptor*

6.2.7.0 Introduction

The <semanticDescriptor> resource is used to store a semantic description pertaining to a resource and potentially sub-resources. Such a description may be provided according to ontologies. The semantic information is used by the semantic functionalities of the oneM2M system and is also available to applications or CSEs.

6.2.7.1 API-SMD-CRE

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| API Id | API/SMD/CRE/001 API/SMD/CRE/001_RCN0 API/SMD/CRE/001_RCN1 API/SMD/CRE/001_RCN3 |
| API Name | semanticDescriptor CREATE with or without resultContent parameter |
| Target Resource | The <container> resource as a parent resource of being created <semanticDescriptor> resource |
| Description | The interface is used to send a <semanticDescriptor> CREATE request to the target <container> resource located under the CSE, and the hosting CSE will create a new <semanticDescriptor> under the requested <container>, and send back a response according to the configured resultContent. |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] ae --- cont[cont_temp (container)] </pre> <p>The diagram illustrates the resource structure before sending a request. It shows three nested resources: 'mn-name' (CSE) at the top level, containing 'ae_sensor' (AE), which in turn contains 'cont_temp' (container).</p> |

| Call Flow |  <pre> sequenceDiagram participant AE_Registree participant mn_name AE_Registree->>mn_name: semanticDescriptor create request mn_name->>AE_Registree: Response </pre> | | | | | | | | | | | | |
|-------------------------|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|--------------|------------------------|-----------|---------------------------|
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>Content-Type</td><td>application/json;ty=24</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json;ty=24 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | | | |
| Content-Type | application/json;ty=24 | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | |
| RDF content | <p>The RDF content will be encode Base64 in the HTTP payload</p> <pre> <?xml version="1.0"?> <rdf:RDF xmlns="http://www.onem2m.org/ontology/houses_temperature_example#" xmlns:base="http://www.onem2m.org/ontology/houses_temperature_example" xmlns:temperature_example="http://www.onem2m.org/ontology/temperature_example#" xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:owl="http://www.w3.org/2002/07/owl#" xmlns:xml="http://www.w3.org/XML/1998/namespace" xmlns:xsd="http://www.w3.org/2001/XMLSchema#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"> <owl:NamedIndividual rdf:about="http://www.onem2m.org/ontology/houses_temperature_example#House1"> <rdf:type rdf:resource="http://www.onem2m.org/ontology/temperature_example#House"/> <temperature_example:hasIndoorTemperature rdf:resource="http://www.onem2m.org/ontology/houses_temperature_example#IndoorTempProperty1"/> </owl:NamedIndividual> <owl:NamedIndividual rdf:about="http://www.onem2m.org/ontology/houses_temperature_example#IndoorTempProperty1"> <rdf:type rdf:resource="http://www.onem2m.org/ontology/temperature_example#TemperatureProperty"/> <temperature_example:hasDatatype>xsd:int</temperature_example:hasDatatype> <temperature_example:hasUnit>Fahrenheit</temperature_example:hasUnit> <temperature_example:valuesStoredIn>http://mnprovider.com:9011/mn- name/ae_sensor/cont_temp/la</temperature_example:valuesStoredIn> </owl:NamedIndividual> </rdf:RDF> </pre> | | | | | | | | | | | | |
| Example with RCN=0 | <p>API/SMD/CRE/001_RCN0</p> <p>HTTP Request:</p> <pre> POST /mn-name/ae_sensor/cont_temp?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0830181405122857960960_cse01 Content-Type: application/json;ty=24 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:smd" : { "dcrp" : "application/rdf+xml:1", } </pre> | | | | | | | | | | | | |

| | |
|---|---|
| | <pre> "rn" : "semantic_describer", "dsr": "PD94bWwgdmVyc2lvbj0iMS4wIj8+DQo8cmRmOlJERiB4bWxucz0iaHR0cDovL3d3dy5v bmVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxIlyINCiAgICAgE1sO mJhc2U9lmh0dHA6Ly93d3cub25lbTJtLm9yZy9vbnRvbG9neS9ob3VzZXNfdGVtcGVyYXR1cmVfZ XhhbXBsZSINCIAgICAgE1sbnM6dGVtcGVyYXR1cmVfZXhhbXBsZT0iaHR0cDovL3d3dy5vbmVt Mm0ub3JnL29udG9sb2d5L3RlbXBlcF0dXJIX2V4YW1wbGUlg0KICAgICB4bWxuczpyZGY9lmh0 dHA6Ly93d3cudzMu3JnLzE5OTkvMDlvMjlcmRmLN5bnRheC1ucyMiDQogICAgIHhtbG5zOm93 bD0iaHR0cDovL3d3dy53My5vcmcvMjAwMi8wNy9vd2wjlg0KICAgICB4bWxucz4bWw9lmh0dHA6 Ly93d3cudzMu3JnL1hNTC8xOTk4L25hbWVzcGfjZSINCIAgICAgE1sbnM6eHNkPSJodHrwOi8 vd3d3LnczLm9yZy8yMDAxL1hNTFNjaGVtYSMiDQogICAgIHhtbG5zOnJkZnM9lmh0dHA6Ly93d3c udzMub3JnLzlwMDAvMDEvcRmLNjaGVtYSMiPg0KICAgIDxvd2w6TmFtZWRJbmRpdmIkdwFs </pre> <p>HTTP Response:</p> <pre> 201 Created Content-Length:0 Content-Location:/mnID/CAE0120180404T0830181405122857960960_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001 </pre> |
| Example with no RCN or RCN=1 | <p>API/SMD/CRE/001 API/SMD/CRE/001_RCN1</p> <p>HTTP Request:</p> <pre> POST /mn-name/ae_sensor/cont_temp HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0830181405122857960960_cse01 Content-Type: application/json;ty=24 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:smd": { "dcrp" : "application/rdf+xml;1", "rn" : "semantic_describer", "dsr": "PD94bWwgdmVyc2lvbj0iMS4wIj8+DQo8cmRmOlJERiB4bWxucz0iaHR0cDovL3d3dy5v bmVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxIlyINCiAgICAgE1sO mJhc2U9lmh0dHA6Ly93d3cub25lbTJtLm9yZy9vbnRvbG9neS9ob3VzZXNfdGVtcGVyYXR1cmVfZ XhhbXBsZSINCIAgICAgE1sbnM6dGVtcGVyYXR1cmVfZXhhbXBsZT0iaHR0cDovL3d3dy5vbmVt Mm0ub3JnL29udG9sb2d5L3RlbXBlcF0dXJIX2V4YW1wbGUlg0KICAgICB4bWxuczpyZGY9lmh0 dHA6Ly93d3cudzMu3JnLzE5OTkvMDlvMjlcmRmLN5bnRheC1ucyMiDQogICAgIHhtbG5zOm93 bD0iaHR0cDovL3d3dy53My5vcmcvMjAwMi8wNy9vd2wjlg0KICAgICB4bWxucz4bWw9lmh0dHA6 Ly93d3cudzMu3JnL1hNTC8xOTk4L25hbWVzcGfjZSINCIAgICAgE1sbnM6eHNkPSJodHrwOi8 vd3d3LnczLm9yZy8yMDAxL1hNTFNjaGVtYSMiDQogICAgIHhtbG5zOnJkZnM9lmh0dHA6Ly93d3c udzMub3JnLzlwMDAvMDEvcRmLNjaGVtYSMiPg0KICAgIDxvd2w6TmFtZWRJbmRpdmIkdwFs </pre> |

```
IHJkZjphYm91dD0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhd
HVyZV9leGFtcGxli0hvdXNIMSI+DQogICAglCAglDxyZGY6dHlwZSBYZGY6cmVzb3VyY2U9lmh0d
HA6Ly93d3cub25lbTJtLm9yZy9vbvRvbG9neS90ZW1wZXJhdHVyZV9leGFtcGxli0hvdXNlll8+DQog
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AgICAglPHRIlbXBlcxF0dXJIX2V4YW1wbGU6aGFzRGF0YXR5cGU+eHNkOmludDwvdGVtcGVyYX
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aGFzVW5pdD5GYWhyZW5oZWI0PC90ZW1wZXJhdHVyZV9leGFtcGxli0mhhc1VuaXQ+DQogICA
gICAglDx0ZW1wZXJhdHVyZV9leGFtcGxli0nZhbHVISNTdG9yZWRJbj5odHRwOi8vbW5wcm92a
WRlci5jb206OTAxMS9tbi1uYW1IL2FIX3NlbnNvcijb250X3RlbXAvbGE8L3RlbXBlcxF0dXJIX2V4Y
W1wbGU6dmFsdWVJc1N0b3JlZEluPg0KICAglDwvb3dsOk5hbWVksW5kaXZpZHvhbD4NCjwvcm
RmOIJERj4="
    }
}
```

HTTP Response:

201 Created
Content-Length:3480
Content-Location:/mnID/smd20180413T1256011400030218380800_cse01
Content-Type:application/json
X-M2M-RI:1234
X-M2M-RVI: 2a

X-M2M-RSC:2001

```
{
  "m2m:smd": {
    "ct": "20180413T125601",
    "dcrp": "application/rdf+xml;1",
    "dsp": "PD94bWwgdmVyc2lvbj0iMS4wIj8+DQo8cmRmOIJERiB4bWxucz0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxIlyINCiAgICAgeG1sOmJhc2U9Imh0dHA6Ly93d3cub25lbTJtLm9yZy9vbnRvbG9neS9ob3VzZXNfdGVtcGVyYXR1cmVfZXhhbXBsZSINCiAgICAgeG1sbnM6dGVtcGVyYXR1cmVfZXhhbXBsZT0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L3RlbXBlcM0dXJX2V4YW1wbGUjlg0KICAgICB4bWxuczpyZGY9lmh0dHA6Ly93d3cudzMu3JnLzE5OTkvMDIvMjlcmRmLXN5bnRheC1ucyMiDQogICAgIHbtG5zOm93bD0iaHR0cDovL3d3dy53My5vcmcvMjAwMi8wNy9vd2wjlg0KICAgICB4bWw9lmh0dHA6Ly93d3cudzMub3JnL1hNTC8xOTk4L25hbWVzcGFjZSINCiAgICAgeG1sbnM6eHNkPSJodHRwOi8vd3d3LnczLm9yZy8yMDAxL1hNTFNjaGVtYSMiDQogICAgIHbtG5zOnJkZnM9lmh0dHA6Ly93d3cudzMub3JnLzlwMDAvMDEvcvrmLnjaGVtYSMiPg0KDQogICAgPG93bDpOYW1lZEEluZGl2aWR1YWwgcmRmOmFib3V0PSJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvaG91c2VzX3RlbXBlcM0dXJX2V4YW1wbGUjSG91c2UxIj4NCiAgICAgICAgPHJkZjp0eXBIIHjkZjpyZXNvdXjZT0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L3RlbXBlcM0dXJX2V4YW1wbGUjSG91c2UiLz4NCiAgICAgICAgPHRlbXBlcM0dXJX2V4YW1wbGU6aGFzSW5kb29yVGtgcGVyYXR1cmUgcmRmOnJlc291cmNIPsJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvaG91c2VzX3RlbXBlcM0dXJX2V4YW1wbGUjSW5kb29yVGtcfByb3BlcnR5MSlPg0KICAgIDwvb3dsOk5hbWVksW5kaXzpZHvhbD4NCg0KICAgIDxdv2w6TmFtZWRJbmRpdmIkWFsIHKjZphYm91dD0iaHR0cDovL3d3dy5vbmvTmM0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxI0luZG9vcIRlbXBQcm9wZXJ0eTEiPg0KICAgICAgICA8cmRmOnR5cGUgcmRmOnJlc291cmNIPsJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvdGVtcGVyYXR1cmVfZXhhbXBsZSNuzw1wZXJhdHVyZVByb3BlcnR5li8+DQogICAgICAgIdx0ZW1wZXJhdHVyZV9leGFtcGxI0mhdc0RhGF0eXBIPnhzZDppbnQ8L3RlbXBlcM0dXJX2V4YW1wbGU6aGFzRGF0YXR5cGU+DQogICAgICAgIdx0ZW1wZXJhdHVyZV9leGFtcGxI0mhdc1VuaXQ+RmFocmVuaGVpdDwvdGVtcGVyYXR1cmVfZXhhbXBsZTpoYXNVbml0Pg0KICAgICAgICA8dGVtcGVyYXR1cmVfZXhhbXBsZTp2YWx1ZUizU3RvcvMkSW4+aHR0cDovL2luLnByb3ZpZGVyLmNvbTo3NTc5L3NlcZlci90ZW1wc2Vuc29yYWUxL3RlbXBlcM0dXJIL2xhdGVzdDwvdGVtcGVyYXR1cmVfZXhhbXBsZTp2YWx1ZUizU3RvcvMkSW4+DQogICAgPC9vd2w6TmFtZWRJbmRpdmIkWFsPg0KDQogICAgPG93bDpOYW1lZEEluZGl2aWR1YWwgcmRmOmFib3V0PSJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvaG91c2VzX3RlbXBlcM0dXJX2V4YW1wbGUjSW5kb29yVGtcfNlbnNvcjEiPg0KICAgICAgICA8cmRmOnR5cGUgcmRmOnJlc291cmNIPsJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvdGVtcGVyYXR1cmVfZXhhbXBsZSNuzw1wZXJhdHVyZVNlbnNvcilvPg0KICAgICAgICA8dGVtcGVyYXR1cmVfZXhhbXBsZTpoYXNUZw1wZXJhdHVyZU1YXN1cmLuZ0Z1bmNoaW9ulHjkZjpyZXNvdXjZT0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxI1RlbXBGdW5jdGlvbjEiLz4NCiAgICA8L293bDpOYW1lZEEluZGl2aWR1YWw+DQoNCiAgICAgICA8b3dsOk5hbWVksW5kaXzpZHvhbCbYzGY6YWJvdXQ9lmh0dHA6Ly93d3cub25lbTJtLm9yZy9vbnRvbG9neS9ob3VzZXNfdGVtcGVyYXR1cmVfZXhhbXBsZSNuzw1wRnVuY3Rpb24xIj4NCiAgICAgICAgPHJkZjp0eXBIIHjkZjpyZXNvdXjZT0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L3RlbXBlcM0dXJX2V4YW1wbGUjVGtcfGyYXR1cmVNzWFzdXJpbmdGdW5jdGlvbilvPg0KICAgICAgICA8dGVtcGVyYXR1cmVfZXhhbXBsZTptZWfdXJlc1RlbXBlcM0dXJIIHjkZjpyZXNvdXjZT0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxI0luZG9vcIRlbXBQcm9wZXJ0eTEiLz4NCiAgICA8L293bDpOYW1lZEEluZGl2aWR1YWw+ICAgDQo8L3JkZjpSREY+DQo=",
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    "it": "20180413T125601",
    "or": "http://www.onem2m.org/ontology/temperature_example",
    "pi": "cnt20180413T0847561400030050526720_cse01",
    "ri": "smd20180413T1256011400030218380800_cse01",
    "rn": "semantic_describer",
    "ty": 24
  }
}
```


| | |
|--|---|
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|--|---|

6.2.7.2 API-SMD-RET

| API Id | API/SMD/RET/001_RCN1 | | | | | | | | | | | | | | | |
|--|---|-------|--------|-------|--------|------------------|--|----------|------------|--|--------------|-----------------------------|--|-----------|---------------------------|--|
| API Name | SemanticDescriptor RETRIEVE with or without resultContent parameter | | | | | | | | | | | | | | | |
| Target Resource | Requested <semanticDescriptor> resource | | | | | | | | | | | | | | | |
| Description | The interface is used to send a <semanticDescriptor> RETRIEVE request attached with resultContent to the <container> resource located in the <CSEBase>. The hosting CSE will send back a response according to the configured resultContent. | | | | | | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] ae --- cont[cont_temp (container)] cont --- semantic[semantic_describer (semanticDescriptor)] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSE)". A line descends from it to a box labeled "ae_sensor (AE)". Another line descends from "ae_sensor (AE)" to a box labeled "cont_temp (container)". A final line descends from "cont_temp (container)" to a box labeled "semantic_describer (semanticDescriptor)".</p> | | | | | | | | | | | | | | | |
| Call Flow | <pre> graph LR AE[AE Registrée] -- "semanticDescriptor retrieve request" --> mn[mn-name] mn -- Response --> AE </pre> <p>The diagram illustrates the call flow. On the left is a blue rounded rectangle labeled "AE Registrée". On the right is a blue rounded rectangle labeled "mn-name". A horizontal arrow points from the AE Registrée to the mn-name, labeled "semanticDescriptor retrieve request". A return arrow points from mn-name back to AE Registrée, labeled "Response".</p> | | | | | | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th></th> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> <td></td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> <td></td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> <td></td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> <td></td> </tr> </tbody> </table> | | Header | Value | Accept | application/json | | X-M2M-RI | Request ID | | X-M2M-Origin | AE-ID of request originator | | X-M2M-RVI | Release Version Indicator | |
| | Header | Value | | | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | | | | |
| Example with RCN=1 or No RCN | <p>API/SMD/RET/001 API/SMD/RET/001_RCN1</p> <p>HTTP Request:</p> <pre> GET /mn-name/ae_sensor/cont_temp/semantic_describer HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0838301405122186544640_cse01 Accept: application/json X-M2M-RI:1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Length:3374 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | | | | | | |

X-M2M-RSC:2000

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6.2.7.3 API-SMD-UPD

| API Id | API/SMD/UPD/001 API/SMD/UPD/001_RCN0 API/SMD/UPD/001_RCN1 | | | | | | | | | | | | | | | |
|--|--|-------|--------|-------|----------|------------|--|--------------|-----------------------------|--|--------------|------------------|--|-----------|---------------------------|--|
| API Name | semanticDescriptor UPDATE with or without resultContent set | | | | | | | | | | | | | | | |
| Target Resource | The < semanticDescriptor > resource located under <container> resource | | | | | | | | | | | | | | | |
| Description | The interface is used to send a <semanticDescriptor> UPDATE request to the target <container> resource located under the CSE, and the hosting CSE will create a new <semanticDescriptor> under the requested <container>, and send back a response according to the configured resultContent. | | | | | | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] ae --- cont[cont_temp (container)] cont --- sem[semantic_describer (semanticDescriptor)] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSE)". A line connects it to a box labeled "ae_sensor (AE)". From "ae_sensor (AE)", a line connects to a box labeled "cont_temp (container)". Finally, a line connects "cont_temp (container)" to a box labeled "semantic_describer (semanticDescriptor)".</p> | | | | | | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant AEReg as AE Registrée participant MN as mn-name AEReg->>MN: semanticDescriptor update request MN-->>AEReg: Response </pre> <p>The call flow diagram illustrates the interaction between an "AE Registrée" and a "mn-name". An arrow points from the "AE Registrée" to the "mn-name" with the label "semanticDescriptor update request". A return arrow points from the "mn-name" back to the "AE Registrée" with the label "Response".</p> | | | | | | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th></th> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> <td></td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> <td></td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> <td></td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> <td></td> </tr> </tbody> </table> | | Header | Value | X-M2M-RI | Request ID | | X-M2M-Origin | AE-ID of request originator | | Content-Type | application/json | | X-M2M-RVI | Release Version Indicator | |
| | Header | Value | | | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | | | | |
| Example with RCN=0 | <p>API/AE/UPD/001_RCN0</p> <p>HTTP Request:</p> <pre> PUT /mn-name/ae_sensor/cont_temp/semantic_describer?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0830181405122857960960_cse01 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:smd": { "dsp": "PD94bWwgdmVyc2lvbj0iMS4wIj8+DQo8cmRmOlJERiB4bWxucz0iaHR0cDovL3d3dy5vbvmVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxIlyINCiAgICAgeG1sOmJhc2U9Imh0dHA6Ly93d3cub25lbTJtLm9yZy9vbnRvbG9neS9ob3VzZXNfdGVtcGVyYXR1cmVfZXhhbXBsZSINCiAgICAgeG1sbnM6dGVtcGVyYXR1cmVfZXhhbXBsZT0iaHR0cDovL3d3dy5vbvmVtMm0ub3JnL29udG9sb2d5L3RlbXBicmF0dXJlX2V4YW1wbGUjlg0KICAgICB4bWxuczpyZGY9lmh0dHA6Ly93d3cudzMu3JnLzE5OTkvMDlvMjlcmRmLXN5bnRheC1ucyMiDQogICAgIHtbG5zOm93bD0iaHR0" } } </pre> | | | | | | | | | | | | | | | |

| | |
|------------------------------|---|
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| Example with RCN=1 or No RCN | <p>API/AE/UPD/001 API/AE/UPD/001_RCN1</p> <p>HTTP Request:</p> <pre> PUT /mn-name/ae_sensor/cont_temp/semantic_describer HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0830181405122857960960_cse01 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:smd": { "dsp": " PD94bWwgdmVyc2lvbj0iMS4wIj8+DQo8cmRmOIJERiB4bWxucz0iaHR0cDovL3d3dy5vbmVtMm0 ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxlyINCiAgICAgeG1sOmJhc2U9I mh0dHA6Ly93d3cub251bTJtLm9yZy9vbnRvbG9neS9ob3VzZXNfdGVtcGVyYXR1cmVfZXhhbXBsZ SINCiAgICAgeG1sbnM6dGVtcGVyYXR1cmVfZXhhbXBsZT0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL 29udG9sb2d5L3RlbXBlcxF0dXJIX2V4YW1wbGUjlg0KICAgICB4bWxuczpZGY9lmh0dHA6Ly93 d3cudzMub3JnLzE5OTkvMDIvMjltcmRmLXN5bnRheC1ucyMiDQogICAgIHhtbG5zOm93bD0iaHR0 cDovL3d3dy53My5vcmcvMjAwMi8wNy9vd2wjlg0KICAgICB4bWxuczp4bWw9lmh0dHA6Ly93d3cud zMu3JnL1hNTC8xOTk4L25hbWVzcGFjZSINCiAgICAgeG1sbnM6eHNkPSJodHRwOi8vd3d3Lncz Lm9yZy8yMDAxL1hNTFNjaGVtYSMiDQogICAgIHhtbG5zOnJkZnM9lmh0dHA6Ly93d3cudzMub3J nLzlwMDAvMDEvcvmRmLXNjaGVtYSMiPg0KDQogICAgPG93bDpOYW1ZEEluZGl2aWR1YWwgcm RmOmFib3V0PSJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvaG91c2VzX3RlbXBlcxF0d XJIX2V4YW1wbGUjSG91c2Uxlj4NCiAgICAgICAgPHJKZjp0eXBIIHjkZjpyZXNvdXJjZT0iaHR0cDov L3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L3RlbXBlcxF0dXJIX2V4YW1wbGU6aGFzSW5kb29yVGVtcGVyYXR1cmUgcmRmOnJlc 291cmNIPSJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvaG91c2VzX3RlbXBlcxF0dXJIX 2V4YW1wbGUjSW5kb29yVGVtcFBByb3BlcnR5MSlVpg0KICAgIDwvb3dsOk5hbWVksW5kaXZpZH VhbD4NCg0KICAgIDxdv2w6TmFtZWRJbmRpdmIkdfWFsIHKjZjphYm91d0iaHR0cDovL3d3dy5vb mVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxll0luZG9vcIRlbXBQcm 9wZXJ0eTEiPg0KICAgICAgICA8cmRmOnR5cGUgcmRmOnJlc291cmNIPSJodHRwOi8vd3d3Lm9u ZW0ybS5vcmcvb250b2xvZ3kvdGVtcGVyYXR1cmVfZXhhbXBsZSNUZW1wZXJhdHVyZVByb3Blcn R5li8+DQogICAgICAgIDx0ZW1wZXJhdHVyZV9leGFtcGxIOmhhc0RhGf0eXBIPnhzZDppbnQ8L3 RlbXBlcxF0dXJIX2V4YW1wbGU6aGFzRGF0YXR5cG+DQogICAgICAgIDx0ZW1wZXJhdHVyZV 9leGFtcGxIOmhhc1VuaXQ+RmFocmVuaGVpdDwvdGVtcGVyYXR1cmVfZXhhbXBsZTp0YXNVbml 0Pg0KICAgICAgICA8dGVtcGVyYXR1cmVfZXhhbXBsZTp2YWx1ZUIzU3RvcmlkSW4+aHR0cDov L2luLnByb3ZpZGVyLmNvbTo4MjgyL3NlcnZlci90ZW1wc2Vuc29yYWUxL3RlbXBlcxF0dXJIL2xhdG VzdDwvdGVtcGVyYXR1cmVfZXhhbXBsZTp2YWx1ZUIzU3RvcmlkSW4+DQogICAgPC9vd2w6Tm FtZWRJbmRpdmIkdfWFsPg0KPC9yZGY6UkRGPg==", "or": "http://www.onem2m.org/ontology/temperature_example2", } } </pre> |

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}  
}
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HTTP Response:

200 OK
Content-Length:2405
Content-Type:application/json
X-M2M-RI:1234
X-M2M-RVI: 2a

X-M2M-RSC:2004

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  "m2m:smd": {
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    "dcrp": "application/rdf+xml;1",
    "dsp": "PD94bWwgdmVyc2lvbj0iMS4wIj8+DQo8cmRmOIJERiB4bWxucz0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxIlyINCiAgICAgE1sOmJhc2U9Imh0dHA6Ly93d3cub25lbTJtlm9yZy9vbnRvbG9neS9ob3VzZXNfdGVtcGVyYXR1cmVfZXhhbXBsZSINCiAgICAgE1sbnM6dGVtcGVyYXR1cmVfZXhhbXBsZT0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L3RlbXBlcM0dXJX2V4YW1wbGUjl0KICAgICB4bWxuczpyZGY9lmh0dHA6Ly93d3cudzMu3JnLzE5OTkvMDIvMjlcmRmLXN5bnRheC1ucyMiDQogICAgIHtbG5zOm93bD0iaHR0cDovL3d3dy53My5vcmcvMjAwMi8wNy9vd2wjlg0KICAgICB4bWw9lmh0dHA6Ly93d3cudzMub3JnL1hNTC8xOTk4L25hbWVzcGFjZSINCiAgICAgE1sbnM6eHNkPSJodHRwOi8vd3d3LnczLm9yZy8yMDAxL1hNTFNjaGVtYSMiDQogICAgIHtbG5zOnJkZnM9lmh0dHA6Ly93d3cudzMub3JnLzlwMDAvMDEvcvrmLXNjaGVtYSMiPg0KDQogICAgPG93bDpOYW1lZEEluZGI2aWR1YWwgcmRmOmFib3V0PSJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvaG91c2VzX3RlbXBlcM0dXJIX2V4YW1wbGUjSG91c2Uxlj4NCiAgICAgICAgPHJkZjp0eXBIIHjkZjpyZXNvdXjZT0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L3RlbXBlcM0dXJX2V4YW1wbGUjSG91c2UiLz4NCiAgICAgICAgPHRlbXBlcM0dXJX2V4YW1wbGU6aGFzSW5kb29yVGtgcGVyYXR1cmUgcmRmOnJlc291cmNIPSJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvaG91c2VzX3RlbXBlcM0dXJIX2V4YW1wbGUjSW5kb29yVGtcfByb3BlcnR5MSlPg0KICAgIDwvb3dsOk5hbWVksW5kaXzpZHvhbD4NCg0KICAgIDxdv2w6TmFtZWRJbmRpdmIkdwFsIHKjZjphYm91dD0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L2hvdXNlc190ZW1wZXJhdHVyZV9leGFtcGxI0luZG9vcIRlbXBQcm9wZXJ0eTEiPg0KICAgICAgICA8cmRmOnR5cGUgcmRmOnJlc291cmNIPSJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvdGVtcGVyYXR1cmVfZXhhbXBsZSNuzW1wZXJhdHVyZVByb3BlcnR5li8+DQogICAgICAgIDx0ZW1wZXJhdHVyZV9leGFtcGxI0mhcc0RhGF0eXBIPnhzZDppbnQ8L3RlbXBlcM0dXJX2V4YW1wbGU6aGFzRGF0YXR5cGU+DQogICAgICAgIDx0ZW1wZXJhdHVyZV9leGFtcGxI0mhcc1VuaxQ+RmFocmVuavGpdDwvdGVtcGVyYXR1cmVfZXhhbXBsZTpoYXNVbml0Pg0KICAgICAgICA8dGVtcGVyYXR1cmVfZXhhbXBsZTp2YWx1ZUIzU3RvcvMvkSW4+aHR0cDovL2luLnByb3ZpZGVyLmNvbTo4MjgyL3NlcnZlc90ZW1wc2Vuc29yYWUxL3RlbXBlcM0dXJIL2xhdGVzdDwvdGVtcGVyYXR1cmVfZXhhbXBsZTp2YWx1ZUIzU3RvcvMvkSW4+DQogICAgPC9vd2w6TmFtZWRJbmRpdmIkdwFsPg0KPC9yZGY6UkRGPg==",
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    "pi": "cnt20180413T0847561400030050526720_cse01",
    "ri": "smd20180413T1256011400030218380800_cse01",
    "rn": "semantic_describer",
    "ty": 24
  }
}
```

6.2.7.4 API-SMD-DEL

| API Id | API/SMD/DEL/001 API/SMD/DEL/001_RCN0 API/SMD/DEL/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|----------|------------|--------------|-----------------------------|--------|------------------|-----------|---------------------------|
| API Name | SMD DELETE | | | | | | | | | | |
| Target Resource | The <semanticDescriptor> resource located under the <container> resource | | | | | | | | | | |
| Description | The interface is used to send a <semanticDescriptor> DELETE request to the hosting CSE, and the hosting CSE will delete the <semanticDescriptor> and send back a response containing a response status code indicating the DELETE request status. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSE)] --- ae[ae_sensor (AE)] ae --- cont[cont_temp (container)] cont --- desc[semantic_describer (semanticDescriptor)] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSE)". A line connects it to a box labeled "ae_sensor (AE)". From "ae_sensor (AE)", a line connects to a box labeled "cont_temp (container)". Finally, a line connects "cont_temp (container)" to a box labeled "semantic_describer (semanticDescriptor)".</p> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant AEReg as AE Registrée participant MN as mn-name AEReg->>MN: semanticDescriptor delete request MN-->>AEReg: Response </pre> <p>The call flow diagram illustrates the interaction between an "AE Registrée" and a "mn-name". An arrow points from the "AE Registrée" to the "mn-name" with the label "semanticDescriptor delete request". A return arrow points from the "mn-name" back to the "AE Registrée" with the label "Response".</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Accept | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/AE/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre> DELETE /mn-name/ae_sensor/cont_temp/semantic_describer?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0830181405122857960960_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Length:0 X-M2M-RI:1234 X-M2M-RSC:2002 </pre> | | | | | | | | | | |

| | |
|---|--|
| Example with RCN=1 or no RCN | <p>API/SMD/DEL/001 API/SMD/DEL/001_RCN1</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_sensor/cont_temp/semantic_describer HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0830181405122857960960_cse01 X-M2M-RI:1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:2299 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002 { "m2m:smd": { "ct": "20180413T125601", "dcrp": "application/rdf+xml:1", "dsp": "PD94bWwgdmVyc2lvbj0iMS4wIj8+DQo8cmRmOIJERiB4bWxucz0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL1hNTC8xOTk4L25hbWVzcGfjZSINCiAgICAgeG1sbnM6eHNkPSJodHRwOi8vd3d3LnczLm9yZy8yMDAxL1hNTFNjaGVtYSMiDQogICAgIHhtbG5zOnJkZnM9lmh0dHA6Ly93d3cudzMub3JnLzlwMDAvMDEvcvmRmLXNjaGVtYSMiPg0KDQogICAgPG93bDpOYW1lZEIuZGl2aWR1YWwgcmRmOmFib3V0PSJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvaG91c2VzX3RlbXBlcfn0dXJIX2V4YW1wbGUjSG91c2UxIj4NCiAgICAgICAgPHJkZjp0eXBIIHjkZjpyZXNvdXjZT0iaHR0cDovL3d3dy5vbmVtMm0ub3JnL29udG9sb2d5L3RlbXBlcfn0dXJIX2V4YW1wbGUjSG91c2UiLz4NCiAgICAgICAgPHRlbXBlcfn0dXJIX2V4YW1wbGU6aGFzSW5kb29yVGvtcGvyYXR1cmUgcmRmOnJlc291cmNIPSJodHRwOi8vd3d3Lm9uZW0ybS5vcmcvb250b2xvZ3kvdGVtcGvyYXR1cmVfZXhhbXBsZSNUZW1wZXJhdHVyZVByb3BlcnR5li8+DQogICAgICAgIDx0ZW1wZXJhdHVyZV9leGFtcGxIOmhcc0RhdGF0eXBIPnhzZDppbnQ8L3RlbXBlcfn0dXJIX2V4YW1wbGU6aGFzRGF0YXR5cGU+DQogICAgICAgIDx0ZW1wZXJhdHVyZV9leGFtcGxIOmhcc1VuaXQ+RmFocmVuaGVpdDwvdGVtcGvyYXR1cmVfZXhhbXBsZTp2Yw1ZUIzU3RvcmVksW4+aHR0cDovL2luLnByb3ZpZGVyLmNvbTo4MjgyL3NlcZlci90ZW1wc2Vuc29yYWUxL3RlbXBlcfn0dXJIL2xhdGVzdDwvdGVtcGvyYXR1cmVfZXhhbXBsZTp2Yw1ZUIzU3RvcmVksW4+DQogICAgPC9vd2w6TmFtZWRJbmRpdmIkdwFsPg0KPC9yZGY6UkRGPg==", "et": "99991231T235959", "it": "20180413T151556", "or": "http://www.onem2m.org/ontology/temperature_example2", "pi": "cnt20180413T0847561400030050526720_cse01", "ri": "smd20180413T1256011400030218380800_cse01", "rn": "semantic_describer", "ty": 24 } }</pre> |
|---|--|

6.2.8 Resource discovery

6.2.8.0 Introduction

The discovery is one of the common service functions which searches information about application and services. An originator can receive the matching information according to the filter criteria, by sending the discovery request. The format of a query string has both target resource address and filter criteria information; e.g. /mn-name?fu=2&ty=2.

The filterUsage can be set to retrieve any preferred format of the discovery response. The filterUsage value is specified in table 6.2.8.0-1. When filterUsage sets to 1, the response of the discovery is represented with a format of the URI list and all URIs of discovered resources is listed in the response. And when filterUsage sets to 2, the response contains attributes of the resources that matched with presented filter criteria conditions.

Table 6.2.8.0-1: Interpretation of filterUsage

| Interpretation | Value | Note |
|-----------------------|-------|---------|
| Discovery Criteria | 1 | |
| Conditional Retrieval | 2 | Default |

Filter criteria are set to search the resources with specific conditions. For example, AE resources can be found by setting the resourceType to 2. Some filter criteria conditions are listed in table 6.2.8.0-2, which is extracted from the table 8.1.2-2 of ETSI TS 118 101 [i.2].

Table 6.2.8.0-2: Filter criteria conditions

| Condition tag | Short Name | Multiplicity | Description |
|-----------------------------------|------------|--------------|---|
| Matching Conditions | | | |
| createdBefore | crb | 0..1 | The creationTime attribute of the matched resource is chronologically before the specified value. |
| createdAfter | cra | 0..1 | The creationTime attribute of the matched resource is chronologically after the specified value. |
| modifiedSince | ms | 0..1 | The lastModifiedTime attribute of the matched resource is chronologically after the specified value. |
| unmodifiedSince | us | 0..1 | The lastModifiedTime attribute of the matched resource is chronologically before the specified value. |
| stateTagSmaller | sts | 0..1 | The stateTag attribute of the matched resource is smaller than the specified value. |
| stateTagBigger | stb | 0..1 | The stateTag attribute of the matched resource is bigger than the specified value. |
| expireBefore | exb | 0..1 | The expirationTime attribute of the matched resource is chronologically before the specified value. |
| expireAfter | exa | 0..1 | The expirationTime attribute of the matched resource is chronologically after the specified value. |
| labels | lbl | 0..1 | The labels attribute of the matched resource matches the specified value. |
| resourceType | ty | 0..n | The resourceType attribute of the matched resource is the same as the specified value. It also allows differentiating between normal and announced resources. |
| sizeAbove | sza | 0..1 | The contentSize attribute of the <contentInstance> matched resource is equal to or greater than the specified value. |
| sizeBelow | szb | 0..1 | The contentSize attribute of the <contentInstance> matched resource is smaller than the specified value. |
| Filter Handling Conditions | | | |
| limit | lim | 0..1 | The maximum number of resources to be included in the filtering result. This may be modified by the Hosting CSE. When it is modified, then the new value shall be smaller than the suggested value by the Originator. |
| level | lv | 0..1 | The maximum level of resource tree that the Hosting CSE shall perform the operation starting from the target resource (i.e. To parameter). This shall only be applied for Retrieve operation. The level of the target resource itself is zero and the level of the direct children of the target is one. |

As an initial condition to use discovery function, CSEBase need to have resources. Table 6.2.8.0-3 has detailed information of resources which will be used in this clause.

Table 6.2.8.0-3: Resource Specifications

| Resource Name | Resource attributes in JSON format |
|---------------|--|
| CSEBase | <pre>{ "m2m:cb": { "pi": null, "ty": 5, "ct": "20180302T070445", "ri": "CSE9486743758493047362", "rn": "mn-name", "lt": "20180302T070445", "lbl": ["mn-name"], "cst": 1, "csi": "/mn-name", "srt": [1, 2, 3, 4, 5, 9, 10, 13, 14, 16, 17, 23], "poa": ["http://192.168.0.10:8282"] } }</pre> |
| ae_actuator | <pre>{ "m2m:ae": { "pi": "mnID", "ty": 2, "ct": "20180404T083025", "ri": "CAE0120180404T0830251405122594272800_cse01", "rn": "ae_actuator", "lbl": ["actuator", "light"], "lt": "20180406T083320", "et": "20221231T235959", "api": "A01.com.company.Light", "aei": "CAE0120180404T0830251405122594272800_cse01", "rr": false } }</pre> |
| cnt_light1 | <pre>{ "m2m:cnt": { "pi": "CAE0120180404T0830251405122594272800_cse01", "ty": 3, "ct": "20180406T085318", "ri": "cnt20180406T0853181405855183193600_cse01", "rn": "cont_light1", "lt": "20180406T085318", "et": "20201231T235959", "lbl": ["indoor_light" "actuator"] } }</pre> |

| Resource Name | Resource attributes in JSON format |
|---------------|---|
| | <pre> "room1"], "st": 5, "cr": "S20170717074825768bp2l", "mni": 10000, "mbs": 60000000, "mia": 1600, "cni": 5, "cbs": 10 } } </pre> |
| cnt_light2 | <pre> { "m2m:cnt": { "pi": "CAE0120180404T0830251405122594272800_cse01", "ty": 3, "ct": "20180405T085318", "ri": "cnt20180406T0853181405855183193600_cse01", "rn": "cont_light2", "lt": "20180406T085318", "et": "20201231T235959", "lbl": ["outdoor_light" "actuator"], "st": 4, "cr": "S20170717074825768bp2l", "mni": 10000, "mbs": 60000000, "mia": 1600, "cni": 10, "cbs": 20 } } </pre> |
| ae_sensor | <pre> { "m2m:ae": { "pi": "mnID", "ty": 2, "ct": "20180404T083320", "ri": "CAE0120180404T0833201405122522252800_cse01", "rn": "ae_sensor", "lbl": ["sensor", "temperature"], "lt": "20180404T083320", "et": "20221231T235959", "api": "A01.com.company.Temperature", "aei": "CAE0120180404T0833201405122522252800_cse01", "rr": false } } </pre> |
| cnt_temp1 | <pre> { "m2m:cnt": { "pi": "CAE0120180404T0833201405122522252800_cse01", "ty": 3, "ct": "20180406T085712", "ri": "cnt20180406T0857121405855183193600_cse01", "rn": "cont_temp1", "lt": "20180406T085712", "et": "20201231T235959", "lbl": ["indoor_temperature" "sensor" "room2"], "st": 8, } } </pre> |

| Resource Name | Resource attributes in JSON format |
|---------------|--|
| | <pre> "cr": "S20170717074825768bp2l", "mni": 10000, "mbs": 60000000, "mia": 1600, "cni": 10, "cbs": 20 } } </pre> |
| cnt_temp2 | <pre> { "m2m:cnt": { "pi": "CAE0120180404T0833201405122522252800_cse01", "ty": 3, "ct": "20180406T085820", "ri": "cnt20180406T0858201405855563993600_cse01", "rn": "cont_temp2", "lt": "20180406T085820", "et": "20211231T235959", "lbl": ["outdoor_temperature" "sensor"], "st": 9, "cr": "S20170717074825768bp2l", "mni": 10000, "mbs": 60000000, "mia": 1600, "cni": 15, "cbs": 30 } } </pre> |

6.2.8.1 API-DIS-TY

| API Id | API/DIS_TY2 API/DIS_TY3 | | | | | | | | | | |
|--------------------------------|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| API Name | Discovery with resourceType Filter Criteria condition | | | | | | | | | | |
| Target Resource | CSEBase (can be any oneM2M resource primitives) | | | | | | | | | | |
| Description | The interface is used to discovery resources that match with the specific resource type . If found, the Hosting CSE sends back a response with matched resources. | | | | | | | | | | |
| Resource Structure | <pre> graph TD mn[mn-name (CSEBase)] --- ae_actuator[ae_actuator (AE)] mn --- ae_sensor[ae_sensor (AE)] ae_actuator --- cnt_light1[cnt_light1 (container)] ae_actuator --- cnt_light2[cnt_light2 (container)] ae_sensor --- cnt_temp1[cnt_temp1 (container)] ae_sensor --- cnt_temp2[cnt_temp2 (container)] </pre> <p>The diagram illustrates the resource structure. At the top is 'mn-name (CSEBase)'. It branches down into two 'AE' (Application Entity) boxes: 'ae_actuator (AE)' and 'ae_sensor (AE)'. The 'ae_actuator' box contains two 'cnt' (container) boxes: 'cnt_light1 (container)' and 'cnt_light2 (container)'. The 'ae_sensor' box also contains two 'cnt' (container) boxes: 'cnt_temp1 (container)' and 'cnt_temp2 (container)'.</p> | | | | | | | | | | |
| Call Flow | <pre> graph TD originator((originator)) -- "Discovery request with resourceType Filter Criteria" --> mn_name((mn-name)) mn_name -- "Response with matched resources if any" --> originator </pre> <p>The call flow shows the 'originator' sending a 'Discovery request with resourceType Filter Criteria' to the 'mn-name'. In response, the 'mn-name' returns a 'Response with matched resources if any' to the 'originator'.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with ty=2 | <p>API/DIS_TY2</p> <p>HTTP Request:</p> <pre> GET /mn-name?fu=1&ty=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0830251405122594272800_cse01 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|-------------------|--|
| | <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator", "/mn-name/ae_sensor" }</pre> |
| Example with ty=3 | <p>API/DIS_TY3</p> <p>HTTP Request:</p> <p>GET /mn-name?fu=1&ty=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180404T0830251405122594272800_cse01 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": ["/mn-name/ae_actuator/cnt_light1", "/mn-name/ae_actuator/cnt_light2", "/mn-name/ae_sensor/cnt_temp1", "/mn-name/ae_sensor/cnt_temp2"] }</pre> |

6.2.8.2 API-DIS-LBL

| API Id | API/DIS_LBL_ACTUATOR API/DIS_LBL_SENSOR | | | | | | | | | | |
|---|--|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| API Name | Discovery with label Filter Criteria condition | | | | | | | | | | |
| Target Resource | CSEBase (can be any oneM2M resource primitives) | | | | | | | | | | |
| Description | The interface is used to discovery resources that match with the specific label value . If found, the Hosting CSE sends back a response with matched resources. | | | | | | | | | | |
| Resource Structure | <pre> graph TD mn[mn-name (CSEBase)] --- ae_actuator[ae_actuator (AE)] mn --- ae_sensor[ae_sensor (AE)] ae_actuator --- cnt_light1[cnt_light1 (container)] ae_actuator --- cnt_light2[cnt_light2 (container)] ae_sensor --- cnt_temp1[cnt_temp1 (container)] ae_sensor --- cnt_temp2[cnt_temp2 (container)] </pre> <p>The diagram illustrates the resource structure within a CSEBase. It starts with a top-level node 'mn-name (CSEBase)'. Below it, there are two AE nodes: 'ae_actuator (AE)' and 'ae_sensor (AE)'. The 'ae_actuator' node contains two container resources: 'cnt_light1 (container)' and 'cnt_light2 (container)'. The 'ae_sensor' node contains two container resources: 'cnt_temp1 (container)' and 'cnt_temp2 (container)'.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator((originator)) -- "Discovery request with label Filter Criteria" --> mn_name((mn-name)) mn_name -- "Response with matched resources if any" --> originator </pre> <p>The call flow diagram shows the interaction between an 'originator' and a 'mn-name' (CSEBase). An arrow labeled 'Discovery request with label Filter Criteria' points from the originator to the mn-name. A return arrow labeled 'Response with matched resources if any' points from the mn-name back to the originator.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with <i>lbl=actuator</i> | <p>API/DIS_LBL_ACTUATOR</p> <p>HTTP Request:</p> <pre> GET /mn-name?fu=1&lbl=actuator HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|--------------------------------|---|
| | <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator", "/mn-name/ae_actuator/cnt_light1", "/mn-name/ae_actuator/cnt_light2" }</pre> |
| Example with lbl=sensor | <p>API/DIS_LBL_SENSOR</p> <p>HTTP Request:</p> <p>GET /mn-name?fu=1&lbl=sensor HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_sensor", "/mn-name/ae_sensor/cnt_temp1", "/mn-name/ae_sensor/cnt_temp2" }</pre> |

6.2.8.3 API-DIS-LVL

| API Id | API/DIS_LVL1 API/DIS_LVL2 | | | | | | | | | | |
|--------------------------------|--|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| API Name | Discovery with level Filter Criteria condition | | | | | | | | | | |
| Target Resource | CSEBase (can be any oneM2M resource primitives) | | | | | | | | | | |
| Description | The interface is used to discovery resources that match with the child /level value . If found, the Hosting CSE sends back a response with matched resources. | | | | | | | | | | |
| Resource Structure | <pre> graph TD mn[mn-name (CSEBase)] --- ae_actuator[ae_actuator (AE)] mn --- ae_sensor[ae_sensor (AE)] ae_actuator --- cnt_light1[cnt_light1 (container)] ae_actuator --- cnt_light2[cnt_light2 (container)] ae_sensor --- cnt_temp1[cnt_temp1 (container)] ae_sensor --- cnt_temp2[cnt_temp2 (container)] </pre> <p>The diagram illustrates the resource structure. At the top is 'mn-name (CSEBase)'. It branches down into two 'AE' (Actuator Entity) nodes: 'ae_actuator (AE)' and 'ae_sensor (AE)'. The 'ae_actuator' node further branches into two 'cnt' (container) nodes: 'cnt_light1 (container)' and 'cnt_light2 (container)'. The 'ae_sensor' node also branches into two 'cnt' (container) nodes: 'cnt_temp1 (container)' and 'cnt_temp2 (container)'.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator((originator)) -- "Discovery request with /level Filter Criteria" --> mn_name((mn-name)) mn_name -- "Response with matched resources if any" --> originator </pre> <p>The call flow shows the 'originator' sending a 'Discovery request with /level Filter Criteria' to the 'mn-name'. In response, the 'mn-name' returns 'Response with matched resources if any' to the 'originator'.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with lvl=1 | <p>API/DIS_LVL1</p> <p>HTTP Request:</p> <pre> GET /mn-name?fu=1&lvl=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|---------------------------|--|
| | <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator", "/mn-name/ae_sensor" }</pre> |
| Example with lvl=2 | <p>API/DIS_LVL2</p> <p>HTTP Request:</p> <p>GET /mn-name?fu=1&lvl=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator", "/mn-name/ae_actuator/cnt_light1", "/mn-name/ae_actuator/cnt_light2", "/mn-name/ae_sensor", "/mn-name/ae_sensor/cnt_temp1", "/mn-name/ae_sensor/cnt_temp2" }</pre> |

6.2.8.4 API-DIS-CRB, API-DIS-CRA

| API Id | API/DIS_CRB API/DIS_CRA | | | | | | | | | | |
|--------------------------------|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| API Name | Discovery with createdBefore and createdAfter Filter Criteria condition | | | | | | | | | | |
| Target Resource | CSEBase (can be any oneM2M resource primitives) | | | | | | | | | | |
| Description | The interface is used to discovery resources that match with the period of created time . If found, the Hosting CSE sends back a response with matched resources. | | | | | | | | | | |
| Resource Structure | <pre> graph TD mn[mn-name (CSEBase)] --- ae_actuator[ae_actuator (AE)] mn --- ae_sensor[ae_sensor (AE)] ae_actuator --- cnt_light1[cnt_light1 (container)] ae_actuator --- cnt_light2[cnt_light2 (container)] ae_sensor --- cnt_temp1[cnt_temp1 (container)] ae_sensor --- cnt_temp2[cnt_temp2 (container)] </pre> <p>The diagram illustrates the resource structure. At the top is 'mn-name (CSEBase)'. It branches down into two AE nodes: 'ae_actuator (AE)' and 'ae_sensor (AE)'. The 'ae_actuator' node is associated with two container resources: 'cnt_light1 (container)' and 'cnt_light2 (container)'. The 'ae_sensor' node is associated with two container resources: 'cnt_temp1 (container)' and 'cnt_temp2 (container)'.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator[originator] -- "Discovery request with created time Filter Criteria" --> mn_name["mn-name"] mn_name -- "Response with matched resources if any" --> originator </pre> <p>The call flow shows the 'originator' sending a 'Discovery request with created time Filter Criteria' to the 'mn-name'. In response, the 'mn-name' returns a 'Response with matched resources if any' to the 'originator'.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with crb | <p>API/DIS_CRB</p> <p>HTTP Request:</p> <pre> GET /mn-name?fu=1&crb=20180405T235959 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|-------------------------|--|
| | <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator", "/mn-name/ae_actuator/cnt_light2", "/mn-name/ae_sensor" }</pre> |
| Example with cra | <p>API/DIS_CRA</p> <p>HTTP Request:</p> <p>GET /mn-name?fu=1&cra=20180405T235959 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator/cnt_light1", "/mn-name/ae_sensor/cnt_temp1", "/mn-name/ae_sensor/cnt_temp2" }</pre> |

6.2.8.5 API-DIS-STB, API-DIS-STS

| API Id | API/DIS_STB API/DIS_STS | | | | | | | | | | |
|--------------------------------|--|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| API Name | Discovery with stateTagBigger and stateTagSmaller Filter Criteria condition | | | | | | | | | | |
| Target Resource | CSEBase (can be any oneM2M resource primitives) | | | | | | | | | | |
| Description | The interface is used to discovery resources that match with the stateTag . If found, the Hosting CSE sends back a response with matched resources. | | | | | | | | | | |
| Resource Structure | <pre> graph TD mn[mn-name (CSEBase)] --- ae_actuator[ae_actuator (AE)] mn --- ae_sensor[ae_sensor (AE)] ae_actuator --- cnt_light1[cnt_light1 (container)] ae_actuator --- cnt_light2[cnt_light2 (container)] ae_sensor --- cnt_temp1[cnt_temp1 (container)] ae_sensor --- cnt_temp2[cnt_temp2 (container)] </pre> <p>The diagram illustrates the resource structure. At the top is the mn-name (CSEBase). It contains two AE (Actuator Entity) resources: ae_actuator and ae_sensor. The ae_actuator resource contains two cnt (container) resources: cnt_light1 and cnt_light2. The ae_sensor resource also contains two cnt (container) resources: cnt_temp1 and cnt_temp2.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator((originator)) -- "Discovery request with stateTag Filter Criteria" --> mn_name((mn-name)) mn_name -- "Response with matched resources if any" --> originator </pre> <p>The call flow starts with the originator sending a "Discovery request with stateTag Filter Criteria" to the mn-name. In response, the mn-name returns a "Response with matched resources if any" to the originator.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with stb | <p>API/DIS_STB</p> <p>HTTP Request:</p> <pre> GET /mn-name?fu=1&stb=6 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|------------------|---|
| | <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_sensor/cnt_temp1", "/mn-name/ae_sensor/cnt_temp2" }</pre> |
| Example with sts | <p>API/DIS_STS</p> <p>HTTP Request:</p> <p>GET /mn-name?fu=1&sts=6 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator/cnt_light1", "/mn-name/ae_actuator/cnt_light2" }</pre> |

6.2.8.6 API-DIS-SZB, API-DIS-SZA

| API Id | API/DIS_SZB API/DIS_SZA | | | | | | | | | | |
|--------------------------------|--|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| API Name | Discovery with sizeBelow and sizeAbove Filter Criteria condition | | | | | | | | | | |
| Target Resource | CSEBase (can be any oneM2M resource primitives) | | | | | | | | | | |
| Description | The interface is used to discovery resources that match with the size of container . If found, the Hosting CSE sends back a response with matched resources. | | | | | | | | | | |
| Resource Structure | <pre> graph TD mn[mn-name (CSEBase)] --- ae_actuator[ae_actuator (AE)] mn --- ae_sensor[ae_sensor (AE)] ae_actuator --- cnt_light1[cnt_light1 (container)] ae_actuator --- cnt_light2[cnt_light2 (container)] ae_sensor --- cnt_temp1[cnt_temp1 (container)] ae_sensor --- cnt_temp2[cnt_temp2 (container)] </pre> <p>The diagram illustrates the resource structure. At the top is 'mn-name (CSEBase)'. It branches down into two 'AE' (Actuator Entity) nodes: 'ae_actuator (AE)' and 'ae_sensor (AE)'. The 'ae_actuator' node is connected to two 'cnt_light' container nodes: 'cnt_light1 (container)' and 'cnt_light2 (container)'. The 'ae_sensor' node is connected to two 'cnt_temp' container nodes: 'cnt_temp1 (container)' and 'cnt_temp2 (container)'.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator((originator)) -- "Discovery request with size of container Filter Criteria" --> mn_name((mn-name)) mn_name -- "Response with matched resources if any" --> originator </pre> <p>The call flow shows the 'originator' sending a 'Discovery request with size of container Filter Criteria' to the 'mn-name'. In response, the 'mn-name' returns a 'Response with matched resources if any' to the 'originator'.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with szb | <p>API/DIS_SZB</p> <p>HTTP Request:</p> <pre> GET /mn-name?fu=1&szb=15 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

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|-------------------------|--|
| | <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator/cnt_light1" }</pre> |
| Example with sza | <p>API/DIS_SZA</p> <p>HTTP Request:</p> <p>GET /mn-name?fu=1&sza=15 HTTP/1.1 Accept: application/json Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator/cnt_light2", "/mn-name/ae_sensor/cnt_temp1", "/mn-name/ae_sensor/cnt_temp2" }</pre> |

6.2.8.7 API-DIS-US, API-DIS-MS

| API Id | API/DIS_US API/DIS_MS | | | | | | | | | | |
|--------------------------------|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| API Name | Discovery with unmodifiedSince and modifiedSince Filter Criteria condition | | | | | | | | | | |
| Target Resource | CSEBase (can be any oneM2M resource primitives) | | | | | | | | | | |
| Description | The interface is used to discovery resources that match with the time of modification . If found, the Hosting CSE sends back a response with matched resources. | | | | | | | | | | |
| Resource Structure | <pre> graph TD mn[mn-name (CSEBase)] --- ae_actuator[ae_actuator (AE)] mn --- ae_sensor[ae_sensor (AE)] ae_actuator --- cnt_light1[cnt_light1 (container)] ae_actuator --- cnt_light2[cnt_light2 (container)] ae_sensor --- cnt_temp1[cnt_temp1 (container)] ae_sensor --- cnt_temp2[cnt_temp2 (container)] </pre> <p>The diagram illustrates the resource structure. At the top is 'mn-name (CSEBase)'. It branches down into two 'AE' (Application Entity) boxes: 'ae_actuator (AE)' and 'ae_sensor (AE)'. The 'ae_actuator' box contains two 'cnt_light' container resources: 'cnt_light1 (container)' and 'cnt_light2 (container)'. The 'ae_sensor' box contains two 'cnt_temp' container resources: 'cnt_temp1 (container)' and 'cnt_temp2 (container)'.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator((originator)) -- "Discovery request with modified time Filter Criteria" --> mn_name((mn-name)) mn_name -- "Response with matched resources if any" --> originator </pre> <p>The call flow shows the 'originator' sending a 'Discovery request with modified time Filter Criteria' to the 'mn-name'. In response, the 'mn-name' returns a 'Response with matched resources if any' to the 'originator'.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with us | <p>API/DIS_US</p> <p>HTTP Request:</p> <pre> GET /mn-name?fu=1&us=20180405T235959 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

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|-----------------|---|
| | <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_sensor" }</pre> |
| Example with ms | <p>API/DIS_MS</p> <p>HTTP Request:</p> <pre>GET /mn-name?fu=1&ms=20180405T235959 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator", "/mn-name/ae_actuator/cnt_light1", "/mn-name/ae_actuator/cnt_light2", "/mn-name/ae_sensor/cnt_temp1", "/mn-name/ae_sensor/cnt_temp2" }</pre> |

6.2.8.8 API-DIS-EXB, API-DIS-EXA

| API Id | API/DIS_EXB API/DIS_EXA | | | | | | | | | | |
|--------------------------------|--|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| API Name | Discovery with expiredBefore and expiredAfter Filter Criteria condition | | | | | | | | | | |
| Target Resource | CSEBase (can be any oneM2M resource primitives) | | | | | | | | | | |
| Description | The interface is used to discovery resources that match with the period of expirationTime . If found, the Hosting CSE sends back a response with matched resources. | | | | | | | | | | |
| Resource Structure | <pre> graph TD mn[mn-name (CSEBase)] --- ae_actuator[ae_actuator (AE)] mn --- ae_sensor[ae_sensor (AE)] ae_actuator --- cnt_light1[cnt_light1 (container)] ae_actuator --- cnt_light2[cnt_light2 (container)] ae_sensor --- cnt_temp1[cnt_temp1 (container)] ae_sensor --- cnt_temp2[cnt_temp2 (container)] </pre> <p>The diagram illustrates the resource structure. At the top is 'mn-name (CSEBase)'. It has two children: 'ae_actuator (AE)' and 'ae_sensor (AE)'. 'ae_actuator' has two container resources: 'cnt_light1 (container)' and 'cnt_light2 (container)'. 'ae_sensor' has two container resources: 'cnt_temp1 (container)' and 'cnt_temp2 (container)'.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator((originator)) -- "Discovery request with expirationTime Filter Criteria" --> mn_name((mn-name)) mn_name -- "Response with matched resources if any" --> originator </pre> <p>The call flow shows the 'originator' sending a 'Discovery request with expirationTime Filter Criteria' to the 'mn-name'. In response, the 'mn-name' returns a 'Response with matched resources if any' to the 'originator'.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with exb | <p>API/DIS_EXB</p> <p>HTTP Request:</p> <pre> GET /mn-name?fu=1&exb=20211231T235959 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

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| | <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator/cnt_light1", "/mn-name/ae_actuator/cnt_light2", "/mn-name/ae_sensor/cnt_temp1", "/mn-name/ae_sensor/cnt_temp2" }</pre> |
| Example with exa | <p>API/DIS_EXA</p> <p>HTTP Request:</p> <p>GET /mn-name?fu=1&exa=20211231T235959 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": "/mn-name/ae_actuator", "/mn-name/ae_sensor", }</pre> |

6.2.9 Resource Type *subscription*

6.2.9.0 Introduction

The <subscription> resource contains subscription information for its subscribed-to resource. The <subscription> resource created under the subscribed-to resource. Each <subscription> may include notification policies that specify when, and how notification are sent.

6.2.9.1 API-SUB-CRE

| API Id | API/SUB/CRE/001 API/SUB/CRE/001_RCN0 API/SUB/CRE/001_RCN1 API/SUB/CRE/001_RCN2 API/SUB/CRE/001_RCN3 | | | | | | | | | | |
|--|--|--------|-------|----------|------------|--------------|---------------------|--------------|------------------------|-----------|---------------------------|
| API Name | <subscription> resource CREATE | | | | | | | | | | |
| Target Resource | <AE> resource of the requested <subscription> resource | | | | | | | | | | |
| Description | The interface is used to send a <subscription> CREATE request attached with resultContent to the Registrar CSE, and the Registrar CSE creates a <subscription> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_actuator (AE)] </pre> <p>The diagram shows a hierarchical structure. At the top is a box labeled "mn-name (CSEBase)". A line connects it to a smaller box below it labeled "ae_actuator (AE)".</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator[originator] -- "subscription create request" --> mn[mn-name] mn -- Response --> originator </pre> <p>The diagram illustrates the call flow. On the left is a blue rounded rectangle labeled "originator". On the right is another blue rounded rectangle labeled "mn-name". A horizontal arrow points from "originator" to "mn-name", labeled "subscription create request". A return arrow points from "mn-name" back to "originator", labeled "Response". Both "originator" and "mn-name" are connected by dashed vertical lines to their respective components in the resource structure diagram above.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json;ty=23</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json;ty=23 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| Content-Type | application/json;ty=23 | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/SUB/CRE/001_RCN0</p> <p>HTTP Request:</p> <pre> POST /mn-name/ae_actuator?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=23 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

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| | <pre>{ "m2m:sub": { "enc": { "net": [2] }, "nct": 2, "nu": ["https://192.168.0.10:8282/notification/handler"], "rn": "ae_sub" } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Location: mn-name/ae_actuator/ae_sub Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</p> |
| Example with no RCN or RCN=1 | <p>API/SUB/CRE/001 API/SUB/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /mn-name/ae_actuatorHTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=23 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre>{ "m2m:sub": { "enc": { "net": [2] }, "nct": 2, "nu": ["https://192.168.0.10:8282/notification/handler"], "rn": "ae_sub" } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Location: mn-name/ae_actuator/ae_sub Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> |

| | |
|---------------------------|--|
| | <p>X-M2M-RSC: 2001</p> <pre>{ "m2m:sub": { "rn": "ae_sub", "ty": 23, "ri": "SUB583675048372974938", "pi": "CAE5630283216026458665", "ct": "20180302T070445", "lt": "20180302T070445", "nu": ["https://192.168.0.10:8282/notification/handler"], "crn": 2, "mmn": 50, "enc": { "net": [2] }, "nct": 2 } }</pre> |
| Example with RCN=2 | <p>API/SUB/CRE/001_RCN2</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_actuator?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=23 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sub": { "enc": { "net": [2] }, "nct": 2, "nu": ["https://192.168.0.10:8282/notification/handler"], "rn": "ae_sub" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/ae_actuator/ae_sub Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:uri": "mn-name/ae_actuator/ae_sub" }</pre> |

| | |
|---------------------------|---|
| Example with RCN=3 | <h3>API/SUB/CRE/001_RCN3</h3> <p>HTTP Request:</p> <pre>POST /mn-name/ae_actuator?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=23 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sub": { "enc": { "net": [2] }, "nct": 2, "nu": ["https://192.168.0.10:8282/notification/handler"], "rn": "ae_sub" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/ae_actuator/ae_sub Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:sub": { "rn": "ae_sub", "ty": 23, "ri": "SUB583675048372974938", "pi": "CAE5630283216026458665", "ct": "20180302T070445", "lt": "20180302T070445", "nu": ["https://192.168.0.10:8282/notification/handler"], "cm": 2, "mnm": 50, "enc": { "net": [2] }, "nct": 2 } }</pre> |
|---------------------------|---|

6.2.9.2 API-SUB-RET

| API Id | API/SUB/RET/001 API/SUB/RET/001_RCN1 | | | | | | | | | | |
|--|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <subscription> resource RETRIEVE with resultContent set to 1 | | | | | | | | | | |
| Target Resource | Requested <subscription> resource | | | | | | | | | | |
| Description | The interface is used to send a <subscription> RETRIEVE request attached with resultContent set to 1 to the <subscription> resource hosting CSE and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_actuator (AE)] ae --- sub[ae_sub (subscription)] </pre> | | | | | | | | | | |
| Call Flow | <pre> graph TD originator[originator] -- "subscription retrieve request" --> mn[mn-name] mn -- Response --> originator </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with no RCN or RCN=1 | <p>API/SUB/RET/001</p> <p>HTTP Request:</p> <pre> GET /mn-name/ae_actuator/ae_sub HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/ae_actuator/ae_sub Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|--|--|
| | <p>X-M2M-RSC: 2000</p> <pre>{ "m2m:sub": { "rn": "ae_sub", "ty": 23, "ri": "SUB583675048372974938", "pi": "CAE5630283216026458665", "ct": "20180302T070445", "lt": "20180302T070445", "nu": ["https://192.168.0.10:8282/notification/handler"], "crn": 2, "mnm": 50, "enc": { "net": [2] }, "nct": 2 } }</pre> |
|--|--|

6.2.9.3 API-SUB-UPD

| | |
|--|--|
| API Id | API/SUB/UPD/001 API/SUB/UPD/001_RCN0 API/SUB/UPD/001_RCN1 |
| API Name | <subscription> resource UPDATE with resultContent parameter |
| Target Resource | Requested <subscription> resource |
| Description | The interface is used to send a <subscription> UPDATE request attached with resultContent to the Registrar CSE, and the Registrar CSE updates a <subscription> resource and sends back a response. |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_actuator (AE)] ae --- sub[ae_sub (subscription)] </pre> |
| Call Flow | <pre> graph LR originator[originator] -- "subscription update request" --> mn[mn-name] mn -- Response --> originator </pre> |

| HTTP Header Information | <table border="1" data-bbox="476 213 1261 370"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>Content-Type</td><td>application/json</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
|-------------------------------------|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------|-----------|---------------------------|
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/SUB/UPD/001_RCN0</p> <p>HTTP Request:</p> <pre>PUT /mn-name/ae_actuator/ae_sub?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sub": { "nct": 3 } }</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_actuator/ae_sub Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004</pre> | | | | | | | | | | |
| Example with no RCN or RCN=1 | <p>API/SUB/UPD/001</p> <p>API/SUB/UPD/001_RCN1</p> <p>HTTP Request:</p> <pre>PUT /mn-name/ae_actuator/ae_sub HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sub": { "nct": 3 } }</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_actuator/ae_sub Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> | | | | | | | | | | |

| | |
|--|--|
| | <p>X-M2M-RSC: 2004</p> <pre>{ "m2m:sub": { "rn": "ae_sub", "ty": 23, "ri": "SUB583675048372974938", "pi": "CAE5630283216026458665", "ct": "20180302T070445", "lt": "20180302T070445", "nu": ["https://192.168.0.10:8282/notification/handler"], "crn": 2, "mnm": 50, "enc": { "net": [2] }, "nct": 3 } }</pre> |
|--|--|

6.2.9.4 API-SUB-DEL

| API Id | API/SUB/DEL/001 API/SUB/DEL/001_RCN0 API/SUB/DEL/001_RCN1 | | | | | | | | | | |
|--|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <subscription> resource DELETE with resultContent parameter | | | | | | | | | | |
| Target Resource | Requested <subscription> resource | | | | | | | | | | |
| Description | The interface is used to send a <subscription> DELETE request attached with resultContent to the Registrar CSE, and the Registrar CSE deletes a <subscription> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_actuator (AE)] ae --- sub[ae_sub (subscription)] </pre> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator((originator)) -- "subscription delete request" --> mn[mn-name] mn -- Response --> originator </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| | | | | | | | | | | | |

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|-------------------------------------|--|
| Example with no RCN or RCN=0 | <p>API/SUB/DEL/001</p> <p>API/SUB/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_actuator/ae_sub?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_actuator/ae_sub Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002</pre> |
| Example with RCN=1 | <p>API/SUB/DEL/001_RCN1</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_actuator/ae_sub?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_actuator/ae_sub Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002</pre> <pre>{ "m2m:sub": { "rn": "ae_sub", "ty": 23, "ri": "SUB583675048372974938", "pi": "CAE5630283216026458665", "ct": "20180302T070445", "lt": "20180302T070445", "nu": ["https://192.168.0.10:8282/notification/handler"], "cm": 2, "mn": 50, "enc": { "net": [2] }, "nct": 3 } }</pre> |

6.2.10 Resource Type *group*

6.2.10.0 Introduction

The <group> resource represents a group of resources of the same or mixed types. It basically designed to handle several of resources at the same time. When a request sent through the <group> resource, it distributes the request to each member of the <group> resources, which are indicated by the memberIDs attribute.

6.2.10.1 API-GRP-CRE

| API Id | API/GRP/CRE/001 API/GRP/CRE/001_RCN0 API/GRP/CRE/001_RCN1 API/GRP/CRE/001_RCN2 API/GRP/CRE/001_RCN3 | | | | | | | | | | |
|--|---|--------|-------|----------|------------|--------------|---------------------|--------------|-----------------------|-----------|---------------------------|
| API Name | <group> resource CREATE | | | | | | | | | | |
| Target Resource | <AE> resource of the requested <group> resource | | | | | | | | | | |
| Description | The interface is used to send a <group> CREATE request attached with resultContent to the Registrar CSE, and the Registrar CSE creates a <group> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_actuator (AE)] </pre> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant originator participant mnName originator->>mnName: group create request mnName-->>originator: Response </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json;ty=9</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json;ty=9 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| Content-Type | application/json;ty=9 | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/GRP/CRE/001_RCN0</p> <p>HTTP Request:</p> <pre> POST /mn-name/ae_actuator?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=9 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|--|--|
| | <pre>{ "m2m:grp": { "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mt": 3, "mnm": 50, "rn": "group_lamp" } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</p> |
| <i>Example with no RCN or RCN=1</i> | <p>API/GRP/CRE/001 API/GRP/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /mn-name/ae_actuator HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=9 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre>{ "m2m:grp": { "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mt": 3, "mnm": 50, "rn": "group_lamp" } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> |

| | |
|--------------------|---|
| | <p>X-M2M-RSC: 2001</p> <pre>{ "m2m:grp": { "rn": "group_lamp", "ty": 9, "ri": "GRP792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "mt": 3, "cnm": 2, "mmn": 50, "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mtv": true, "csy": 1 } }</pre> |
| Example with RCN=2 | <p>API/GRP/CRE/001_RCN2</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_actuator?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=9 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:grp": { "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mt": 3, "mmn": 50, "rn": "group_lamp" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:uri": "mn-name/ae_actuator/group_lamp" }</pre> |

| | |
|---------------------------|--|
| Example with RCN=3 | <h3>API/GRP/CRE/001_RCN3</h3> <p>HTTP Request:</p> <pre>POST /mn-name/ae_actuator?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=9 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:grp": { "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mt": 3, "mnm": 50, "rn": "group_lamp" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:rce": { "m2m:grp": { "rn": "group_lamp", "ty": 9, "ri": "GRP792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "mt": 3, "cnn": 2, "mnm": 50, "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mtv": true, "csy": 1 } }, "uri": "mn-name/ae_actuator/group_lamp" }</pre> |
|---------------------------|--|

6.2.10.2 API-GRP-RET

| API Id | API/GRP/RET/001 API/GRP/RET/001_RCN1 | | | | | | | | | | |
|--|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <group> resource RETRIEVE with resultContent set to 1 | | | | | | | | | | |
| Target Resource | Requested <group> resource | | | | | | | | | | |
| Description | The interface is used to send a <group> RETRIEVE request attached with resultContent set to 1 to the <group> resource hosting CSE and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_actuator (AE)] ae --- group[group_lamp (group)] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSEBase)". A line connects it to a box below labeled "ae_actuator (AE)". From "ae_actuator (AE)", another line connects to a box at the bottom labeled "group_lamp (group)".</p> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant originator participant mn originator->>mn: group retrieve request mn-->>originator: Response </pre> <p>The call flow diagram illustrates the interaction between an "originator" and a "mn-name". An arrow points from the originator to the mn-name, labeled "group retrieve request". A return arrow points from the mn-name back to the originator, labeled "Response".</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with no RCN or RCN=1 | <p>API/GRP/RET/001 API/GRP/RET/001_RCN1</p> <p>HTTP Request:</p> <pre> GET /mn-name/ae_actuator/group_lamp?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|--|---|
| | <pre>X-M2M-RSC: 2000 { "m2m:grp": { "rn": "group_lamp", "ty": 9, "ri": "GRP792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "mt": 3, "cnm": 2, "mmn": 50, "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"] } }</pre> |
|--|---|

6.2.10.3 API-GRP-UPD

| API Id | API/GRP/UPD/001 API/GRP/UPD/001_RCN0 API/GRP/UPD/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------|-----------|---------------------------|
| API Name | <group> resource UPDATE with resultContent parameter | | | | | | | | | | |
| Target Resource | Requested <group> resource | | | | | | | | | | |
| Description | The interface is used to send a <group> UPDATE request attached with resultContent to the Registrar CSE, and the Registrar CSE updates a <group> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_actuator (AE)] ae --- group[group_lamp (group)] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSEBase)". A line connects it to a box below labeled "ae_actuator (AE)". From "ae_actuator (AE)", another line connects to a box labeled "group_lamp (group)" at the bottom.</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator[originator] -- "group update request" --> mn[mn-name] mn -- Response --> originator </pre> <p>The call flow diagram illustrates the interaction between an "originator" and a "mn-name". An arrow labeled "group update request" points from the originator to the mn-name. A return arrow labeled "Response" points from the mn-name back to the originator.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |

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| Example with RCN=0 | <p>API/GRP/UPD/001_RCN0</p> <p>HTTP Request:</p> <pre>PUT /mn-name/ae_actuator/group_lamp?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:grp": { "mnm": 100 } }</pre> <p>HTTP Response:</p> <p>200 OK Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004</p> |
| Example with no RCN or RCN=1 | <p>API/GRP/UPD/001 API/GRP/UPD/001_RCN1</p> <p>HTTP Request:</p> <pre>PUT /mn-name/ae_actuator/group_lamp?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:grp": { "mnm": 100 } }</pre> <p>HTTP Response:</p> <p>200 OK Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> |

| | |
|--|---|
| | <p>X-M2M-RSC: 2004</p> <pre>{ "m2m:grp": { "rn": "group_lamp", "ty": 9, "ri": "GRP792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "mt": 3, "cnm": 2, "mmn": 100, "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"] } }</pre> |
|--|---|

6.2.10.4 API-GRP-DEL

| API Id | API/GRP/DEL/001 API/GRP/DEL/001_RCN0 API/GRP/DEL/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|--------|-------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <group> resource DELETE with resultContent parameter | | | | | | | | | | |
| Target Resource | Requested <group> resource | | | | | | | | | | |
| Description | The interface is used to send a <group> DELETE request attached with resultContent to the Registrar CSE, and the Registrar CSE deletes a <group> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD CSEBase["mn-name (CSEBase)"] --- AE["ae_actuator (AE)"] AE --- GroupLamp["group_lamp (group)"] </pre> | | | | | | | | | | |
| Call Flow | <pre> graph TD originator[originator] -- "group delete request" --> mnname["mn-name"] mnname -- Response --> originator </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/ json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/ json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/ json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |

| | |
|-------------------------------------|--|
| Example with RCN=0 | <p>API/GRP/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_actuator/group_lamp?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002</pre> |
| Example with no RCN or RCN=1 | <p>API/GRP/DEL/001</p> <p>API/GRP/DEL/001_RCN1</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_actuator/group_lamp?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002 { "m2m:grp": { "rn": "group_lamp", "ty": 9, "ri": "GRP792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "mt": 3, "cm": 2, "mm": 100, "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mtv": true, "csy": 1 } }</pre> |

6.2.10.5 API-GRP-FOPT

| API Id | API/GRP/FOPT/001 | | | | | | | | | | |
|--|---|--------|-------|----------|------------|--------------|---------------------|--------------|-----------------------|-----------|---------------------------|
| API Name | <group> resource | | | | | | | | | | |
| Target Resource | Fopt virtual resource of the <group> resource | | | | | | | | | | |
| Description | The interface is used to send a contentInstance CREATE request to the FanoutOutPoint Virtual resource of a group. As a result, the contentInstances will be created on each container that belonging to this group. | | | | | | | | | | |
| Resource Structure before Sending Request | <p style="text-align: center;">mn-name (CSE)</p> <p style="text-align: center;">ae_sensor (AE)</p> <p style="text-align: center;">cont_temp (container)</p> | | | | | | | | | | |
| Call Flow | <pre> graph TD originator[originator] -- "group create request" --> mnName[mn-name] mnName -- Response --> originator </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json;ty=4</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json;ty=4 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| Content-Type | application/json;ty=4 | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |

| | |
|-------------------------------------|---|
| Example with no RCN or RCN=1 | <p>API/GRP/</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_actuator/group_lamp/fopt HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=4 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cin": { "con": "20" } }</pre> <p>HTTP Response:</p> <pre>200 Created Content-Location: mn-name/ae_actuator/group_lamp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000 { "m2m:agr": { "rsp": [{ "fr": "/ID-CSE-01/mn-name/ae_actuator/lamp_container1", "pc": { "m2m:cin": { "con": "20", "cs": 2, "ct": "20200609T163651,675786", "et": "99991231T235959", "lt": "20200609T163651,675786", "pi": "cnt20200609T1632571403417286346243_cse01", "ri": "cin20200609T1636511403417286346245_cse01", "rn": "fopt20200609T1636511403417286346244_cse01", "st": 1, "ty": 4 } }, "rqi": "1234", "rsc": 2001 }, { "fr": "/ID-CSE-01/mn-name/ae_actuator/lamp_container2", "pc": { "m2m:cin": { "con": "20", "cs": 2, "ct": "20200609T163651,680775", "et": "99991231T235959", "lt": "20200609T163651,680775", "pi": "cnt20200609T1609261403417286346240_cse01", "ri": "cin20200609T1636511403417286346246_cse01", "rn": "fopt20200609T1636511403417286346244_cse01", "st": 1, "ty": 4 } } }] } }</pre> |
|-------------------------------------|---|

| | |
|--|---|
| | <pre> "rqi": "1234", "rsc": 2001 } } </pre> |
|--|---|

6.2.11 Resource Type *timeSeries*

6.2.11.0 Introduction

The <timeSeries> resource represents a container for Time Series Data Instance. It is used to share information with other entities and potentially to track, detect and report the missing data in Time Series.

6.2.11.1 API-TS-CRE

| API Id | API/TS/CRE/001 API/TS/CRE/001/_RCN0 API/TS/CRE/001/_RCN1 API/TS/CRE/001/_RCN2 API/TS/CRE/001/_RCN3 | | | | | | | | | | |
|--|--|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------------|-----------|---------------------------|
| API Name | <timeSeries> resource CREATE with resultContent parameter | | | | | | | | | | |
| Target Resource | <AE> resource of the requested <timeSeries> resource | | | | | | | | | | |
| Description | The interface is used to send a <timeSeries> CREATE request attached with resultContent to the Registrar CSE, and the Registrar CSE creates a <timeSeries> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_sensor (AE)] </pre> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator((originator)) -- "timeSeries create request" --> mn[mn-name] mn -- Response --> originator </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json;ty=29</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json;ty=29 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json;ty=29 | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |

| | |
|-------------------------------------|--|
| Example with RCN=0 | <p>API/TS/CRE/001_RCN0</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=29 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ts": { "rn": timeSeries_cont, "pei": 1, "mdd": true, "mdt": 5 } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/ae_sensor/timeSeries_cont Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</pre> |
| Example with no RCN or RCN=1 | <p>API/TS/CRE/001 API/TS/CRE/001_RCN1</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=29 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ts": { "rn": timeSeries_cont, "pei": 1, "mdd": true, "mdt": 1 } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/ae_sensor/timeSeries_cont Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> |

| | |
|--------------------|---|
| | <p>X-M2M-RSC: 2001</p> <pre>{ "m2m:ts": { "rn": "timeSeries_cont", "ty": 29, "ri": "TS792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "et": "2021212T170445", "st": 0, "mni": 3153600000, "mbs": 3153600000, "mia": 31536000, "cni": 0, "cbs": 0, "pei": 1, "mdd": "true", "mdn": 1000, "mdc": 0, "mdt": 1 } }</pre> |
| Example with RCN=2 | <p>API/TS/CRE/001_RCN2</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=29 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ts": { "rn": "timeSeries_cont", "pei": 1, "mdd": true, "mdt": 1 } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/ae_sensor/timeSeries_cont Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:uri": "mn-name/ae_sensor/timeSeries_cont" }</pre> |

| | |
|----------------------------------|---|
| <p>Example with RCN=3</p> | <p>API/TS/CRE/001_RCN3</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=29 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ts": { "rn": timeSeries_cont, "pei": 1, "mdd": true, "mdt": 1 } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/ae_sensor/timeSeries_cont Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:rce": { "m2m:ts": { "rn": "timeSeries_cont", "ty": 29, "ri": "TS792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "et": "2021212T170445", "st": 0, "mni": 3153600000, "mbs": 3153600000, "mia": 31536000, "cni": 0, "cbs": 0, "pei": 1, "mdd": "ture", "mdn": 1000, "mdc": 0, "mdt": 1 } } }</pre> |
|----------------------------------|---|

6.2.11.2 API-TS-RET

| API Id | API/TS/CRE/001 API/TS/CRE/001_RCN1 | | | | | | | | | | |
|--|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <timeSeries> resource RETRIEVE with resultContent parameter | | | | | | | | | | |
| Target Resource | Requested <timeSeries> resource | | | | | | | | | | |
| Description | The interface is used to send a <timeSeries> RETRIEVE request attached with resultContent set to 1 to the Registrar CSE and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_sensor (AE)] ae --- ts[timeSeries_cnt (timeSeries)] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSEBase)". A line connects it to a box below labeled "ae_sensor (AE)". From "ae_sensor (AE)", another line connects to a box at the bottom labeled "timeSeries_cnt (timeSeries)".</p> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant originator participant mn originator->>mn: timeSeries retrieve request mn-->>originator: Response </pre> <p>The call flow diagram illustrates the interaction between an "originator" and a "mn-name". An arrow points from the originator to the mn-name, labeled "timeSeries retrieve request". An arrow returns from the mn-name to the originator, labeled "Response".</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with no RCN or RCN=1 | <p>API/TS/RET/001 API/TS/RET/001_RCN1</p> <p>HTTP Request:</p> <pre> GET /mn-name/ae_sensor?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/ae_sensor/timeSeries_cont Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|--|---|
| | <p>X-M2M-RSC: 2000</p> <pre>{ "m2m:ts": { "rn": "timeSeries_cont", "ty": 29, "ri": "TS792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "et": "2021212T170445", "st": 0, "mni": 3153600000, "mbs": 3153600000, "mia": 31536000, "cni": 0, "cbs": 0, "pei": 1, "mdd": "ture", "mdn": 1000, "mdc": 0, "mdi": 1 } }</pre> |
|--|---|

6.2.11.3 API-TS-UPD

| | |
|--|--|
| API Id | API/TS/UPD/001 API/TS/UPD/001_RCN0 API/TS/UPD/001_RCN1 |
| API Name | <timeSeries> resource UPDATE with resultContent parameter |
| Target Resource | Requested <timeSeries> resource |
| Description | The interface is used to send a <timeSeries> UPDATE request attached with resultContent to the Registrar CSE, and the Registrar CSE updates a <timeSeries> resource and sends back a response. |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_sensor (AE)] ae --- ts[timeSeries_cnt (timeSeries)] </pre> |
| Call Flow | <pre> graph LR originator((originator)) -- "timeSeries update request" --> mn[mn-name] mn -- Response --> originator </pre> |

| HTTP Header Information | <table border="1" data-bbox="476 213 1261 370"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>Content-Type</td><td>application/json</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
|-------------------------------------|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------|-----------|---------------------------|
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/TS/UPD/001_RCN0</p> <p>HTTP Request:</p> <pre>PUT /mn-name/ae_sensor/timeSeries_cont?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ts": { "mdt": 2 } }</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_sensor/timeSeries_cont Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004</pre> | | | | | | | | | | |
| Example with no RCN or RCN=1 | <p>API/TS/UPD/001 API/TS/UPD/001_RCN1</p> <p>HTTP Request:</p> <pre>PUT /mn-name/ae_sensor/timeSeries_cont?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:ts": { "mdt": 2 } }</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_sensor/timeSeries_cont Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> | | | | | | | | | | |

| | |
|--|---|
| | <p>X-M2M-RSC: 2004</p> <pre>{ "m2m:ts": { "rn": "timeSeries_cont", "ty": 29, "ri": "TS792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "et": "2021212T170445", "st": 0, "mni": 3153600000, "mbs": 3153600000, "mia": 31536000, "cni": 0, "cbs": 0, "pei": 1, "mdd": "ture", "mdn": 1000, "mdc": 0, "mdi": 2 } }</pre> |
|--|---|

6.2.11.4 API-TS-DEL

| | |
|--|--|
| API Id | API/TS/DEL/001 API/TS/DEL/001_RCN0 API/TS/DEL/001_RCN1 |
| API Name | <timeSeries> resource DELETE with resultContent parameter |
| Target Resource | Requested <timeSeries> resource |
| Description | The interface is used to send a <timeSeries> DELETE request attached with resultContent to the Registrar CSE, and the Registrar CSE updates a <timeSeries> resource and sends back a response. |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_sensor (AE)] ae --- ts[timeSeries_cnt (timeSeries)] </pre> |
| Call Flow | <pre> graph LR originator((originator)) -- "timeSeries delete request" --> mn[mn-name] mn -- Response --> originator </pre> |

| HTTP Header Information | <table border="1" data-bbox="484 213 1261 370"> <thead> <tr> <th data-bbox="531 213 690 247">Header</th><th data-bbox="944 213 1007 247">Value</th></tr> </thead> <tbody> <tr> <td data-bbox="531 247 690 280">Accept</td><td data-bbox="690 247 1007 280">application/json</td></tr> <tr> <td data-bbox="531 280 690 314">X-M2M-RI</td><td data-bbox="690 280 1007 314">Request ID</td></tr> <tr> <td data-bbox="531 314 690 348">X-M2M-Origin</td><td data-bbox="690 314 1007 348">AE-ID of request originator</td></tr> <tr> <td data-bbox="531 348 690 381">X-M2M-RVI</td><td data-bbox="690 348 1007 381">Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
|------------------------------|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with no RCN or RCN=0 | <p>API/TS/DEL/001 API/TS/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_sensor/timeSeries_cont?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_sensor/timeSeries_cont Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002</pre> | | | | | | | | | | |
| Example with RCN=1 | <p>API/TS/DEL/001_RCN1</p> <p>HTTP Request:</p> <pre>DELETE /mn-name/ae_sensor/timeSeries_cont?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/ae_sensor/timeSeries_cont Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> | | | | | | | | | | |

| | |
|--|---|
| | <p>X-M2M-RSC: 2002</p> <pre>{ "m2m:ts": { "rn": "timeSeries_cont", "ty": 29, "ri": "TS792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "et": "2021212T170445", "st": 0, "mni": 3153600000, "mbs": 3153600000, "mia": 31536000, "cni": 0, "cbs": 0, "pei": 1, "mdd": "ture", "mdn": 1000, "mdc": 0, "mdi": 2 } }</pre> |
|--|---|

6.2.12 Resource Type *timeSeriesInstance*

6.2.12.0 Introduction

The <timeSeriesInstance> resource represents a data instance in the <timeSeries> resource.

6.2.12.1 API-TSI-CRE

| | |
|---|--|
| API Id | API/TSI/CRE/001 API/TSI/CRE/001_RCN0 API/TSI/CRE/001_RCN1 API/TSI/CRE/001_RCN2 API/TSI/CRE/001_RCN3 |
| API Name | <timeSeriesInstance> resource CREATE with resultContent parameter |
| Target Resource | <timeSeries> resource of the requested <timeSeriesInstance> resource |
| Description | The interface is used to send a <timeSeriesInstance> CREATE request attached with resultContent to the Registrar CSE, and the Registrar CSE creates a <timeSeriesInstance> resource and sends back a response. |
| Resource Structure before Sending Request | <pre> graph TD A[mn-name (CSEBase)] --- B[temp_sensor (AE)] B --- C[timeSeries_cont (timeSereis)] </pre> |

| Call Flow | <pre> sequenceDiagram participant originator participant mnName originator->>mnName: timeSeriesInstance create request mnName-->>originator: Response </pre> | | | | | | | | | | |
|------------------------------|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------------|-----------|---------------------------|
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>Content-Type</td><td>application/json;ty=30</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json;ty=30 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json;ty=30 | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/TSI/CRE/001_RCN0</p> <p>HTTP Request:</p> <pre> POST /mn-name/ae_sensor/timeSeries_cont?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=30 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:tsi": { "dgt": "20180307T123456", "con": "DATA_TACK" } } </pre> <p>HTTP Response:</p> <pre> 201 Created Content-Location: mn-name/ae_sensor/timeSeries_cont/tsi_value1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 </pre> | | | | | | | | | | |
| Example with no RCN or RCN=1 | <p>API/TSI/CRE/001 API/TSI/CRE/001_RCN1</p> <p>HTTP Request:</p> <pre> POST /mn-name/ae_sensor/timeSeries_cont HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=30 X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

```
{
  "m2m:tsi": {
    "rn": "tsi_value1",
    "dgt": "20180307T123456",
    "con": "DATA_TACK"
  }
}
```

HTTP Response:

201 Created
Content-Location: mn-name/ae_sensor/timeSeries_cont
Content-Type: application/json
X-M2M-Origin: CAE5630283216026458665
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2001

```
{
  "m2m:tsi": {
    "rn": "tsi_value1",
    "ty": 30,
    "pi": "CAE5630283216026458665",
    "ri": "TSI840674869203617594",
    "ct": "20180307T012211",
    "lt": "20180307T012211",
    "et": "20210307T012211",
    "dgt": "20180307T123456",
    "con": "DATA_TACK",
    "cs": 9,
    "st": 7
  }
}
```

API/TSI/CRE/001_RCN2**Example with RCN=2****HTTP Request:**

POST /mn-name/ae_sensor/timeSeries_cont?rcn=2 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: CAE5630283216026458665
Content-Type: application/json;ty=30
X-M2M-RI: 1234
X-M2M-RVI: 2a

```
{
  "m2m:tsi": {
    "rn": "tsi_value1",
    "dgt": "20180307T123456",
    "con": "DATA_TACK"
  }
}
```

HTTP Response:

201 Created
Content-Location: mn-name/ae_sensor/timeSeries_cont/tsi_value1
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a

| | |
|--------------------|---|
| | <p>X-M2M-RSC: 2001</p> <pre>{ "m2m:uri": "mn-name/ae_sensor/timeSeries_cont/tsi_value1" }</pre> |
| Example with RCN=3 | <p>API/TSI/CRE/001_RCN3</p> <p>HTTP Request:</p> <pre>POST /mn-name/ae_sensor/timeSeries_cont?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=30 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:tsi": { "rn": "tsi_value1", "dgt": "20180307T123456", "con": "DATA_TACK" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/ae_sensor/timeSeries_cont/tsi_value1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:rce": { "m2m:tsi": { "rn": "tsi_value1", "ty": 30, "pi": "CAE5630283216026458665", "ri": "TSI840674869203617594", "ct": "20180307T012211", "lt": "20180307T012211", "et": "2n0210307T012211", "dgt": "20180307T123456", "con": "DATA_TACK", "cs": 9, "st": 7 } }, "m2m:uri": "mn-name/ae_sensor/timeSeries_cont/tsi_value1" }</pre> |

6.2.12.2 API-TSI-RET

| API Id | API/TSI/RET/001 API/TSI/RET/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <timeSeriesInstance> resource RETRIEVE with resultContent parameter | | | | | | | | | | |
| Target Resource | Requested <timeSeriesInstance> resource | | | | | | | | | | |
| Description | The interface is used to send a <timeSeriesInstance> RETRIEVE request attached with resultContent set to 1 to the Registrar CSE and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_sensor (AE)] ae --- ts[timeSeries_cont (timeSeries)] ts --- tsi1[tsi_value1 (timeSeries_instance)] ts --- tsi2[tsi_value2 (timeSeries_instance)] </pre> <p>Detailed description: This diagram shows the hierarchical structure of resources before sending a request. At the top is 'mn-name (CSEBase)'. Below it is 'ae_sensor (AE)'. Under 'ae_sensor' is 'timeSeries_cont (timeSeries)'. Finally, under 'timeSeries_cont' are two items: 'tsi_value1 (timeSeries_instance)' and 'tsi_value2 (timeSeries_instance)'.</p> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant originator participant mn originator->>mn: timeSeriesInstance retrieve request mn-->>originator: Response </pre> <p>Detailed description: This sequence diagram illustrates the call flow. It starts with the 'originator' sending a 'timeSeriesInstance retrieve request' to the 'mn-name' resource. The 'mn-name' resource then returns a 'Response' to the 'originator'.</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with no RCN or RCN=1 | <p>API/TSI/RET/001 API/TSI/RET/001_RCN1</p> <p>HTTP Request:</p> <pre> GET /mn-name/ae_sensor/timeSeries_cont/tsi_value1?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/ae_sensor/timeSeries_cont/tsi_value1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|--|---|
| | <p>X-M2M-RSC: 2000</p> <pre>{ "m2m:tsi": { "rn": "tsi_value1", "ty": 30, "pi": "CAE5630283216026458665", "ri": "TSI840674869203617594", "ct": "20180307T012211", "lt": "20180307T012211", "et": "2n0210307T012211", "dgt": "20180307T123456" "con": "DATA_TACK", "cs": 9, "st": 7 } }</pre> |
|--|---|

6.2.12.3 API-TSI-UPD

| | |
|------------------------|--|
| API Id | API/TSI/UPD |
| API Name | <timeSeriesInstance> resource UPDATE |
| Target Resource | Requested <timeSeriesInstance> resource |
| Description | Update operation is not allowed in <timeSeriesInstance> resource |

6.2.12.4 API-TSI-DEL

| | |
|--|--|
| API Id | API/TSI/DEL/001 API/TSI/DEL/001_RCN0 API/TSI/DEL/001_RCN1 |
| API Name | <timeSeriesInstance> resource DELETE with resultContent parameter |
| Target Resource | Requested <timeSeriesInstance> resource |
| Description | The interface is used to send a <timeSeriesInstance> DELETE request attached with resultContent to the Registrar CSE, and the Registrar CSE creates a <timeSeriesInstance> resource and sends back a response. |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_sensor (AE)] ae --- ts[timeSeries_cont (timeSeries)] ts --- tsi1[tsi_value1 (timeSeries_instance)] ts --- tsi2[tsi_value2 (timeSeries_instance)] </pre> <p>The diagram illustrates the resource structure before sending a request. It shows a hierarchical tree starting from the 'mn-name (CSEBase)' at the top, which branches down to 'ae_sensor (AE)', then to 'timeSeries_cont (timeSeries)', and finally to two leaf nodes: 'tsi_value1 (timeSeries_instance)' and 'tsi_value2 (timeSeries_instance)'.</p> |

| Call Flow | <pre> sequenceDiagram participant originator participant mnName originator->>mnName: timeSeriesInstance delete request mnName-->>originator: Response </pre> | | | | | | | | | | |
|------------------------------|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with no RCN or RCN=0 | <p>API/TSI/DEL/001 API/TSI/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre> DELETE /mn-name/ae_sensor/timeSeries_cont/tsi_value1?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/ae_sensor/timeSeries_cont/tsi_value1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002 </pre> | | | | | | | | | | |
| Example with RCN=1 | <p>API/TSI/DEL/001_RCN1</p> <p>HTTP Request:</p> <pre> DELETE /mn-name/ae_sensor/timeSeries_cont/tsi_value1?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/ae_sensor/timeSeries_cont/tsi_value1 Content-Type: application/json X-M2M-Origin: CAE5630283216026458665 X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|--|---|
| | <p>X-M2M-RSC: 2002</p> <pre>{ "m2m:tsi": { "rn": "tsi_value1", "ty": 30, "pi": "CAE5630283216026458665", "ri": "TSI840674869203617594", "ct": "20180307T012211", "lt": "20180307T012211", "et": "2n0210307T012211", "dgt": "20180307T123456" "con": "DATA_TACK", "cs": 9, "st": 7 } }</pre> |
|--|---|

6.2.13 Resource Type *accessControlPolicy*

6.2.13.0 Introduction

The <accessControlPolicy> resource is defined to contain a set of access control rules defining for which entities have which privilege to perform operations such as CREATE, RETRIEVE, UPDATE and DELETE. The allowed operations are defined by an attribute accessControlOperations that associated with each <accessControlPolicy> resource.

6.2.13.1 API-ACP-CRE

| | |
|--|---|
| API Id | API/ACP/CRE/001 API/ACP/CRE/001_RCN0 API/ACP/CRE/001_RCN1 API/ACP/CRE/001_RCN2 API/ACP/CRE/001_RCN3 |
| API Name | <accessControlPolicy> resource CREATE with resultContent parameter |
| Target Resource | <CSEBase> of the requested <accessControlPolicy> resource |
| Description | The interface is used to send a <accessControlPolicy> CREATE request attached with resultContent to the Registrar CSE, and the Registrar CSE creates a <accessControlPolicy> resource, and sends back a response. |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_sensor (AE)] </pre> |
| Call Flow | <pre> graph LR originator((originator)) -- "accessControlPolicy create request" --> mn[mn-name] mn -- Response --> originator </pre> |

| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr> <tr> <td>Content-Type</td><td>application/json;ty=1</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json;ty=1 | X-M2M-RVI | Release Version Indicator |
|-------------------------------------|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|--------------|-----------------------|-----------|---------------------------|
| Header | Value | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | | | |
| Content-Type | application/json;ty=1 | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | |
| Example with RCN=0 | <p>API/ACP/CRE/001_RCN0</p> <p>HTTP Request:</p> <pre>POST /mn-name?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=1 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <pre>{ "m2m:acp" : { "rn": "accessControlPolicy", "et" : "20201221T064952", "pv" : { "acr" : [{ "acco" : [], "acop" : 63, "acor" : ["CAE1", "CAE2"] }] }, "pvs" : { "acr" : [{ "acco" : [], "acop" : 63, "acor" : ["all"] }] } } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/accessControlPolicy Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</pre> | | | | | | | | | | | | |
| Example with no RCN or RCN=1 | <p>API/ACP/CRE/001 API/ACP/CRE/001_RCN1</p> <p>HTTP Request:</p> | | | | | | | | | | | | |

```
POST /mn-name?rcn=1 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: CAE5630283216026458665
Content-Type: application/json;ty=1
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a

{
  "m2m:acp": {
    "rn": "accessControlPolicy",
    "et": "20201221T064952",
    "pv": {
      "acr": [
        {
          "acco": [],
          "acop": 63,
          "acor": [ "CAE1", "CAE2" ]
        }
      ],
      "pvs": {
        "acr": [
          {
            "acco": [],
            "acop": 63,
            "acor": [ "all" ]
          }
        ]
      }
    }
  }
}
```

HTTP Response:

201 Created
Content-Location: mn-name/accessControlPolicy
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2001

```
{
  "m2m:acp": {
    "rn": "accessControlPolicy",
    "ty": 1,
    "ri": "ACP503720698362418574",
    "pi": "mnID",
    "ct": "20180308T115922",
    "lt": "20180308T115922",
    "et": "20201221T064952",
    "pv": {
      "acr": [
        {
          "acco": [],
          "acop": 63,
          "acor": [
            "CAE1",
            "CAE2"
          ]
        }
      ],
      "pvs": {
        "acr": [
          {
            "acco": []
          }
        ]
      }
    }
  }
}
```

| | |
|---------------------------|---|
| | <pre> "acco": [], "acop": 63, "acor": ["all"] } } } } </pre> |
| Example with RCN=2 | <h3>API/ACP/CRE/001_RCN2</h3> <p>HTTP Request:</p> <pre> POST /mn-name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=1 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <pre> { "m2m:acp" : { "rn": "accessControlPolicy", "et" : "20201221T064952", "pv" : { "acr" : [{ "acco" : [], "acop" : 63, "acor" : ["CAE1", "CAE2"] }], "pvs" : { "acr" : [{ "acco" : [], "acop" : 63, "acor" : ["all"] }] } } } } </pre> <p>HTTP Response:</p> <pre> 201 Created Content-Location: mn-name/accessControlPolicy Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 </pre> <pre> { "m2m:uri": "mn-name/accessControlPolicy" } </pre> |
| | |

| | |
|---------------------------|--|
| Example with RCN=3 | <h3>API/ACP/CRE/001_RCN3</h3> <p>HTTP Request:</p> <pre>POST /mn-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=1 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:acp" : { "rn": "accessControlPolicy", "et" : "20201221T064952", "pv" : { "acr" : [{ "acco" : [], "acop" : 63, "acor" : ["CAE1", "CAE2"] }] }, "pvs" : { "acr" : [{ "acco" : [], "acop" : 63, "acor" : ["all"] }] } } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/accessControlPolicy Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:rce": { "m2m:acp": { "rn": "accessControlPolicy", "ty": 1, "ri": "ACP503720698362418574", "pi": "mnID", "ct": "20180308T115922", "lt": "20180308T115922", "et": "20201221T064952", "pv": { "acr": [{ "acco": [], "acop": 63, "acor": ["CAE1", "CAE2"] }] } } } }</pre> |
|---------------------------|--|

| | |
|--|---|
| | <pre>], "pvs": { "acr": [{ "acco": [], "acop": 63, "acor": ["all"] }] }, "m2m:uri": "mn-name/accessControlPolicy" } } } } </pre> |
|--|---|

6.2.12.2 API-ACP-RET

| API Id | API/ACP/RET/001 API/ACP/RET/001_RCN1 | | | | | | | | | | |
|--|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <accessControlPolicy> resource RETRIEVE with resultContent parameter | | | | | | | | | | |
| Target Resource | <CSEBase> of the requested <accessControlPolicy> resource | | | | | | | | | | |
| Description | The interface is used to send a <accessControlPolicy> RETRIEVE request attached with resultContent set to 1 to the Registrar CSE and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn_name["mn-name (CSEBase)"] ae_sensor["ae_sensor (AE)"] accessControlPolicy["accessControlPolicy"] mn_name --- ae_sensor mn_name --- accessControlPolicy </pre> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator[originator] -- "accessControlPolicy retrieve request" --> mn_name[mn-name] mn_name -- Response --> originator </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |

| | |
|--|---|
| <p>Example with no RCN or RCN=1</p> | <p>API/ACP/RET/001 API/ACP/RET/001_RCN1</p> <p>HTTP Request:</p> <pre>GET /mn-name/accessControlPolicy?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/accessControlPolicy Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000 { "m2m:acp": { "rn": "accessControlPolicy", "ty": 1, "ri": "ACP503720698362418574", "pi": "mnID", "ct": "20180308T115922", "lt": "20180308T115922", "et": "20201221T064952", "pv": { "acr": [{ "acco": [], "acop": 63, "acor": ["CAE1", "CAE2"] }], "pvs": { "acr": [{ "acco": [], "acop": 63, "acor": ["all"] }] } } } }</pre> |
|--|---|

6.2.12.3 API-ACP-UPD

| API Id | API/ACP/UPD/001 API/ACP/UPD/001_RCN0 API/ACP/UPD/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------|-----------|---------------------------|
| API Name | <accessControlPolicy> resource UPDATE with resultContent parameter | | | | | | | | | | |
| Target Resource | <accessControlPolicy> resource | | | | | | | | | | |
| Description | The interface is used to send a <accessControlPolicy> UPDATE request attached with resultContent to the Registrar CSE, and the Registrar CSE creates a <accessControlPolicy> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_sensor (AE)] ae --- acp[accessControlPolicy] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSEBase)". A line descends from it to a box labeled "ae_sensor (AE)". From "ae_sensor (AE)", a line descends to a box labeled "accessControlPolicy".</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator[originator] -- "accessControlPolicy update request" --> mn[mn-name] mn -- Response --> originator </pre> <p>The diagram illustrates the call flow. On the left is a blue rounded rectangle labeled "originator". On the right is a blue rounded rectangle labeled "mn-name". A horizontal arrow points from "originator" to "mn-name", labeled "accessControlPolicy update request". Another horizontal arrow points from "mn-name" back to "originator", labeled "Response".</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/ACP/UPD/001_RCN0</p> <p>HTTP Request:</p> <pre> PUT /mn-name/accessControlPolicy?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

```
{
  "m2m:acp" : {
    "pv" : {
      "acr" : [
        {
          "acor" : [ "CAE_A", "CAE_B" ]
        }
      ]
    },
    "pvs" : {
      "acr" : [
        {
          "acor" : [ "CAE_C", "CAE_D" ]
        }
      ]
    }
  }
}
```

HTTP Response:

200 OK
Content-Location: mn-name/accessControlPolicy
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2004

**API/ACP/UPD/001
API/ACP/UPD/001_RCN1****HTTP Request:**

PUT /mn-name/accessControlPolicy?rcn=1 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: CAE5630283216026458665
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a

```
{
  "m2m:acp" : {
    "pv" : {
      "acr" : [
        {
          "acor" : [ "CAE_A", "CAE_B" ]
        }
      ]
    },
    "pvs" : {
      "acr" : [
        {
          "acor" : [ "CAE_C", "CAE_D" ]
        }
      ]
    }
  }
}
```

HTTP Response:

200 OK

Content-Location: mn-name/accessControlPolicy
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2004

```
{  
    "m2m:acp": {  
        "rn": "accessControlPolicy",  
        "ty": 1,  
        "ri": "ACP503720698362418574",  
        "pi": "mnID",  
        "ct": "20180308T115922",  
        "lt": "20180308T115922",  
        "et": "20201221T064952",  
        "pv": {  
            "acr": [  
                {  
                    "acco": [],  
                    "acop": 63,  
                    "acor": [  
                        "CAE_A",  
                        "CAE_B"  
                    ]  
                }  
            ],  
            "pvs": {  
                "acr": [  
                    {  
                        "acco": [],  
                        "acop": 63,  
                        "acor": [  
                            "CAE_C",  
                            "CAE_D"  
                        ]  
                    }  
                ]  
            }  
        }  
    }  
}
```

6.2.12.4 API-ACP-DEL

| API Id | API/ACP/DEL/001 API/ACP/DEL/001_RCN0 API/ACP/DEL/001_RCN1 | | | | | | | | | | |
|--|--|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <accessControlPolicy> resource DELETE with resultContent parameter | | | | | | | | | | |
| Target Resource | <accessControlPolicy> resource | | | | | | | | | | |
| Description | The interface is used to send a <accessControlPolicy> DELETE request attached with resultContent to the Registrar CSE, and the Registrar CSE creates a <accessControlPolicy> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- ae[ae_sensor (AE)] ae --- acp[accessControlPolicy] </pre> <p>The diagram shows a hierarchical resource structure. At the top is a box labeled "mn-name (CSEBase)". A line connects it to a box labeled "ae_sensor (AE)". Another line connects "ae_sensor (AE)" to a box labeled "accessControlPolicy".</p> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant originator participant mn originator->>mn: accessControlPolicy delete request mn-->>originator: Response </pre> <p>The call flow diagram illustrates the interaction between an "originator" and a "mn-name". An arrow points from the originator to the mn-name, labeled "accessControlPolicy delete request". A return arrow points from the mn-name back to the originator, labeled "Response".</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with no RCN or RCN=0 | <p>API/ACP/DEL/001 API/ACP/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre> DELETE /mn-name/accessControlPolicy?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/accessControlPolicy Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002 </pre> | | | | | | | | | | |

| | |
|----------------------------------|--|
| <p>Example with RCN=1</p> | <h3><u>API/ACP/DEL/001_RCN1</u></h3> <p>HTTP Request:</p> <pre>DELETE /mn-name/accessControlPolicy?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/accessControlPolicy Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002</pre> <pre>{ "m2m:acp": { "rn": "accessControlPolicy", "ty": 1, "ri": "ACP503720698362418574", "pi": "mnID", "ct": "20180308T115922", "lt": "20180308T115922", "et": "20201221T064952", "pv": { "acr": [{ "acco": [], "acop": 63, "acor": ["CAE_A", "CAE_B"] }], "pvs": { "acr": [{ "acco": [], "acop": 63, "acor": ["CAE_C", "CAE_D"] }] } } } }</pre> |
|----------------------------------|--|

6.2.14 Resource Type *flexContainer*

6.2.14.0 Introduction

The <flexContainer> resource type is a customizable container for data instances. While <contentInstance> save the data in content attribute, <flexContainer> resource type directly contains the data in the attribute. Since it can have any attribute name, it may be a solution for saving custom data which is defined by the developer or manufacturer.

The CRUD examples in this clause are written based on the parking lot implementation. As custom attributes, availableSpotNumber, totalSpotNumber are made to save data for the parking lot.

6.2.14.1 API-FLX-CRE

| API Id | API/FLX/CRE/001 API/FLX/CRE/001_RCN0 API/FLX/CRE/001_RCN1 API/FLX/CRE/001_RCN2 API/FLX/CRE/001_RCN3 | | | | | | | | | | |
|--|--|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------------|-----------|---------------------------|
| API Name | <flexContainer> resource CREATE with resultContent parameter | | | | | | | | | | |
| Target Resource | <CSEBase> of the requested <flexContainer> resource | | | | | | | | | | |
| Description | The interface is used to send a <flexContainer> CREATE request attached with resultContent to the Registrar CSE, and the Registrar CSE creates a <flexContainer> resource, and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; display: inline-block;">mn-name (CSEBase)</div> </div> | | | | | | | | | | |
| Call Flow | <pre> graph TD originator[originator] -- "flexContainer create request" --> mnName["mn-name"] mnName -- "Response" --> originator </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json;ty=28</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json;ty=28 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json;ty=28 | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/FLX/CRE/001_RCN0</p> <p>HTTP Request:</p> <pre> POST /mn-name?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=28 X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|------------------------------|--|
| | <pre>{ "m2m:sc_offLot": { "rn": "yt_lot_1", "lbl": ["sc"], "cnd": "http://developers.iotocean.org/schema/offStreetParking.xsd", "type": "OffStreetParking", "category": "lot_1", "geolocation": [37.4114423, 127.1293735], "name": "parkingLot_1", "availableSpotNumber": "3", "totalSpotNumber": "110" } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Location: mn-name/yt_lot_1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</p> |
| Example with no RCN or RCN=1 | <p>API/FLX/CRE/001 API/FLX/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /mn-name?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=28 X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre>{ "m2m:sc_offLot": { "rn": "yt_lot_1", "lbl": ["sc"], "cnd": "http://developers.iotocean.org/schema/offStreetParking.xsd", "type": "OffStreetParking", "category": "lot_1", "geolocation": [37.4114423, 127.1293735], "name": "parkingLot_1", "availableSpotNumber": "3", "totalSpotNumber": "110" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> |

| | |
|--------------------|---|
| | <p>Content-Location: mn-name/yt_lot_1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</p> <pre>{ "m2m:sc_offLot": { "pi": "CAE5630283216026458665", "ri": "FLX37696264720673421", "ty": 28, "ct": "20181019T045127", "st": 15878, "rn": "yt_lot_1", "lt": "20181207T002422", "et": "20211019T045127", "lbl": ["sc"], "cnd": "http://developers.iotocean.org/schema/offStreetParking.xsd", "type": "OffStreetParking", "category": "lot_1", "geolocation": [37.4114423, 127.1293735], "name": "parkingLot_1", "availableSpotNumber": "3", "totalSpotNumber": "110" } }</pre> |
| Example with RCN=2 | <h3>API/FLX/CRE/001_RCN2</h3> <p>HTTP Request:</p> <pre>POST /mn-name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=28 X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <pre>{ "m2m:sc_offLot": { "rn": "yt_lot_1", "lbl": ["sc"], "cnd": "http://developers.iotocean.org/schema/offStreetParking.xsd", "type": "OffStreetParking", "category": "lot_1", "geolocation": [37.4114423, 127.1293735], "name": "parkingLot_1", "availableSpotNumber": "3", "totalSpotNumber": "110" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> |

| | |
|--------------------|---|
| | Content-Location: mn-name/yt_lot_1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:uri": "mn-name/yt_lot_1" } |
| Example with RCN=3 | <p>API/FLX/CRE/001_RCN3</p> <p>HTTP Request:</p> <pre>POST /mn-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=28 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sc_offLot": { "rn": "yt_lot_1", "lb": ["sc"], "cnd": "http://developers.iotocean.org/schema/offStreetParking.xsd", "type": "OffStreetParking", "category": "lot_1", "geolocation": [37.4114423, 127.1293735], "name": "parkingLot_1", "availableSpotNumber": "3", "totalSpotNumber": "110" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/yt_lot_1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> |

X-M2M-RSC: 2001

```
{  
    "m2m:rce":{  
        "m2m:sc_offLot":{  
            "pi":"CAE5630283216026458665",  
            "ri":"FLX37696264720673421",  
            "ty":28,  
            "ct":"20181019T045127",  
            "st":15878,  
            "rn":"yt_lot_1",  
            "lt":"20181207T002422",  
            "et":"20211019T045127",  
            "lbl":[  
                "sc"  
            ],  
            "cnd":"http://developers.itocean.org/schema/offStreetParking.xsd",  
            "type":"OffStreetParking",  
            "category":"lot_1",  
            "geolocation": [  
                37.4114423,  
                127.1293735  
            ],  
            "name":"parkingLot_1",  
            "availableSpotNumber":"3",  
            "totalSpotNumber":"110"  
        }  
    },  
    "m2m:uri":"mn-name/yt_lot_1"  
}
```

6.2.14.2 API-FLX-RET

| API Id | API/FLX/RET/001 API/FLX/RET/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <flexContainer> resource RETRIEVE with resultContent parameter | | | | | | | | | | |
| Target Resource | <CSEBase> of the requested <flexContainer> resource | | | | | | | | | | |
| Description | The interface is used to send a <flexContainer> RETRIEVE request attached with resultContent set to 1 to the Registrar CSE and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn["mn-name (CSEBase)"] yt["yt_lot_1 (flexContainer)"] mn --- yt </pre> <p>The diagram shows a hierarchical structure. At the top is a box labeled "mn-name (CSEBase)". A line connects it to a lower box labeled "yt_lot_1 (flexContainer)".</p> | | | | | | | | | | |
| Call Flow | <pre> graph LR originator[originator] -- "flexContainer retrieve request" --> mn_name["mn-name"] mn_name -- Response --> originator </pre> <p>The diagram illustrates a call flow between an "originator" and a "mn-name". An arrow points from the originator to the mn-name with the label "flexContainer retrieve request". An arrow points back from the mn-name to the originator with the label "Response".</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with no RCN or RCN=1 | <p>API/FLX/RET/001 API/FLX/RET/001_RCN1</p> <p>HTTP Request:</p> <pre> GET /mn-name/yt_lot_1?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/yt_lot_1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|--|--|
| | <pre>X-M2M-RSC: 2000 { "m2m:sc_offLot": { "pi": "CAE5630283216026458665", "ri": "FLX37696264720673421", "ty": 28, "ct": "20181019T045127", "st": 15878, "rn": "yt_lot_1", "lt": "20181207T002422", "et": "20211019T045127", "lbl": ["sc"], "cnd": "http://developers.iotocean.org/schema/offStreetParking.xsd", "type": "OffStreetParking", "category": "lot_1", "geolocation": [37.4114423, 127.1293735], "name": "parkingLot_1", "availableSpotNumber": "3", "totalSpotNumber": "110" } }</pre> |
|--|--|

6.2.14.3 API-FLX-UPD

| API Id | API/FLX/UPD/001 API/FLX/UPD/001_RCN0 API/FLX/UPD/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|----------|------------|--------------|-----------------------------|--------------|------------------|-----------|---------------------------|
| API Name | <flexContainer> resource UPDATE with resultContent parameter | | | | | | | | | | |
| Target Resource | <flexContainer> resource | | | | | | | | | | |
| Description | The interface is used to send a <flexContainer> UPDATE request attached with resultContent to the Registrar CSE, and the Registrar CSE updates a <flexContainer> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- yt[yt_lot_1 (flexContainer)] </pre> <p>The diagram shows a hierarchical structure. At the top is a box labeled "mn-name (CSEBase)". A line connects it to a lower box labeled "yt_lot_1 (flexContainer)".</p> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant originator participant mn originator->>mn: flexContainer update request mn-->>originator: Response </pre> <p>The call flow diagram illustrates the interaction between an "originator" and a "mn-name". An arrow points from the originator to the mn-name, labeled "flexContainer update request". An arrow returns from the mn-name to the originator, labeled "Response".</p> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with RCN=0 | <p>API/FLX/UPD/001_RCN0</p> <p>HTTP Request:</p> <pre> PUT /mn-name/yt_lot_1?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sc_offLot" : { "availableSpotNumber": "40", } } </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/yt_lot_1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | |
|------------------------------|--|
| | X-M2M-RSC: 2004 |
| Example with no RCN or RCN=1 | <p>API/FLX/UPD/001 API/FLX/UPD/001_RCN1</p> <p>HTTP Request:</p> <pre>PUT /mn-name/yt_lot_1?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sc_offLot" : { "availableSpotNumber": "40", } }</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/yt_lot_1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004 { "m2m:sc_offLot": { "pi": "CAE5630283216026458665", "ri": "FLX37696264720673421", "ty": 28, "ct": "20181019T045127", "st": 15878, "rn": "yt_lot_1", "lt": "20181207T052435", "et": "20211019T045127", "lbl": ["sc"], "cnd": "http://developers.iotocean.org/schema/offStreetParking.xsd", "type": "OffStreetParking", "category": "lot_1", "geolocation": [37.4114423, 127.1293735], "name": "parkingLot_1", "availableSpotNumber": "40", "totalSpotNumber": "110" } }</pre> |

6.2.14.4 API-FLX-DEL

| API Id | API/FLX/DEL/001 API/FLX/DEL/001_RCN0 API/FLX/DEL/001_RCN1 | | | | | | | | | | |
|--|---|--------|-------|--------|------------------|----------|------------|--------------|-----------------------------|-----------|---------------------------|
| API Name | <flexContainer> resource DELETE with resultContent parameter | | | | | | | | | | |
| Target Resource | <flexContainer> resource | | | | | | | | | | |
| Description | The interface is used to send a <flexContainer> DELETE request attached with resultContent to the Registrar CSE, and the Registrar CSE deletes a <flexContainer> resource and sends back a response. | | | | | | | | | | |
| Resource Structure before Sending Request | <pre> graph TD mn["mn-name (CSEBase)"] --- yt["yt_lot_1 (flexContainer)"] </pre> | | | | | | | | | | |
| Call Flow | <pre> sequenceDiagram participant originator participant mn originator->>mn: flexContainer delete request mn-->>originator: Response </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of request originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of request originator | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |
| Example with no RCN or RCN=0 | <p>API/FLX/DEL/001 API/FLX/DEL/001_RCN0</p> <p>HTTP Request:</p> <pre> DELETE /mn-name/yt_lot_1?rcn=0 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Location: mn-name/yt_lot_1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002 </pre> | | | | | | | | | | |

| | <h2>API/FLX/DEL/001_RCN1</h2> <p>HTTP Request:</p> <p>Example with RCN=1</p> <pre>DELETE /mn-name/yt_lot_1?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <p>HTTP Response:</p> <pre>200 OK Content-Location: mn-name/yt_lot_1 Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2002</pre> <pre>{ "m2m:sc_offLot": { "pi": "CAE5630283216026458665", "ri": "FLX37696264720673421", "ty": 28, "ct": "20181019T045127", "st": 15878, "rn": "yt_lot_1", "lt": "20181207T052435", "et": "20211019T045127", "lbl": ["sc"], "cnd": "http://developers.iotocean.org/schema/offStreetParking.xsd", "type": "OffStreetParking", "category": "lot_1", "geolocation": [37.4114423, 127.1293735], "name": "parkingLot_1", "availableSpotNumber": "40", "totalSpotNumber": "110" } }</pre> |
|--|--|
|--|--|

Annex A:

Example of notification

A.1 Notification API

A.1.0 Introduction

The notify operation is used for notify any event. AE or CSE which has privilege to make a <subscription> resource as a child resource of the subscribed-to resource. The <subscription> resource includes notification policies that specify which, when, and how notifications are sent.

In this clause, notification examples are provided for the understanding of notification procedure. Especially, examples have different notificationEvent Type in the eventNotificationCriteria. The notificationEvent Type value is specified in table A.1.0-1 and set when notification is sent.

Table A.1.0-1: Interpretation of notificationEvent Type

| Value | Interpretation | Note |
|-------|---------------------------------|---------|
| 1 | Update_of_Resource | Default |
| 2 | Delete_of_Resource | |
| 3 | Create_of_Direct_Child_Resource | |
| 4 | Delete_of_Direct_Child_Resource | |

A.1.1 API-NOTI-NET1

| | |
|-----------------|--|
| API Id | API/NOTI/NET1/STEP01 API/NOTI/NET1/STEP02 API/NOTI/NET1/STEP03 |
| API Name | Notification procedure when the <subscription> resource has notificationEvent Type set to 1(Hosting CSE sends notification when the subscribed-to resource has been updated) |
| Target Resource | Update Target: Requested <container> resource Notification Target: originator |
| Description | <p>Figure below depicts the procedure for notification.</p> <pre> sequenceDiagram participant originator as originator (AE1) participant mnnam as mn-nam participant ae2 as AE2 originator->>mnnam: subscription create request to the container activate mnnam mnnam-->>originator: Response deactivate mnnam mnnam->>ae2: container resource update request activate ae2 ae2-->>mnnam: Response deactivate ae2 mnnam->>originator: Notification send originator-->>mnnam: ACK </pre> <p>Initial condition: MN(Hosting CSE) has a <container> resource. The originator is AE1 in this clause, but can be CSE.</p> |

| | <p>Step 01: The originator sends a <subscription> resource CREATE request to the <container> resource on the Registrar CSE. In the request, notificationEventType set to 1 and notificationURI attribute set to originator. The Registrar CSE creates a <subscription> resource and sends back a response.</p> <p>Step 02: An AE2 sends an UPDATE request to the <container> resource. The Registrar CSE updates a <container> resource and sends back a response.</p> <p>Step 03: The Hosting CSE sends notification as soon as update succeed. The originator sends back an ACK message.</p> | | | | | | | | | | | | |
|---|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|--------------|------------------------|-----------|---------------------------|
| Step 01 | <p>Resource Structure before Sending Request</p> <pre> graph TD mn_name["mn-name (CSEBase)"] --- cont_temp["cont_temp (container)"] </pre> <p>Call Flow</p> <pre> graph LR originator[originator (AE1)] -- "subscription create request" --> mn_name[mn-name] mn_name -- Response --> originator </pre> <p>HTTP Header Information</p> <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json;ty=23</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json;ty=23 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | | |
| Content-Type | application/json;ty=23 | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | |
| <p>Example</p> <p>API/NOTI/NET1/STEP01</p> <p>HTTP Request:</p> <pre> POST /mn-name/cont_temp? HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=23 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | | | | |

| | | <pre>{ "m2m:sub": { "enc": { "net": [1] }, "nu": ["AE1"], "rn": "cont_sub" } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Location: mn-name/cont_temp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</p> | | | | | | | | | | | | |
|--------------|---|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|--------------|------------------|-----------|---------------------------|
| | Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- cont[cont_temp (container)] cont --- sub[cont_sub (subscription)] </pre> | | | | | | | | | | | | |
| | Call Flow | <pre> graph LR mn[mn-name] --> AE[AE2] mn -- "container update request" --> AE AE -- "Response" --> mn </pre> | | | | | | | | | | | | |
| Step 02 | HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of Originator</td></tr> <tr> <td>Content-Type</td><td>application/json</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | | |
| | Example | <p>API/NOTI/NET1/STEP02</p> <p>HTTP Request:</p> <pre>PUT /mn-name/cont_temp? HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T08463114 Content-Type: application/json Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> | | | | | | | | | | | | |

| | |
|---|---|
| | <pre>{ "m2m:cnt": { "mni": "300" } }</pre> <p>HTTP Response:</p> <p>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004</p> <pre>{ "m2m:cnt": { "cbs": 10, "cni": 0, "ct": "20180406T125807", "et": "99991231T235959", "lbl": ["indoor_temp"], "lt": "20180406T130109", "mbs": 60000000, "mia": 1600, "mni": 300, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T1258071405855183193603_cse01", "rn": "cont_temp", "st": 1, "ty": 3 } }</pre> |
| Resource Structure before Sending Request | <pre> graph TD mn_name["mn-name (CSEBase)"] --- cont_temp["cont_temp (container)"] cont_temp --- cont_sub["cont_sub (subscription)"] </pre> |
| Call Flow | <pre> graph LR AE1[AE1] --> mn_name["mn-name"] mn_name --> AE1 AE1 -- "Notification send" --> mn_name mn_name -- "ACK" --> AE1 </pre> |

| | <table border="1"> <thead> <tr> <th style="text-align: center;">HTTP Header Information</th><th style="text-align: center;">Header</th><th style="text-align: center;">Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td><td></td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td><td></td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of Originator</td><td></td></tr> <tr> <td>Content-Type</td><td>application/json</td><td></td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td><td></td></tr> </tbody> </table> | HTTP Header Information | Header | Value | Accept | application/json | | X-M2M-RI | Request ID | | X-M2M-Origin | AE-ID of Originator | | Content-Type | application/json | | X-M2M-RVI | Release Version Indicator | |
|-------------------------|---|-------------------------|--------|-------|--------|------------------|--|----------|------------|--|--------------|---------------------|--|--------------|------------------|--|-----------|---------------------------|--|
| HTTP Header Information | Header | Value | | | | | | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | | | | | | | |
| Step 03 | <p>API/NOTI/NET1/STEP03</p> <p>HTTP Request:</p> <p>POST HTTP/1.1 Accept: application/json Host: 192.168.0.10:8282 X-M2M-Origin: mn-name Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre>{ "m2m:sgn": { "sur": "mn-name/cont_temp/cont_sub", "nev": { "net": 1, "rep": { "m2m:cnt": { "cbs": 10, "cni": 0, "ct": "20180406T125807", "et": "99991231T235959", "lbl": ["indoor_temp"], "lt": "20180406T130109", "mbs": 60000000, "mia": 1600, "mni": 300, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T1258071405855183193603_cse01", "rn": "cont_temp", "st": 1, "ty": 3 } } } } }</pre> <p>HTTP Response:</p> <p>200 OK X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> | | | | | | | | | | | | | | | | | | |

A.1.2 API-NOTI-NET2

| | |
|------------------------|--|
| API Id | API/NOTI/NET2/STEP01 API/NOTI/NET2/STEP02 API/NOTI/NET2/STEP03 |
| API Name | Notification procedure when the <subscription> resource has notificationEventType set to 2(Hosting CSE sends notification when the subscribed to resource has been deleted) |
| Target Resource | Delete Target: Requested <container> resource Notification Target: originator |
| Description | <p>Figure below depicts the procedure for notification.</p> <pre> sequenceDiagram participant originator as originator (AE1) participant mnNam as mn-nam (e) participant ae2 as AE2 originator->>mnNam: subscription create request to the container activate mnNam mnNam-->>originator: Response deactivate mnNam ae2->>mnNam: container resource delete request activate mnNam mnNam-->>ae2: Response deactivate mnNam mnNam->>originator: Notification send activate originator originator-->>mnNam: ACK deactivate originator </pre> <p>Initial condition: MN(Hosting CSE) has a <container> resource. The originator is AE1 in this clause, but can be CSE.</p> <p>Step 01: The originator sends a <subscription> resource CREATE request to the <container> resource on the Registrar CSE. In the request, notificationEventType set to 2 and notificationURI attribute set to originator. The Registrar CSE creates a <subscription> resource and sends back a response.</p> <p>Step 02: An AE2 sends a DELETE request to the <container> resource. The Registrar CSE deletes a <container> resource and sends back a response.</p> <p>Step 03: The Hosting CSE sends notification as soon as delete succeed. The originator sends back an ACK message.</p> |
| | <p>Resource Structure before Sending Request</p> <pre> graph TD mnName["mn-name (CSEBase)"] --- contTemp["cont_temp (container)"] </pre> |
| | <p>Call Flow</p> <pre> sequenceDiagram participant originator as originator (AE1) participant mnName as mn-name originator->>mnName: subscription create request mnName-->>originator: Response </pre> |

| | <table border="1"> <thead> <tr> <th style="background-color: #ADD8E6;">Header</th><th style="background-color: #ADD8E6;">Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of Originator</td></tr> <tr> <td>Content-Type</td><td>application/json;ty=23</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json;ty=23 | X-M2M-RVI | Release Version Indicator |
|----------------|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|--------------|------------------------|-----------|---------------------------|
| Header | Value | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | | |
| Content-Type | application/json;ty=23 | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | |
| Step 01 | <p>API/NOTI/NET2/STEP01</p> <p>HTTP Request:</p> <p>Example</p> <pre>POST /mn-name/cont_temp? HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=23 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sub": { "enc": { "net": [2] }, "nu": ["AE1"], "rn": "cont_sub" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/cont_temp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</pre> | | | | | | | | | | | | |

| | Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- cont[cont_temp (container)] cont --- sub[cont_sub (subscription)] </pre> | | | | | | | | | | |
|--------------|---|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| | Call Flow | <pre> graph LR mn[mn-name] -- "container delete request" --> AE2[AE2] AE2 -- Response --> mn </pre> | | | | | | | | | | |
| Step 02 | HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of Originator</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | |
| | Example | <p>API/NOTI/NET2/STEP02</p> <p>HTTP Request:</p> <pre> DELETE /mn-name/cont_temp? HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T08463114 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | |

| | <p>X-M2M-RSC: 2004</p> <pre>{ "m2m:cnt": { "cbs": 10, "cni": 0, "ct": "20180406T125807", "et": "99991231T235959", "lbl": ["indoor_temp"], "lt": "20180406T130109", "mbs": 60000000, "mia": 1600, "mni": 300, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T1258071405855183193603_cse01", "rn": "cont_temp", "st": 1, "ty": 3 } }</pre> | | | | | | | | | | |
|--------------------------------|--|--------|-------|----------|------------|--------------|---------------------|--------------|------------------|-----------|---------------------------|
| | <p>Resource Structure before Sending Request</p> <div style="text-align: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px; display: inline-block;">mn-name (CSEBase)</div> </div> | | | | | | | | | | |
| | <p>Call Flow</p> <pre> graph TD AE1[AE1] -- "Notification send" --> mnName["mn-name"] mnName -- "ACK" --> AE1 </pre> | | | | | | | | | | |
| HTTP Header Information | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #a6c9ec; color: white; text-align: left;">Header</th> <th style="background-color: #a6c9ec; color: white; text-align: left;">Value</th> </tr> </thead> <tbody> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | |

| | |
|--|--|
| | <h3>API/NOTI/NET2/STEP03</h3> <p>HTTP Request:</p> <p>Example</p> <pre>POST HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: mn-name Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sgn": { "sur": "mn-name/cont_temp/cont_sub", "nev": { "net": 2, "rep": { "m2m:cnt": { "cbs": 10, "cni": 0, "ct": "20180406T125807", "et": "99991231T235959", "lbl": ["indoor_temp"], "lt": "20180406T130109", "mbs": 60000000, "mia": 1600, "mni": 300, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T1258071405855183193603_cse01", "rn": "cont_temp", "st": 1, "ty": 3 } } } } }</pre> <p>HTTP Response:</p> <pre>200 OK X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</pre> |
|--|--|

A.1.3 API-NOTI-NET3

| | |
|------------------------|---|
| API Id | API/NOTI/NET3/STEP01 API/NOTI/NET3/STEP02 API/NOTI/NET3/STEP03 |
| API Name | Notification procedure when the <subscription> resource has notificationEventType set to 3 (Hosting CSE sends notification when the direct child resource has been created) |
| Target Resource | Create <contentInstance> target: Requested <container> resource Notification Target: originator |
| Description | <p>Figure below depicts the procedure for notification.</p> <pre> sequenceDiagram participant originator as originator (AE1) participant mnNam as mn-nam (e) participant ae2 as AE2 originator->>mnNam: subscription create request to the container activate mnNam mnNam-->>originator: Response deactivate mnNam ae2->>mnNam: contentInstance create request activate mnNam mnNam-->>ae2: Response deactivate mnNam mnNam->>originator: Notification send activate originator originator-->>mnNam: ACK deactivate originator </pre> <p>Initial condition: MN(Hosting CSE) has a <container> resource. The originator is AE1 in this clause, but can be CSE.</p> <p>Step 01: The originator sends a <subscription> resource CREATE request to the <container> resource on the Registrar CSE. In the request, notificationEventType set to 3 and notificationURI attribute set to originator. The Registrar CSE creates a <subscription> resource and sends back a response.</p> <p>Step 02: An AE2 sends a CREATE request of the <contentInstance> resource to the <container> resource. The Registrar CSE creates a <contentInstance> resource and sends back a response.</p> <p>Step 03: The Hosting CSE sends notification as soon as create succeed. The originator sends back an ACK message.</p> |
| | <p>Resource Structure before Sending Request</p> <pre> graph TD mnName["mn-name (CSEBase)"] --- contTemp["cont_temp (container)"] </pre> |
| | <p>Call Flow</p> <pre> sequenceDiagram participant originator as originator (AE1) participant mnName as mn-name originator->>mnName: subscription create request mnName-->>originator: Response </pre> |

| | | <table border="1"> <thead> <tr> <th style="background-color: #ADD8E6;">Header</th><th style="background-color: #ADD8E6;">Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of Originator</td></tr> <tr> <td>Content-Type</td><td>application/json;ty=23</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json;ty=23 | X-M2M-RVI | Release Version Indicator |
|--------------|---------------------------|---|--|--------|-------|--------|------------------|----------|------------|--------------|---------------------|--------------|------------------------|-----------|---------------------------|
| Header | Value | | | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | | | | |
| Content-Type | application/json;ty=23 | | | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | | | |
| Step 01 | HTTP Header Information | API/NOTI/NET3/STEP01 | | | | | | | | | | | | | |
| | | Example | | | | | | | | | | | | | |
| | | <p>HTTP Request:</p> <pre>POST /mn-name/cont_temp? HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=23 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sub": { "enc": { "net": [3] }, "nu": ["AE1"], "rn": "cont_sub" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Location: mn-name/cont_temp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</pre> | | | | | | | | | | | | | |

| | Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- cont[cont_temp (container)] cont --- sub[cont_sub (subscription)] </pre> | | | | | | | | | | | | |
|--------------|---|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|--------------|------------------|-----------|---------------------------|
| | Call Flow | <pre> graph LR mn[mn-name] -- "contentInstance create request" --> AE2[AE2] AE2 -- Response --> mn </pre> | | | | | | | | | | | | |
| Step 02 | HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of Originator</td></tr> <tr> <td>Content-Type</td><td>application/json</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | | |
| | Example | <p>API/NOTI/NET3/STEP02</p> <p>HTTP Request:</p> <pre> POST /mn-name/cont_temp? HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T08463114 Content-Type: application/json Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cin": { "con": "20" } } </pre> <p>HTTP Response:</p> <pre> 201 Created Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> | | | | | | | | | | | | |

| | X-M2M-RSC: 2004 <pre>{ "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T135509", "et": "99991231T235959", "lt": "20180406T135509", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1355091405855351047683_cse01", "rn": "cin20180406T1355091405855351047682_cse01", "st": 1, "ty": 4 } }</pre> | | | | | | | | | | | | | |
|--------------|---|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|--------------|------------------|-----------|---------------------------|
| | Resource Structure before Sending Request | <pre> graph TD mn_name["mn-name (CSEBase)"] --- cont_temp["cont_temp (container)"] cont_temp --- ci_temp_value1["ci_temp_value1 (contentInstance)"] cont_temp --- cont_sub["cont_sub (subscription)"] </pre> | | | | | | | | | | | | |
| Step 03 | Call Flow | <pre> graph LR AE1[AE1] --> mn_name["mn-name"] mn_name --> AE1 AE1 -- "Notification send" --> mn_name mn_name -- "ACK" --> AE1 </pre> | | | | | | | | | | | | |
| | HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of Originator</td></tr> <tr> <td>Content-Type</td><td>application/json</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | | |

| | API/NOTI/NET3/STEP03 |
|----------------|--|
| Example | <p>HTTP Request:</p> <p>POST HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: mn-name Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre>{ "m2m:sgn": { "sur": "mn-name/cont_temp/cont_sub", "nev": { "net": 3, "rep": { "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T135509", "et": "99991231T235959", "lt": "20180406T135509", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1355091405855351047683_cse01", "rn": "cin20180406T1355091405855351047682_cse01", "st": 1, "ty": 4 } } } } }</pre> <p>HTTP Response:</p> <p>200 OK X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</p> |

A.1.4 API-NOTI-NET4

| | |
|------------------------|---|
| API Id | API/NOTI/NET4/STEP01 API/NOTI/NET4/STEP02 API/NOTI/NET4/STEP03 |
| API Name | Notification procedure when the <subscription> resource has notificationEventType set to 4(Hosting CSE sends notification when the direct child resource has been deleted) |
| Target Resource | Delete <contentInstance> target: Requested <container> resource Notification Target: originator |
| Description | <p>Figure below depicts the procedure for notification.</p> <pre> sequenceDiagram participant originator as originator (AE1) participant mnNam as mn-nam (e) participant ae2 as AE2 originator->>mnNam: subscription create request to the container activate mnNam mnNam-->>originator: Response deactivate mnNam ae2->>mnNam: contentInstance delete request activate mnNam mnNam-->>ae2: Response deactivate mnNam mnNam->>originator: Notification send activate originator originator-->>mnNam: ACK deactivate originator </pre> <p>Initial condition: MN(Hosting CSE) has a <container> resource. At the same time, <container> resource has <contentInstance> resource as a direct child resource. The originator is AE1 in this clause, but can be CSE.</p> <p>Step 01: The originator sends a <subscription> resource CREATE request to the <container> resource on the Registrar CSE. In the request, notificationEventType set to 4 and notificationURI attribute set to originator. The Registrar CSE creates a <subscription> resource and sends back a response.</p> <p>Step 02: An AE2 sends a DELETE request of the <contentInstance> resource to the <container> resource. The Registrar CSE deletes a <contentInstance> resource and sends back a response.</p> <p>Step 03: The Hosting CSE sends notification as soon as delete succeed. The originator sends back an ACK message.</p> |

| | Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- cont[cont_temp (container)] cont --- ci[ci_temp_value1 (contentInstance)] </pre> | | | | | | | | | | | | |
|--------------|---|--|--------|-------|--------|------------------|----------|------------|--------------|---------------------|--------------|------------------------|-----------|---------------------------|
| | Call Flow | <pre> graph LR AE1((originator AE1)) -- "subscription create request" --> mn[mn-name] mn -- Response --> AE1 </pre> | | | | | | | | | | | | |
| Step 01 | HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of Originator</td></tr> <tr> <td>Content-Type</td><td>application/json;ty=23</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json;ty=23 | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | | | |
| Content-Type | application/json;ty=23 | | | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | | | |
| | Example | <p>API/NOTI/NET4/STEP01</p> <p>HTTP Request:</p> <pre> POST /mn-name/cont_temp? HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json;ty=23 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sub": { "enc": { "net": [4] }, "nu": ["AE1"], "rn": "cont_sub" } } </pre> <p>HTTP Response:</p> <pre> 201 Created Content-Location: mn-name/cont_temp Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 </pre> | | | | | | | | | | | | |

| | Resource Structure before Sending Request | <pre> graph TD mn[mn-name (CSEBase)] --- cont[cont_temp (container)] cont --- ci[ci_temp_value1 (contentInstance)] cont --- sub[cont_sub (subscription)] </pre> | | | | | | | | | | |
|--------------|---|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|-----------|---------------------------|
| Step 02 | Call Flow | <pre> graph LR mn[mn-name] ---> AE2[AE2] mn -- "contentInstance delete request" --> AE2 AE2 -- Response --> mn </pre> | | | | | | | | | | |
| | HTTP Header Information | <table border="1"> <thead> <tr> <th>Header</th><th>Value</th></tr> </thead> <tbody> <tr> <td>Accept</td><td>application/json</td></tr> <tr> <td>X-M2M-RI</td><td>Request ID</td></tr> <tr> <td>X-M2M-Origin</td><td>AE-ID of Originator</td></tr> <tr> <td>X-M2M-RVI</td><td>Release Version Indicator</td></tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | X-M2M-RVI | Release Version Indicator |
| Header | Value | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | |
| | Example | <p>API/NOTI/NET4/STEP02</p> <p>HTTP Request:</p> <pre> DELETE /mn-name/cont_temp/ci_temp_value1? HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE0120180406T08463114 Content-Type: application/json Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a </pre> <p>HTTP Response:</p> <pre> 200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004 </pre> | | | | | | | | | | |

| | <pre>{ "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T135509", "et": "99991231T235959", "lt": "20180406T135509", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1355091405855351047683_cse01", "rn": "cin20180406T1355091405855351047682_cse01", "st": 1, "ty": 4 } }</pre> | | | | | | | | | | | |
|--------------|---|--------|-------|--------|------------------|----------|------------|--------------|---------------------|--------------|------------------|-----------|
| Step 03 | <p>Resource Structure before Sending Request</p> <pre> graph TD mn_name["mn-name (CSEBase)"] --- cont_temp["cont_temp (container)"] cont_temp --- cont_sub["cont_sub (subscription)"] </pre> | | | | | | | | | | | |
| | <p>Call Flow</p> <pre> graph LR AE1[AE1] --> mn_name["mn-name"] mn_name --> AE1 AE1 -- "Notification send" --> mn_name mn_name -- "ACK" --> AE1 </pre> | | | | | | | | | | | |
| | <p>HTTP Header Information</p> <table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of Originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RVI</td> <td>Release Version Indicator</td> </tr> </tbody> </table> | Header | Value | Accept | application/json | X-M2M-RI | Request ID | X-M2M-Origin | AE-ID of Originator | Content-Type | application/json | X-M2M-RVI |
| Header | Value | | | | | | | | | | | |
| Accept | application/json | | | | | | | | | | | |
| X-M2M-RI | Request ID | | | | | | | | | | | |
| X-M2M-Origin | AE-ID of Originator | | | | | | | | | | | |
| Content-Type | application/json | | | | | | | | | | | |
| X-M2M-RVI | Release Version Indicator | | | | | | | | | | | |

| | |
|--|---|
| | <h3>API/NOTI/NET4/STEP03</h3> <p>HTTP Request:</p> <p>Example</p> <pre>POST HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: mn-name Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sgn": { "sur": "mn-name/cont_temp/cont_sub", "nev": { "net":4, "rep": { "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T135509", "et": "99991231T235959", "lt": "20180406T135509", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1355091405855351047683_cse01", "rn": "cin20180406T1355091405855351047682_cse01", "st": 1, "ty": 4 } } } } }</pre> <p>HTTP Response:</p> <pre>200 OK X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</pre> |
|--|---|

Annex B: Bibliography

- ETSI TS 118 109: "oneM2M; HTTP Protocol Binding HTTP Protocol Binding (oneM2M TS-0009)".
- ETSI TS 118 011: "Common Terminology (oneM2M TS-0011)".

History

| Document history | | |
|-------------------------|---------------|-------------|
| V2.0.0 | November 2020 | Publication |
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