

TÀI LIỆU HƯỚNG DẪN SỬ DỤNG

VNPT IoT ONEM2M API

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1 Phạm vi

Tài liệu mô tả cách sử dụng VNPT IoT Platform theo chuẩn oneM2M .

2 Liên quan

2.1 Tài liệu tham khảo quy chuẩn

2.2 Tài liệu tham khảo thông tin

Một số tài liệu liên quan:

1: TS-0001 Functional Architecture

2: TS-0004 Service Layer Core Protocol

3: TS-0009 HTTP Protocol Binding

4: TS-0011 Common Terminology

3 Định nghĩa, ký hiệu và viết tắt

3.1 Định nghĩa

3.2 Ký hiệu

3.3 Viết tắt

2G	Second Generation
3GPP	3rd Generation Partnership Project
3GPP2	3rd Generation Partnership Project 2
A/AAAA	IPv4/IPv6 DNS records that are used to map hostnames to an IP address
AAA	Authentication, Authorization, Accounting
AAAA	Authentication, Authorization, Accounting and Auditing
ACA	Accounting Answer
ACP	Access Control Policy
ACR	Accounting Request
ADN	Application Dedicated Node
ADN-AE	AE which resides in the Application Dedicated Node
AE	Application Entity
AE/CSE	Application Entity/Common Services Entity
AE-ID	Application Entity Identifier
AID	Addressing and Identification
Ann	Announced

API	Application Program Interface
App-ID	Application Identifier
AS	Application Server
ASCII	American Standard Code for Information Interchange
ASM CSF	Application and Service Layer Management CSF
ASM	Application and Service Layer Management
ASN	Application Service Node
ASN/MN	Application Service Node/Middle Node
ASN-AE	Application Entity that is registered with the CSE at Application Service Node
ASN-CSE	CSE which resides in the Application Service Node
BBF	BroadBand Forum
CDR	Charging Data Record
CF	Configuration Function
CHF	Charging Function
CM	Conditional Mandatory
CMDH	Communication Management and Delivery Handling
COSEM	Companion Specification for Energy Metering
CP	Communication Patterns
CRN	Cross-Resource Notification
CRS	Cross-Resource Subscription
CRUD	Create Retrieve Update Delete
CRUDN	Create Retrieve Update Delete Notify
CSE	Common Services Entity
CSE-ID	Common Service Entity Identifier
CSE-PoA	CSE Point of Access
CSF	Common Services Function
DCF	Device Configuration Function
DDMF	Device Diagnostics and Monitoring Function
DFMF	Device Firmware Management Function
DHCP	Dynamic Host Configuration Protocol
DIS CSF	Discovery CSF
DIS	Discovery
DM	Device Management
DMG CSF	Device Management CSF
DMG	Device Management
DMR	Data Management and Repository
DNS	Domain Name Server
DTMF	Device Topology Management Function
ESN	Electronic Serial Number
FQDN	Fully Qualified Domain Name
GMG CSF	Group Management CSF
GMG	Group Management
GPRS	General Packet Radio Service
GPS	Global Positioning System
GSMA	GSM Association (Global System for Mobile Communications Association)
GW	Gateway
HA/LMA	Home Agent/Local Mobility Agent
HAAA	Home AAA
HLR	Home Location Register
HSS	Home Subscriber Server
HTTP	HyperText Transfer Protocol
ID	Identifier
IETF	Internet Engineering Task Force
IMEI	International Mobile Equipment Identity
IMS	IP Multimedia System
IMSI	International Mobile Subscriber Identity
IN	Infrastructure Node
IN-AE	Application Entity that is registered with the CSE in the Infrastructure Node

IN-CSE	CSE which resides in the Infrastructure Node
IN-DMG	Infrastructure Node Device ManaGement
IN-DMG-MA	Infrastructure Node Device ManaGement Management Adapter
IP	Internet Protocol
IPE	Interworking Proxy application Entity
ISO	International Organization for Standardization
ITU-T	ITU Telecommunication Standardization Sector
IWF	InterWorking Function
JNI	Java Native Interface
JSON	JavaScript Object Notation
LOC CSF	Location CSF
LOC	Location
LWM2M	Lightweight M2M
M2M	Machine to Machine
M2M-IWF	M2M InterWorking Function
M2M-Sub-ID	M2M service Subscription Identifier
MA	Mandatory Announced
MAF	M2M Authentication Function
MBMS	Multimedia Broadcast Multicast Service
Mca	Reference Point for M2M Communication with AE
Mcc	Reference Point for M2M Communication with CSE
Mcc'	Reference Point for M2M Communication with CSE of different M2M Service Provider
Mch	Reference Point for M2M Communication with external charging server
Mcn	Reference Point for M2M Communication with NSE
Mcs	Reference Point to access functions and data protected within local secure environments
	MEID
	Mobile Equipment Identifier
MIP	Mobile IP
MN	Middle Node
MN-AE	Application Entity that is registered with the CSE in Middle Node
MN-CSE	CSE which resides in the Middle Node
MQTT	Message Queuing Telemetry Transport
MSISDN	Mobile Subscriber International Subscriber Directory Number
MTC	Machine Type Communications
NA	Not Announced
NAT	Network Address Translation
NoDN	Non-oneM2M Node
NSE	Network Service Entity
NSSE CSF	Network Service Exposure, Service Execution and Triggering CSF
NSSE	Network Service Exposure, Service Execution and Triggering
OA	Optional Announced
OIC	Open Interconnect Consortium
OID	Object Identifier
OMA	Open Mobile Alliance
OMA-DM	Open Mobile Alliance Device Management
OWL	Web Ontology Language
PDP	Packet Data Protocol
PDSN	Packet Data Serving Node
PMIP	Proxy Mobile IP
PoA	Point of Access
PPP	Point to Point Protocol
PRO	Protocol
QoS	Qualify of Service
RAM	Random Access Memory
RDF	Resource Description Framework
REG CSF	Registration CSF
REG	Registration
RFC	Request for Comments
RO	Read Only



RPC	Remote Procedure Calls
RW	Read Write
SCA CSF	Service Charging and Accounting CSF
SCA	Service Charging and Accounting
SCEF	Service Capability Exposure Function
SCS	Services Capability Server
SDO	Standards Developing Organization
SE	Secure Environment
SEA	Security Association Endpoint
SEC CSF	Security CSF
SEC	Security
SIP	Session Initiation Protocol
SLA	Service Level Agreement
SMF	Software Monitoring Function
SMI	Semantic Mashup Instance
SMJP	Semantic Mashup Job Profile
SMS	Short Messaging Service
SP	Service Provider
SPARQL	SPARQL Protocol and RDF Query Language
SP-ID	Service Provider Identifier
SSM	Service Session Management
SUB CSF	Subscription and Notification CSF
SUB	Subscription and Notification
TLS	Transport Layer Security
TMG CSF	Transaction Management CSF
TP	Traffic Patterns
TR	Technical Report
TS	Technical Specification
Tsms	Interface between Short Message Entity (SME) and Short Message Service Center (SMS SC)
Tsp	Interface between Service Capability Server (SCS) and Machine Type Communication (MTC)
	InterWorking Function
UE	User Equipment
UL	UpLink
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
URN	Uniform Resource Name
UTRAN	Universal Terrestrial Radio Access Network
UUID	Universally Unique Identifier
WLAN	Wireless Local Area Network
WO	Write Once
XML	Extensible Markup Language
XSD	XML Schema Definition

4 Quy ước

5 VNPT IoT oneM2M REST APIs

5.1 Giới thiệu chung

Mục tiêu chính của tài liệu này là mô tả các ví dụ về request/response. Các REST API được mô tả trong tài liệu này chủ yếu về các việc tác động đến tài nguyên (Resource, xem bản danh sách Resource) như Tạo, Truy vấn, Sửa, Xóa, đăng ký/nhận thông báo, tìm hiểu ...



5.2 Tên dưới dạng ngắn

5.2.1 Mô tả chung

oneM2M định nghĩa các tên ngắn cho việc mô tả resource và thuộc tính của nó. Tên ngắn (Short name) được dùng để mã hóa các bản tin JSON, XML hoặc CBOR. Các request/response sẽ giảm dung lượng khi sử dụng bản tin ngắn như vậy.

5.2.2 Loại resource dưới dạng ngắn

Bản mô tả resource và tên ngắn của resource.

Table 05.2.2-1: Resource type short names

Resource Type Name	Short Name	Description
accessControlPolicy	<i>acp</i>	
accessControlPolicyAnnc	<i>acpA</i>	
AE	<i>ae</i>	
AEAnnc	<i>aeA</i>	
container	<i>cnt</i>	
containerAnnc	<i>cntA</i>	
contentInstance	<i>cin</i>	
contentInstanceAnnc	<i>cinA</i>	
CSEBase	<i>cb</i>	
delivery	<i>dlv</i>	
eventConfig	<i>evcg</i>	
execInstance	<i>exin</i>	
group	<i>grp</i>	
groupAnnc	<i>grpA</i>	
locationPolicy	<i>lcp</i>	
locationPolicyAnnc	<i>lcpA</i>	
m2mServiceSubscriptionProfile	<i>mssp</i>	
mgmtCmd	<i>mgc</i>	
node	<i>nod</i>	
nodeAnnc	<i>nodA</i>	
pollingChannel	<i>pch</i>	
remoteCSE	<i>csr</i>	
remoteCSEAnnc	<i>csrA</i>	
request	<i>req</i>	
schedule	<i>sch</i>	
scheduleAnnc	<i>schA</i>	
serviceSubscribedAppRule	<i>asar</i>	
serviceSubscribedNode	<i>svsn</i>	
statsCollect	<i>stcl</i>	
statsConfig	<i>stcg</i>	
subscription	<i>sub</i>	
firmware	<i>fwr</i>	
firmwareAnnc	<i>fwrA</i>	
software	<i>swr</i>	
softwareAnnc	<i>swrA</i>	
memory	<i>mem</i>	
memoryAnnc	<i>memA</i>	
areaNwkInfo	<i>ani</i>	
areaNwkInfoAnnc	<i>aniA</i>	
areaNwkDeviceInfo	<i>andi</i>	
areaNwkDeviceInfoAnnc	<i>andiA</i>	
battery	<i>bat</i>	
batteryAnnc	<i>batA</i>	
deviceInfo	<i>dvi</i>	
deviceInfoAnnc	<i>dviA</i>	
deviceCapability	<i>dvc</i>	
deviceCapabilityAnnc	<i>dvcA</i>	
reboot	<i>rbo *</i>	
rebootAnnc	<i>rboA</i>	
eventLog	<i>evl</i>	
eventLogAnnc	<i>evlA</i>	
cmdhPolicy	<i>cmp</i>	
activeCmdhPolicy	<i>acmp</i>	
cmdhDefaults	<i>cmdf</i>	
cmdhDefEcValue	<i>cmdv</i>	
cmdhEcDefParamValues	<i>cmpv</i>	
cmdhLimits	<i>cml</i>	
cmdhNetworkAccessRules	<i>cmnr</i>	
cmdhNwAccessRule	<i>cmwr</i>	

Resource Type Name	Short Name	Description
cmdhBuffer	<i>cmbf</i>	
notificationTargetMgmtPolicyRef	<i>ntpr</i>	
notificationTargetPolicy	<i>ntp</i>	
policyDeletionRules	<i>pdr</i>	
<i>dynamicAuthorizationConsultation</i>	<i>dac</i>	
<i>semanticDescriptor</i>	<i>smd</i>	
<i>semanticDescriptorAnnnc</i>	<i>smdA</i>	
<i>timeSeries</i>	<i>ts</i>	
<i>timeSeriesAnnnc</i>	<i>tsA</i>	
timeSeriesInstance	<i>tsi</i>	
<i>timeSeriesInstanceAnnnc</i>	<i>tsiA</i>	
role	<i>rol</i>	
token	<i>tk</i>	
genericInterworkingService	<i>gis</i>	
genericInterworkingServiceAnnnc	<i>gisA</i>	
genericInterworkingOperationInstance	<i>gio</i>	
genericInterworkingOperationInstanceAnnnc	<i>gioA</i>	
svcObjWrapper	<i>ajsw</i>	
svcObjWrapperAnnnc	<i>ajswA</i>	
svcFwWrapper	<i>ajfw</i>	
svcFwWrapperAnnnc	<i>ajfwA</i>	
allJoynApp	<i>ajap</i>	
allJoynAppAnnnc	<i>ajapA</i>	
allJoynSvcObject	<i>ajso</i>	
allJoynSvcObjectAnnnc	<i>ajsoA</i>	
allJoynInterface	<i>ajif</i>	
allJoynInterfaceAnnnc	<i>ajifA</i>	
allJoynMethod	<i>ajmd</i>	
allJoynMethodAnnnc	<i>ajmdA</i>	
allJoynMethodCall	<i>ajmc</i>	
allJoynMethodCallAnnnc	<i>ajmcA</i>	
allJoynProperty	<i>ajpr</i>	
allJoynPropertyAnnnc	<i>ajprA</i>	
authorizationDecision	<i>auds</i>	
authorizationPolicy	<i>aupy</i>	
authorizationInformation	<i>auif</i>	
ontologyRepository	<i>ontr</i>	
ontologyRepositoryAnnnc	<i>ontrA</i>	
ontology	<i>ont</i>	
ontologyAnnnc	<i>ontA</i>	
semanticMashupJobProfile	<i>smjp</i>	
semanticMashupJobProfileAnnnc	<i>smjpA</i>	
semanticMashupInstance	<i>smi</i>	
semanticMashupInstanceAnnnc	<i>smiA</i>	
semanticMashupResult	<i>smr</i>	
semanticMashupResultAnnnc	<i>smrA</i>	
AEContactList	<i>alst</i>	
AEContactListPerCSE	<i>alpc</i>	
localMulticastGroup	<i>lmg</i>	
multimediaSession	<i>mms</i>	
multimediaSessionAnnnc	<i>mmsA</i>	
triggerRequest	<i>tgr</i>	
crossResourceSubscription	<i>crs</i>	

5.2.3 Thuộc tính resource dưới dạng ngắn

Bảng mô tả thuộc tính resource ở dạng ngắn.



Table 05.2.3-1: Resource attribute short names



Attribute Name	Occurs in	Short Name
<i>accessControlPolicyIDs</i>	All except <i>accessControlPolicy</i> , <i>contentInstance</i>	<i>acpi</i>
<i>announcedAttribute</i>	<i>accessControlPolicy</i> , <i>AE</i> , <i>container</i> , <i>contentInstance</i> , <i>group</i> , <i>locationPolicy</i> , <i>mgmtObj</i> , <i>node</i> , <i>remoteCSE</i> , <i>schedule</i> , <i>semanticDescriptor</i> , <i>trafficPattern</i>	<i>aa</i>
<i>announceTo</i>	<i>accessControlPolicy</i> , <i>AE</i> , <i>container</i> , <i>contentInstance</i> , <i>group</i> , <i>locationPolicy</i> , <i>mgmtObj</i> , <i>node</i> , <i>remoteCSE</i> , <i>schedule</i> , <i>semanticDescriptor</i> , <i>trafficPattern</i>	<i>at</i>
<i>creationTime</i>	All	<i>ct</i>
<i>expirationTime</i>	All except <i>contentInstance</i> , <i>CSEBase</i>	<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>	<i>container</i> , <i>contentInstance</i> , <i>delivery</i> , <i>request</i>	<i>st</i>
<i>resourceName</i>	All	<i>rn</i>
<i>privileges</i>	<i>accessControlPolicy</i>	<i>pv</i>
<i>selfPrivileges</i>	<i>accessControlPolicy</i>	<i>pvs</i>
<i>App-ID</i>	<i>AE</i>	<i>api</i>
<i>AE-ID</i>	<i>AE</i>	<i>aei</i>
<i>appName</i>	<i>AE</i>	<i>apn</i>
<i>pointOfAccess</i>	<i>AE</i> , <i>CSEBase</i> , <i>remoteCSE</i>	<i>poa</i>
<i>ontologyRef</i>	<i>AE</i> , <i>container</i> , <i>contentInstance</i> , <i>semanticDescriptor</i> , <i>flexContainer</i> , <i>timeSeries</i>	<i>or</i>
<i>nodeLink</i>	<i>AE</i> , <i>CSEBase</i> , <i>remoteCSE</i>	<i>nl</i>
<i>contentSerialization</i>	<i>AE</i>	<i>csz</i>
<i>creator</i>	<i>container</i> , <i>contentInstance</i> , <i>eventConfig</i> , <i>group</i> , <i>pollingChannel</i> , <i>statsCollect</i> , <i>statsConfig</i> , <i>subscription</i> , <i>semanticDescriptor</i> , <i>notificationTargetPolicy</i> , <i>flexContainer</i> , <i>timeSeries</i>	<i>cr</i>
<i>maxNrOfInstances</i>	<i>container</i> , <i>timeSeries</i>	<i>mni</i>
<i>maxByteSize</i>	<i>container</i> , <i>timeSeries</i>	<i>mbs</i>
<i>maxInstanceAge</i>	<i>container</i> , <i>timeSeries</i>	<i>mia</i>
<i>currentNrOfInstances</i>	<i>container</i> , <i>timeSeries</i>	<i>cni</i>
<i>currentByteSize</i>	<i>container</i>	<i>cbs</i>
<i>locationID</i>	<i>container</i>	<i>li</i>
<i>disableRetrieval</i>	<i>container</i>	<i>disr</i>
<i>contentInfo</i>	<i>contentInstance</i>	<i>cnf</i>
<i>contentSize</i>	<i>contentInstance</i> , <i>timeSeriesInstance</i>	<i>cs</i>
<i>contentRef</i>	<i>contentInstance</i>	<i>conr</i>
<i>containerDefinition</i>	<i>flexContainer</i>	<i>cnd</i>
<i>primitiveContent</i>	<i>request</i>	<i>pc</i>
<i>content</i>	<i>contentInstance</i> , <i>timeSeriesInstance</i>	<i>con</i>
<i>cseType</i>	<i>CSEBase</i> , <i>remoteCSE</i>	<i>cst</i>
<i>CSE-ID</i>	<i>CSEBase</i> , <i>remoteCSE</i> , <i>serviceSubscribedNode</i>	<i>csi</i>
<i>supportedResourceType</i>	<i>CSEBase</i>	<i>srt</i>
<i>notificationCongestionPolicy</i>	<i>CSEBase</i>	<i>npc</i>
<i>memberType</i>	<i>group</i>	<i>mt</i>
<i>currentNrOfMembers</i>	<i>group</i>	<i>cnm</i>
<i>maxNrOfMembers</i>	<i>group</i>	<i>mnm</i>
<i>memberIDs</i>	<i>group</i>	<i>mid</i>
<i>membersAccessControlPolicyIDs</i>	<i>group</i>	<i>macp</i>
<i>memberTypeValidated</i>	<i>group</i>	<i>mtv</i>
<i>consistencyStrategy</i>	<i>group</i>	<i>csy</i>
<i>semanticSupportIndicator</i>	<i>group</i>	<i>ssi</i>
<i>notifyAggregation</i>	<i>group</i>	<i>nar</i>
<i>groupName</i>	<i>group</i> , <i>subscription</i>	<i>gn</i>
<i>CSEBase</i>	<i>remoteCSE</i>	<i>cb</i>
<i>M2M-Ext-ID</i>	<i>remoteCSE</i>	<i>mei</i>
<i>Trigger-Recipient-ID</i>	<i>remoteCSE</i>	<i>tri</i>
<i>requestReachability</i>	<i>remoteCSE</i>	<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 Liệt kê các loại dữ liệu

5.3.0 Giới thiệu

OneM2M định nghĩa một số loại dữ liệu theo kiểu định danh số và diễn giải như sau:

5.3.1 m2m:resource Type

Table 5.3.1-1: Interpretation of resourceType

Value	Interpretation	Note
1	accessControlPolicy	
2	AE	
3	container	
4	contentInstance	
5	CSEBase	
6	delivery	
7	eventConfig	
8	execInstance	
9	group	
10	locationPolicy	
11	m2mServiceSubscriptionProfile	
12	mgmtCmd	
13	mgmtObj	
14	node	
15	pollingChannel	
16	remoteCSE	
17	request	
18	schedule	
19	serviceSubscribedAppRule	
20	serviceSubscribedNode	
21	statsCollect	
22	statsConfig	
23	subscription	
24	semanticDescriptor	
25	notificationTargetMgmtPolicyRef	
26	notificationTargetPolicy	
27	policyDeletionRules	
28	flexContainer	
29	timeSeries	
30	timeSeriesInstance	
31	role	
32	token	
34	dynamicAuthorizationConsultation	
35	authorizationDecision	
36	authorizationPolicy	
37	authorizationInformation	
38	ontologyRepository	
39	ontology	
40	semanticMashupJobProfile	
41	semanticMashupInstance	
42	semanticMashupResult	
43	AEContactList	
44	AEContactListPerCSE	
45	localMulticastGroup	
46	multimediaSession	
47	triggerRequest	
48	crossResourceSubscription	

5.3.2 m2m:result content

Kết quả trả về có thể thay đổi bằng cách thay đổi tham số resultContent(RCN). OneM2M định nghĩa 10 loại result Content, trong tài liệu này sẽ hướng dẫn sử dụng result content từ 0 đến 3 , một vài API có sử dụng result content 4. Bảng mô tả result content :

Table 5.3.2-1: Interpretation of resultContent

Value	Interpretation	Note
0	nothing	
1	attributes	
2	hierarchical address	
3	hierarchical address and attributes	
4	attributes and child resources	
5	attributes and child resource references	
6	child resource references	
7	original resource	
8	child resources	
9	modified attributes	
10	semantic content	

6 Bộ onem2m API của VNPT IoT Platform

6.1 Danh mục API

6.1.1 Giới thiệu

Định danh của API được xây dựng với định dạng sau:

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

Bảng mô tả các khái niệm định dạng:

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
<OPERATION_TYPE>	CRE	CREATE
	RET	RETRIEVE
	UPD	UPDATE
	DEL	DELETE
	DIS	DISCOVERY
<NUMBER>	001 - 999	-
<PERMUTATION>	Tên ngắn của thuộc tính hoặc loại resource được sử dụng trong request.	Các thay đổi của result content (kết quả trả về) <PERMUTATION> - RCN1, RCN2, RCN3, RCN4 Hoặc các filter khi thay đổi tham số Discovery <PERMUTATION> - TY, LBL, LVL, CRB v.v.

6.1.2 Bảng danh mục API

Table 6.1.2-1: list of the APIs

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



Interface ID	Interface Category	Interface Description
API/AE/CRE/001 API/AE/CRE/001_RCN1	<AE> CREATE	Create AE with resultContent set to 1 or no RCN
API/AE/CRE/001_RCN2	<AE> CREATE	Create AE with resultContent set to 2
API/AE/CRE/001_RCN3	<AE> CREATE	Create AE with resultContent set to 3
API/AE/RET/001 API/AE/RET/001_RCN1	<AE> RETRIEVE	Retrieve AE with resultContent set to 1 or no RCN
API/AE/RET/001_RCN4	<AE> RETRIEVE	Retrieve AE with resultContent set to 4
API/AE/UPD/001_RCN0	<AE> UPDATE	Update AE with resultContent set to 0
API/AE/UPD/001 API/AE/UPD/001_RCN1	<AE> UPDATE	Update AE with resultContent set to 1 or no RCN
API/AE/DEL/001_RCN0	<AE> DELETE	Delete AE with ResultContent set to 0
API/AE/DEL/001 API/AE/DEL/001_RCN1	<AE> DELETE	Delete AE with ResultContent set to 1 or no RCN
API/CONT/CRE/001_RCN 0	<container> CREATE	Create container with resultContent set to 0
API/CONT/CRE/001 API/CONT/CRE/001_RCN 1	<container> CREATE	Create container with resultContent set to 1 or no RCN
API/CONT/CRE/001_RCN 2	<container> CREATE	Create container with resultContent set to 2
API/CONT/CRE/001_RCN 3	<container> CREATE	Create container with resultContent set to 3
API/CONT/RET/001 API/CONT/RET/001_RCN 1	<container> RETRIEVE	Retrieve container with resultContent set to 1 or no RCN
API/CONT/RET/002_RCN 4	<container> RETRIEVE	Retrieve container with resultContent set to 4
API/CONT/UPD/001_RCN 0	<container> UPDATE	Update container with resultContent set to 0
API/CONT/UPD/001 API/CONT/UPD/001_RCN 1	<container> UPDATE	Update container with resultContent set to 1 or no RCN
API/CONT/DEL/001_RCN 0	<container> DELETE	Delete container with resultContent set to 0
API/CONT/DEL/001 API/CONT/DEL/001_RCN 1	<container> DELETE	Delete container with resultContent set to 1 or no RCN
API/CI/CRE/001_RCN0	<contentInstance> CREATE	Create contentInstance with resultContent set to 0
API/CI/CRE/001 API/CI/CRE/001_RCN1	<contentInstance> CREATE	Create contentInstance with resultContent set to 1 or no RCN
API/CI/CRE/001_RCN2	<contentInstance> CREATE	Create contentInstance with resultContent set to 2
API/CI/CRE/001_RCN3	<contentInstance> CREATE	Create contentInstance with resultContent set to 3
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_RCN 0	<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_RCN 0	<contentInstance> DELETE	Delete an oldest contentInstance resource with resultContent set to 0



Interface ID	Interface Category	Interface Description
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 0
API/SMD/CRE/001_RCN0	<semanticDescriptor> CREATE	Create semanticDescriptor with resultContent set to 0
API/SMD/CRE/001 API/SMD/CRE/001_RCN1	<semanticDescriptor> CREATE	Create semanticDescriptor with resultContent set to 1 or no RCN
API/SMD/CRE/001_RCN3	<semanticDescriptor> CREATE	Create semanticDescriptor with resultContent set to 3
API/SMD/RET/001 API/SMD/RET/001_RCN1	<semanticDescriptor> RETRIEVE	Retrieve semanticDescriptor with resultContent set to 1 or no RCN
API/SMD/UPD/001_RCN0	<semanticDescriptor> UPDATE	Update semanticDescriptor with resultContent set to 0
API/SMD/UPD/001 API/SMD/UPD/001_RCN1	<semanticDescriptor> UPDATE	Update semanticDescriptor with resultContent set to 1 or no RCN
API/SMD/DEL/001_RCN0	<semanticDescriptor> DELETE	Delete semanticDescriptor with resultContent set to 0
API/SMD/DEL/001 API/SMD/DEL/001_RCN1	<semanticDescriptor> DELETE	Delete semanticDescriptor with resultContent set to 1 or no RCN
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
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 API/SUB/CRE/001_RCN1	<subscription> CREATE	Create subscription with resultContent set to 1 or no RCN
API/SUB/CRE/001_RCN2	<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 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 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 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 API/GRP/CRE/001_RCN1	<group> CREATE	Create group with resultContent set to 1 or no RCN
API/GRP/CRE/001_RCN2	<group> CREATE	Create group with resultContent set to 2
API/GRP/CRE/001_RCN3	<group> CREATE	Create group with resultContent set to 3



Interface ID	Interface Category	Interface Description
API/GRP/RET/001 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 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 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 API/TS/CRE/001_RCN1	<timeSeries> CREATE	Create timeSeries with resultContent set to 1 or no RCN
API/TS/CRE/001_RCN2	<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 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 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 API/TSI/CRE/001_RCN1	<timeSeriesInstance> CREATE	Create timeSeriesInstance with resultContent set to 1 or no RCN
API/TSI/CRE/001_RCN2	<timeSeriesInstance> CREATE	Create timeSeriesInstance with resultContent set to 2
API/TSI/CRE/001_RCN3	<timeSeriesInstance> CREATE	Create timeSeriesInstance with resultContent set to 3
API/TSI/RET/001 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 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 API/ACP/CRE/001_RCN1	<accessControlPolicy> CREATE	Create accessControlPolicy with resultContent set to 1 or no RCN
API/ACP/CRE/001_RCN2	<accessControlPolicy> CREATE	Create accessControlPolicy with resultContent set to 2
API/ACP/CRE/001_RCN3	<accessControlPolicy> CREATE	Create accessControlPolicy with resultContent set to 3
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



Interface ID	Interface Category	Interface Description
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 Chi tiết API

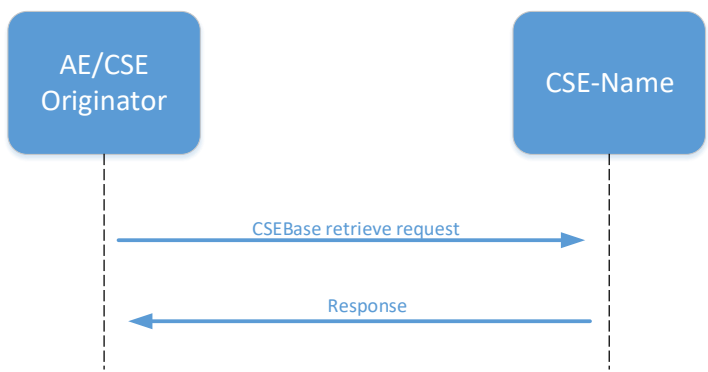
6.2.1 Giới thiệu chung

Phần này giới thiệu các API tiêu chuẩn để thực hiện các hoạt động CRUD trên tài nguyên (resource). Mỗi API có request và response bằng cách sử dụng giao thức HTTP và chuẩn bản tin theo định dạng JSON, tuy nhiên một số tài nguyên không có tất cả các API CRUD, có nghĩa là tài nguyên đó không hỗ trợ tất cả các hành động. Nội dung kết quả (result content) chỉ được sử dụng từ 0 đến 3 trong mục này, một số resource có thể có result content 4.

IV.1.1. Registration

Truy vấn thông tin CSEBase (AE retrieves the CSEBase resource)

Giao thức HTTP

API Id	HTTP_API/CB/RET/001
API Name	Truy vấn thông tin CSE Base
Target Resource	<CSEBase>
Description	API dùng để truy vấn resource type <CSEBase> tại CSE (IN CSE hoặc MN CSE)
Resource Structure before Sending Request	<div style="border: 1px solid black; padding: 5px; display: inline-block;">CSE-Name</div>
Call Flow	 <pre> sequenceDiagram participant A as AE/CSE Originator participant B as CSE-Name A->>B: CSEBase retrieve request B-->A: Response </pre>

HTTP Header Information		Header	Value
		Accept	application/ json
		X-M2M-RI	Request ID
		X-M2M-Origin	Entity ID of request originator
		Content-Type	application/json
Example	<p>API/CB/RET/001</p> <p>HTTP Request:</p> <p>GET /vnpt HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>Accept: application/json</p> <p>X-M2M-Origin: [key được cấp]</p> <p>X-M2M-RI: 112323131231</p> <p>HTTP Response:</p> <p>HTTP/1.1 200 OK</p> <p>X-M2M-RI:12313123</p> <p>X-M2M-RSC:2000</p> <p>Content-Length: 235</p> <p>Content-Type: application/json;charset=UTF-8</p> <p>X-M2M-Origin: CSE13141412441</p> <pre>{ "m2m:cb": { "ct": "1577775980328", "poa": ["http://10.1.90.56:9999/vnpt", "tcp://10.1.90.123:1883"] } }</pre>		



```
],  
  "srt": [  
    1,  
    2,  
    3,  
    4,  
    5,  
    9,  
    14,  
    15,  
    16,  
    17,  
    23,  
    28  
  ],  
  "cst": 1,  
  "ty": 5,  
  "ri": "/CSE13141412441",  
  "csi": "CSE13141412441",  
  "rn": "VNPT"  
}  
}
```



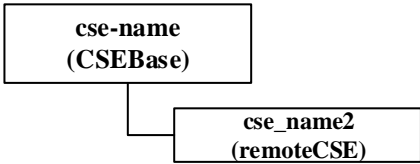
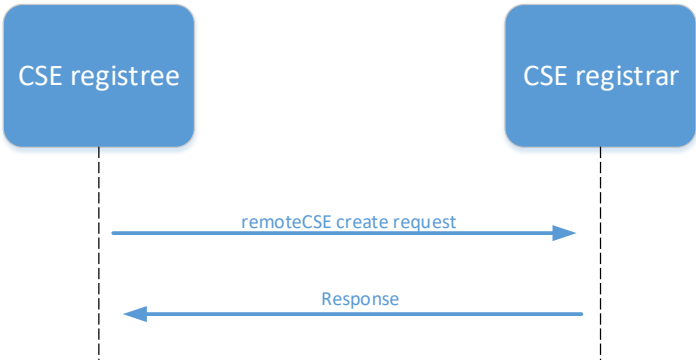
Giao thức MQTT

API Id	MQTT_API/CB/RET/001
API Name	Truy vấn thông tin CSE Base qua giao thức MQTT
Target Resource	<CSEBase>
Description	API dùng để truy vấn resource type <CSEBase> tại CSE (IN CSE hoặc MN CSE)
Resource Structure before Sending Request	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CSE-Name</div>
Call Flow	<pre> sequenceDiagram participant A as AE/CSE Originator participant B as CSE-Name A->>B: CSEBase retrieve request B-->A: Response </pre>
	<p>MQTT_API/CB/RET/001</p> <p>MQTT Request Topic: /oneM2M/req/[SERVICE ID]/CSE13141412441/json</p>

<p>Example</p>	<p>MQTT Request Payload:</p> <pre>{ "from": "[key được cấp]", "operation": 2, "resultContent": 1, "requestIdentifier": "12313123123123", "to": "/vnpt/icc", "resourceType": 5 }</pre> <p>MQTT Response Topic: /oneM2M/resp /CSE13141412441/[SERVICE ID]/json</p> <p>MQTT Response Payload:</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12313123123123", "from": "vnpt", "originatingTimestamp": "1577958781585", "content": { "m2m:cb": { "ct": "1577775980328", "poa": ["http://10.1.90.56:9999/vnpt", "tcp://10.1.90.123:1883"], "srt": [1.0, 2.0, 3.0, 4.0, 5.0, 9.0, 14.0, 15.0, 16.0, 17.0, 23.0, 28.0], "cst": 1.0, "ty": 5.0, "ri": "/vnpt ", "csi": "vnpt", "rn": "icc" } } }</pre>
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Đăng ký CSE (Registree CSE registers to Registrar CSE)

Giao thức HTTP

API Id	HTTP_API/CSR/CRE/001_RCN1	
API Name	remoteCSE CREATE	
Target Resource	<remoteCSE> resource type	
Description	API được sử dụng để gửi yêu cầu CREATE resource type <remoteCSE> đến CSE và nhận phản hồi từ CSE.	
Resource Structure		
Call Flow		
	Header	Value



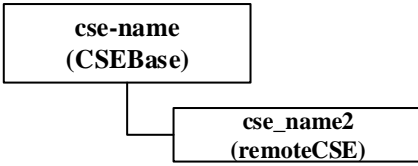
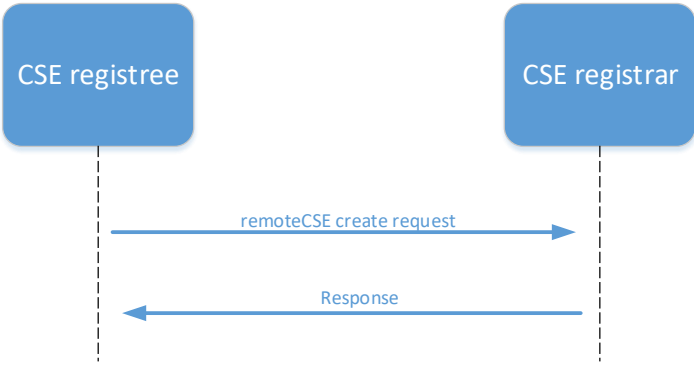
HTTP Header Information	<table border="1"><tr><td>Accept</td><td>application/ json</td></tr><tr><td>X-M2M-RI</td><td>Request ID</td></tr><tr><td>X-M2M-Origin</td><td>Entity ID of request originator</td></tr><tr><td>Content-Type</td><td>application/json;ty=16</td></tr></table>	Accept	application/ json	X-M2M-RI	Request ID	X-M2M-Origin	Entity ID of request originator	Content-Type	application/json; ty=16
Accept	application/ json								
X-M2M-RI	Request ID								
X-M2M-Origin	Entity ID of request originator								
Content-Type	application/json; ty=16								
Example with RCN=1	<p>HTTP_API/CSR/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /vnpt?rcn=1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>Accept: application/json</p> <p>X-M2M-Origin: [key được cấp]</p> <p>X-M2M-RI: 1234</p> <p>Content-Type: application/json;ty=16</p> <pre>{ "m2m:csr" : { "csi": "CSE213141314124144444", "cb" : "192.168.1.140/244343535346346", "rr" : true, "poa": ["mqtt://10.1.90.185:1883"], "cst": 2, "rn": "farm_gateway3" } }</pre> <p>HTTP Response:</p>								



	<pre>HTTP/1.1 201 Created X-M2M-RI: 1234 X-M2M-RSC: 2001 Content-Length:343 Content-Type:application/json { "m2m:csr": { "rr": true, "poa": ["mqtt://10.1.90.185:1883"], "cst": 2, "lt": "1577951567009", "et": "1593676307417", "ct": "1577951567009", "acpi": ["/CSE13141412441/acp-48090a026eda9a6a"], "ri": "/CSE13141412441/CSE213141314124144444", "lbl": [], "csi": "CSE213141314124144444", "pi": "/CSE13141412441", "rn": "farm_gateway3", "cb": "192.168.1.140/244343535346346" } }</pre>
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Giao thức MQTT

API Id	MQTT_API/CSR/CRE/001_RCN1
API Name	remoteCSE CREATE
Target Resource	<remoteCSE> resource type
Description	API được sử dụng để gửi yêu cầu CREATE resource type <remoteCSE> đến CSE và nhận phản hồi từ CSE qua giao thức MQTT.
Resource Structure	 <pre>graph TD; A["cse-name (CSEBase)"] --- B["cse_name2 (remoteCSE)"]</pre>
Call Flow	 <pre>sequenceDiagram; participant CSE_registree; participant CSE_registrar; CSE_registree->>CSE_registrar: remoteCSE create request; CSE_registrar-->>CSE_registree: Response</pre>

MQTT_API/CSR/CRE/001_RCN1

MQTT Request Topic: /oneM2M/req/[SERVICE ID]/CSE13141412441/json

MQTT Request Payload:

**Example
with
RCN=1**

```
{  
  
  "from": "acp_admin",  
  "operation": 1,  
  "resultContent": 1,  
  "content": {  
    "m2m:csr": {  
      "csi": "/[SERVICE ID]55",  
      "cb": "gateway.provider.com/[SERVICE ID]",  
      "rr": true,  
      "poa": ["mqtt://gateway.provider.com"],  
      "cst": 2,  
      "rn": "farm_gateway555"  
    }  
  },  
  "requestIdentifier": "m_createRemoteCSE674504",  
  "to": "/vnpt/icc",  
  "resourceType": 16  
}
```

MQTT Response Topic: /oneM2M/resp/CSE13141412441/[SERVICE ID]/json

MQTT Response Payload:

```
{  
  
  "responseStatusCode": 2001,  
  "requestIdentifier": "m_createRemoteCSE674504",  
  "originatingTimestamp": "1577957196512",  
}
```

```
"content": {  
  "m2m:csr": {  
    "rr": true,  
    "poa": ["mqtt://gateway.provider.com"],  
    "cst": 2.0,  
    "lt": "1577957196531",  
    "et": "1593681785725",  
    "ct": "1577957196531",  
    "acpi": ["/CSE13141412441/acp-eeba816b205a35703"],  
    "ri": "/CSE13141412441//[SERVICE ID]55",  
    "lbl": [],  
    "csi": "/[SERVICE ID]55",  
    "pi": "/CSE13141412441",  
    "rn": "farm_gateway555",  
    "cb": "gateway.provider.com/[SERVICE ID]"  
  }  
}  
}
```



Truy vấn thông tin CSE đã đăng ký (Registree CSE retrieves RemoteCSE from Registrar CSE)

Giao thức HTTP:

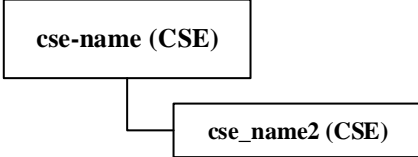
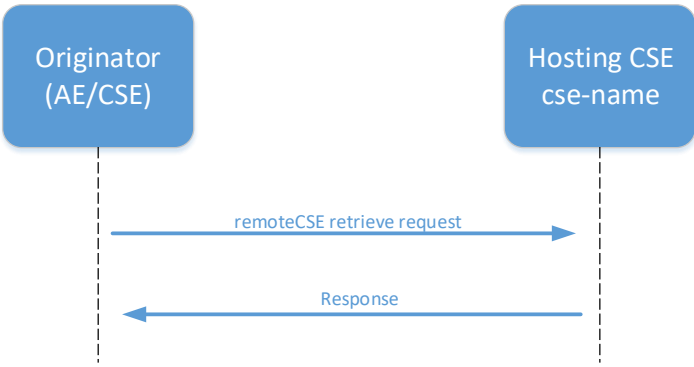
API Id	HTTP_API/CSR/RET/001 HTTP_API/CSR/RET/001_RCN1				
API Name	Truy vấn remoteCSE đã đăng ký có hoặc ko có tham số resultContent =1				
Target Resource	<remoteCSE> resource type dưới <CSEBase> của CSE lưu trữ quản lý.				
Description	API cho phép truy vấn thông tin remoteCSE đến CSE, trong cả hai trường hợp có resultContent hoặc không có resultContent thì kết quả như nhau.				
Resource Structure before Sending Request					
Call Flow					
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="width: 30%;">Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Header	Value		
Header	Value				

<p>HTTP Header Information</p>	<table border="1"> <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> </table>	Accept	application/ json	X-M2M-RI	Request ID	X-M2M-Origin	Entity ID of request originator
Accept	application/ json						
X-M2M-RI	Request ID						
X-M2M-Origin	Entity ID of request originator						
<p>Example with RCN=1 or No RCN</p>	<p>HTTP_API/CSR/RET/001</p> <p>HTTP_API/CSR/RET/001_RCN1</p> <p>HTTP Request:</p> <p>GET /vnpt/farm_gateway3?rcn=1 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>Accept: application/json</p> <p>X-M2M-Origin: [key được cấp]</p> <p>X-M2M-RI: 1234</p> <p>HTTP Response:</p> <p>HTTP/1.1 200 OK</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RSC: 2000</p> <p>Content-Length:286</p> <p>Content-Type:application/json</p> <pre>{ "m2m:csr": { "rr": true, "ct": "1577951567009", "poa": [</pre>						



	<pre>"mqtt://10.1.90.185:1883"], "cst": 2, "ty": 16, "acpi": ["/CSE13141412441/acp-48090a026eda9a6a"], "ri": "/CSE13141412441/CSE213141314124144444", "csi": "CSE213141314124144444", "lt": "1577951567009", "pi": "/CSE13141412441", "et": "1593676307417" } }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/CSR/RET/001 MQTT_API/CSR/RET/001_RCN1
API Name	Truy vấn remoteCSE đã đăng ký có hoặc ko có tham số resultContent =1 qua giao thức MQTT
Target Resource	<remoteCSE> resource type dưới <CSEBase> của CSE lưu trữ quản lý.
Description	API cho phép truy vấn thông tin remoteCSE đến CSE, trong cả hai trường hợp có resultContent hoặc không có resultContent thì kết quả như nhau.
Resource Structure before Sending Request	
Call Flow	
Example	<p>MQTT_API/CSR/RET/001 MQTT_API/CSR/RET/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/req/[SERVICE ID]/CSE13141412441/json</p>



<p>with RCN=1 or No RCN</p>	<p>MQTT Request Payload:</p> <pre>{ "from": [key được cấp], "operation": 2, "resultContent": 1, "requestIdentifier": "12313123123123", "to": "/CSE13141412441/vnpt/farm_gateway555", "resourceType": 16 }</pre> <p>MQTT Response Topic: /oneM2M/resp/CSE13141412441/[SERVICE ID]/json</p> <p>MQTT Response Payload:</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12313123123123", "originatingTimestamp": "1577957934399", "content": { "m2m:csr": { "rr": true, "ct": "1577957196531", "poa": ["mqtt://gateway.provider.com"], "cst": 2.0, "ty": 16.0, "acpi": ["/CSE13141412441/acp-eeba816b205a35703"], "ri": "/CSE13141412441//[SERVICE ID]55", "csi": "/[SERVICE ID]55", "lt": "1577957196531", "pi": "/CSE13141412441", "et": "1593681785725" } } }</pre>
-------------------------------------	---



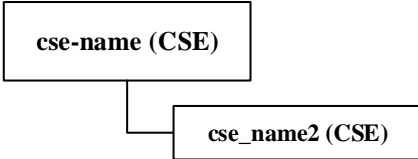
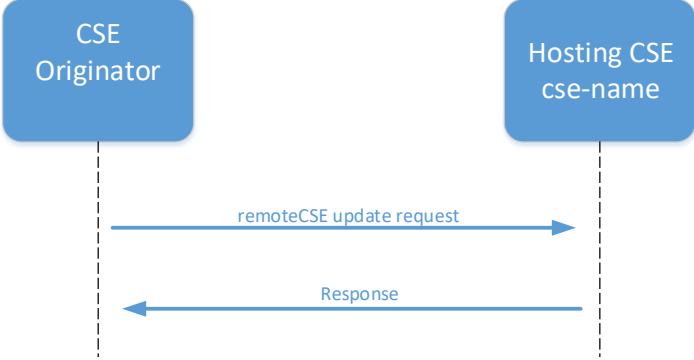
VNPT

**TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
CÔNG TY CÔNG NGHỆ THÔNG TIN VNPT**

	} }
--	--------

Cập nhật thông tin remoteCSE đã đăng ký đến CSE (Registree CSE retrieves RemoteCSE from Registrar CSE)

Giao thức HTTP:

API Id	HTTP_API/CSR/UPD/001 HTTP_API/CSR/UPD/001_RCNO HTTP_API/CSR/UPD/001_RCNI
API Name	remoteCSE UPDATE
Target Resource	<remoteCSE> resource type dưới <CSEBase> của CSE lưu trữ quản lý.
Description	API cho phép cập nhật resource remoteCSE đến CSE trong trường hợp result content bằng 0 hoặc 1
Resource Structure before Sending Request	 <pre> graph TD A[cse-name (CSE)] --- B[cse_name2 (CSE)] </pre>
Call Flow	 <pre> sequenceDiagram participant CO as CSE Originator participant HC as Hosting CSE cse-name CO->>HC: remoteCSE update request HC-->>CO: Response </pre>

HTTP Header Information	Header	Value
	Accept	application/ json
	X-M2M-RI	Request ID
	X-M2M-Origin	CSE-ID of request originator
Example with RCN=0	<p>HTTP_API/CSR/UPD/001_RCNO</p> <p>Example: Demo update <pointOfAccess> thuộc tính của <remoteCSE> resource.</p> <p>HTTP Request:</p> <pre>PUT /vnpt/farm_gateway3?rcn=0 HTTP/1.1 Host: https://api-iot.vnpt.vn/~vnpt Accept: application/json X-M2M-Origin: [key được cấp] X-M2M-RI: 1234</pre> <pre>{ "m2m:csr": { "poa": ["http://192.168.0.101:8282"] } }</pre> <p>HTTP Response:</p> <pre>HTTP/1.1 200 OK X-M2M-RI: 1234 X-M2M-RSC: 2004 Content-Length:0</pre>	

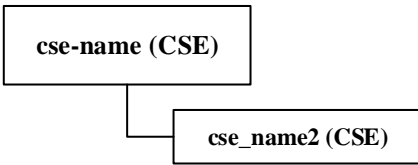
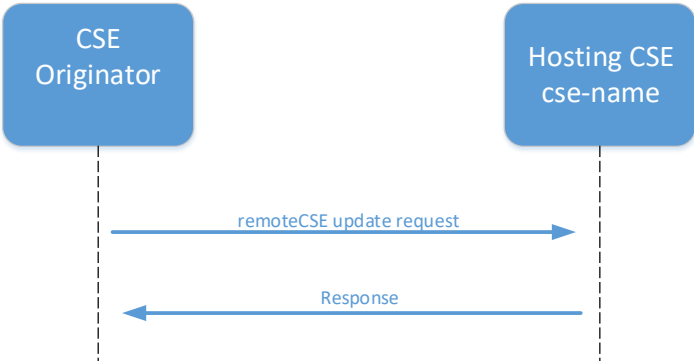
<p>Example with RCN=1 or No RCN</p>	<p>HTTP_API/CSR/UPD/001</p> <p>HTTP_API/CSR/UPD/001_RCN1</p> <p>Example: Demo update <pointOfAccess> thuộc tính của <remoteCSE> resource type.</p> <p>HTTP Request:</p> <p>PUT /vnpt/farm_gateway3?rcn=1 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>Accept: application/json</p> <p>X-M2M-Origin: [key được cấp]</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:csr" : { "rr" : true, "poa": ["mqtt://192.168.1.140:1883"] } }</pre> <p>HTTP Response:</p> <p>HTTP/1.1 200 OK</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RSC: 2004</p> <p>X-M2M-RVI: 2a</p> <p>Content-Length:228</p> <p>Content-Type:application/json</p>



```
{
  "m2m:csr": {
    "rr": false,
    "ct": "1577951567009",
    "poa": [
      "mqtt://192.168.1.140:1883"
    ],
    "cst": 2,
    "ty": 16,
    "acpi": [
      "/vnpt/acp-48090a026eda9a6a"
    ],
    "ri": "/vnpt/CSE213141314124144444",
    "lbl": [],
    "csi": "CSE213141314124144444",
    "lt": "1577954718887",
    "pi": "/vnpt",
    "rn": "farm_gateway3"
  }
}
```




Giao thức MQTT:

API Id	MQTT_API/CSR/UPD/001 MQTT_API/CSR/UPD/001_RCNO MQTT_API/CSR/UPD/001_RCN1
API Name	remoteCSE UPDATE
Target Resource	<remoteCSE> resource type dưới <CSEBase> của CSE lưu trữ quản lý.
Description	API cho phép cập nhật resource remoteCSE đến CSE trong trường hợp result content bằng 0 hoặc 1
Resource Structure before Sending Request	
Call Flow	
	<p>MQTT_API/CSR/UPD/001_RCNO</p> <p>Example: Demo update <pointOfAccess> thuộc tính của <remoteCSE> resource.</p>



<p>Example with RCN=0</p>	<p>MQTT Request Topic: /oneM2M/req/[SERVICE ID]/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 3, "resultContent": 0, "content": { "m2m:csr": { "poa": ["mqtt://192.168.1.22:1883"] } }, "requestIdentifier": "1231312312313123", "to": "/vnpt/vnpt/farm_gateway555", "resourceType": 16 }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/[SERVICE ID]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "1231312312313123", "originatingTimestamp": "1577962232919" }</pre>
	<p>MQTT_API/CSR/UPD/001</p> <p>MQTT_API/CSR/UPD/001_RCNI</p>

Example
with
RCN=1
or No RCN

Example: Demo update <pointOfAccess> thuộc tính của <remoteCSE> resource type.

MQTT Request Topic: /oneM2M/req/[SERVICE ID]/vnpt/json

MQTT Request Payload

```
{  
  
  "from": "[key được cấp]",  
  "operation": 3,  
  "resultContent": 1,  
  "content": {  
    "m2m:csr": {  
  
      "poa": ["mqtt://192.168.1.22:1883"]  
  
    }  
  },  
  "requestIdentifier": "1231312312313123",  
  "to": "/vnpt/vnpt/farm_gateway555",  
  "resourceType": 16  
}
```

MQTT Response Topic: /oneM2M/resp/ VNPT/[SERVICE ID]/json

MQTT Response Payload

```
{  
  
  "responseStatusCode": 2004,  
  "requestIdentifier": "1231312312313123",  
  "originatingTimestamp": "1577962033983",  
  "content": {  
    "m2m:csr": {  
      "rr": false,  
      "ct": "1577957196531",  
      "poa": ["mqtt://192.168.1.22:1883"],  
      "cst": 2.0,  
      "ty": 16.0,  
    }  
  }  
}
```

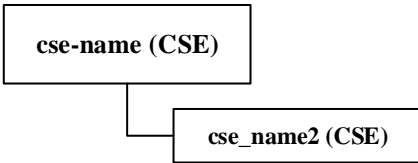
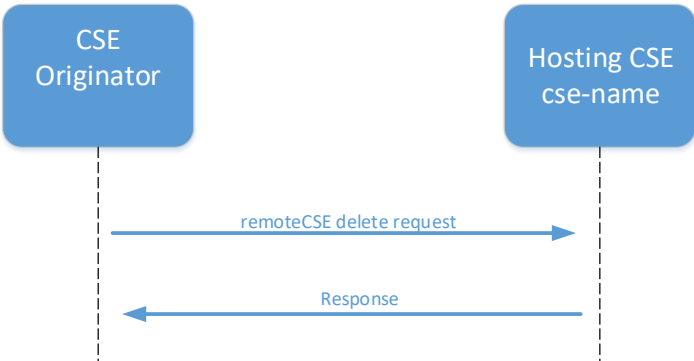


```
"acpi": ["/vnpt/acp-eeba816b205a35703"],  
"ri": "/vnpt/[SERVICE ID]55",  
"lbl": [],  
"csi": "/[SERVICE ID]55",  
"lt": "1577962034061",  
"pi": "/vnpt",  
"rn": "farm_gateway555"  
  
}  
  
}  
  
}
```

Hủy đăng ký remoteCSE đến CSE (Registree CSE deletes RemoteCSE from Registrar CSE)



Giao thức HTTP:

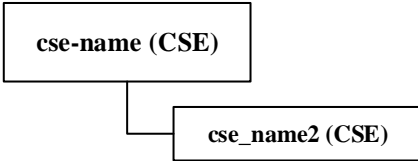
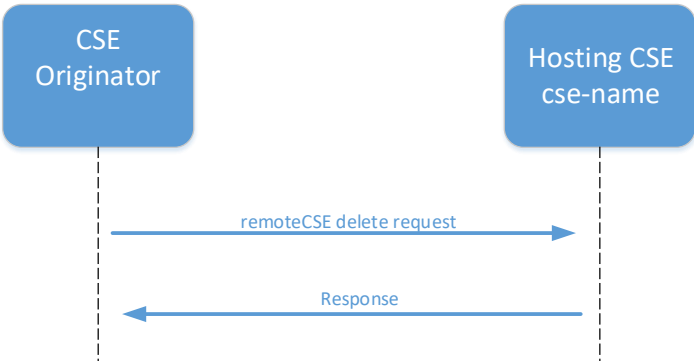
API Id	HTTP_API/CSR/DEL/001 HTTP_API/CSR/DEL/001_RCN0 HTTP_API/CSR/DEL/001_RCN1				
API Name	remoteCSE DELETE				
Target Resource	<remoteCSE> resource type dưới <CSEBase> của CSE lưu trữ quản lý.				
Description	API cho phép CSE bỏ,hủy đăng ký đến CSE đã đăng ký trước đó.				
Resource Structure before Sending Request					
Call Flow					
	<table border="1" data-bbox="485 1935 1270 2040"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/ json</td> </tr> </tbody> </table>	Header	Value	Accept	application/ json
Header	Value				
Accept	application/ json				



HTTP Header Information	X-M2M-RI	Request ID
	X-M2M-Origin	CSE-ID of request originator
Example with RCN=0	API/CSR/DEL/001 API/CSR/DEL/001_RCN1	
	HTTP Request: DELETE /vnpt/farm_gateway3 HTTP/1.1 Host: https://api-iot.vnpt.vn/~vnpt Accept: application/json X-M2M-Origin: [key được cấp] X-M2M-RI: 1234 HTTP Response: HTTP/1.1 200 OK X-M2M-RI: 1234 X-M2M-RSC: 2002 Content-Length:0	



Giao thức MQTT:

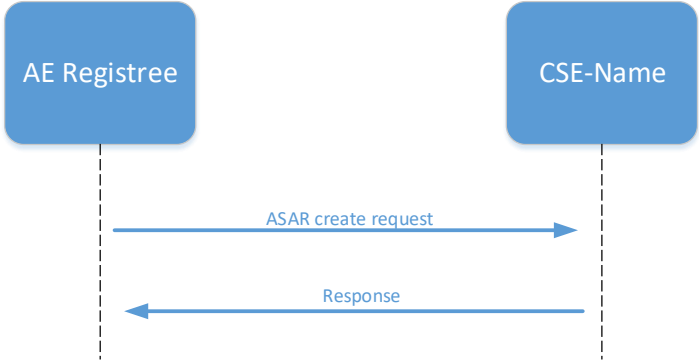
API Id	MQTT_API/CSR/DEL/001 MQTT_API/CSR/DEL/001_RCN0 MQTT_API/CSR/DEL/001_RCN1
API Name	remoteCSE DELETE
Target Resource	<remoteCSE> resource type dưới <CSEBase> của CSE lưu trữ quản lý.
Description	API cho phép CSE bỏ, hủy đăng ký đến CSE đã đăng ký trước đó.
Resource Structure before Sending Request	
Call Flow	
	MQTT_API/CSR/DEL/001 MQTT_API/CSR/DEL/001_RCN1

<p>Example with RCN=0</p>	<p>MQTT Request Topic: /oneM2M/req/[SERVICE ID]/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 4, "resultContent": 0, "requestIdentifier": "1231312312313123", "to": "/vnpt/icc/farm_gateway555", "resourceType": 16 }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/[SERVICE ID]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2002, "requestIdentifier": "1231312312313123", "originatingTimestamp": "1577962652703" }</pre>
----------------------------------	--

Create Resource type ServiceSubscribedAppRule

Resource Type ServiceSubscribedAppRule chứa các Rule về AppID , AE-ID mà nhà phát triển ứng dụng được phép sử dụng khi đăng ký AE.

Giao thức HTTP:

API Id	<p>HTTP_API/ASAR/CRE/001</p> <p>HTTP_API / ASAR /CRE/001_RCNO</p> <p>HTTP_API / ASAR /CRE/001_RCNI</p>								
API Name	ASAR CREATE								
Target Resource	<CSEBase> của resource AE request								
Description	<p>API được sử dụng cho các Entity request đăng ký ServiceSubscribedAppRule đến CSE. Sau khi có resourceType ServiceSubscribedAppRule nhà phát triển ứng dụng sẽ sử dụng token sinh ra từ applicableCredIDs như API_KEY của mình.</p> <p>Các rule AllowedAppIDs cho việc đăng ký AE sau này</p>								
Resource Structure before Sending Request	<div style="border: 1px solid black; width: 150px; height: 30px; margin: 0 auto; text-align: center;">CSE-Name</div>								
Call Flow	 <pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: ASAR create request CSE-->>AE: Response </pre>								
HTTP Header	<table border="1" style="margin: 0 auto;"> <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> </tbody> </table>	Header	Value	Accept	application/ json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator
Header	Value								
Accept	application/ json								
X-M2M-RI	Request ID								
X-M2M-Origin	AE-ID of request originator								



Information	<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">Content-Type</td> <td>application/json; ty=19</td> </tr> </table>	Content-Type	application/json; ty=19
Content-Type	application/json; ty=19		
<p>Example with RCN=0</p>	<p>HTTP_API/ASAR/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>POST /vnpt?rcn=0 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=19</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:asar" : { "rn":"rule_of_company1", "aai":["(N R)([0-9a-zA-Z\\.\-_])*(\.company1)"] } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Length:0</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p>		
	<p>HTTP_API/ASAR/CRE/001</p> <p>HTTP_API/ASAR/CRE/001_RCN1</p>		

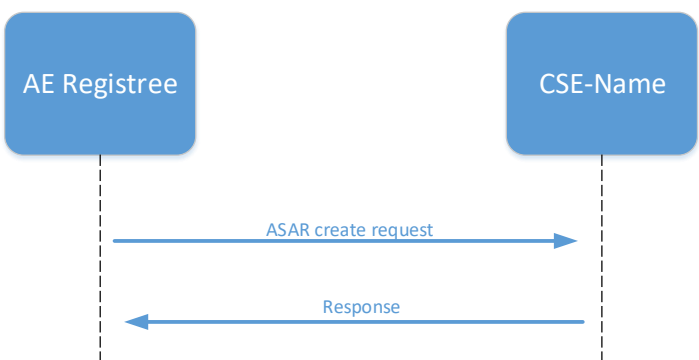


<p>Example with RCN=1 or No RCN</p>	<p>HTTP Request:</p> <p>POST /vnpt?rcn=1 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=19</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:asar" : { "rn": "rule_of_company1", "aai": ["(N R)([0-9a-zA-Z\\.\-_])*\\.company1"] } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Length:280</p> <p>Content-Type:application/json</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p> <pre>{ "m2m:asar": { "ct": "1592969831117", "aae": ["(C S)([0-9a-zA-Z])*\\.company1"], "ty": 19.0, "ri": "asar-48acd0a03980c8fe31", "lbl": [], "apci": [</pre>
--	--



	<pre>"04ca61df6dd13d14d5320acb5b0598f556e15371f491e83748ac89e5b889b09b"], "aai": ["(N R)([0-9a-zA-Z\\.\-_])*(\.company1)"], "it": "1592969831117", "pi": "/vnpt", "rn": "rule_of_company1", "et": "999999999" } }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/ASAR/CRE/001 MQTT_API / ASAR /CRE/001_RCN0 MQTT_API / ASAR /CRE/001_RCN1
API Name	
Target Resource	
Description	
Resource Structure before Sending Request	<div style="border: 1px solid black; width: 150px; height: 30px; margin: 0 auto; text-align: center;">CSE-Name</div>
Call Flow	 <pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: ASAR create request CSE-->>AE: Response </pre>
Example with RCN=0	MQTT_API/ASAR/CRE/001_RCN0 MQTT Request Topic: /oneM2M/req/admin:admin/vnpt/json MQTT Request Payload <pre> { "op": 1, "to": "/vnpt/icc", </pre>

	<pre>"fr": "admin:admin", "rqj": "db43ae7a-6e68-4232-bb87-c97ebb17771f", "pc": { "m2m:asar" : { "rn": "rule_of_company2", "aai": ["(N R)([0-9a-zA-Z\\.\-_])*\\.company2"] } }, "ty": 19, "rcn": 0 }</pre> <p>MQTT Response Topic: /oneM2M/req/vnpt/admin:admin/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "11233131313", "originatingTimestamp": "1578033611254" }</pre>
<p>Example with RCN=1 or No RCN</p>	<p>MQTT Request Topic: /oneM2M/req/admin:admin/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "op": 1, "to": "/vnpt/icc", "fr": "admin:admin", "rqj": "db43ae7a-6e68-4232-bb87-c97ebb17771f", "pc": { "m2m:asar" : { "rn": "rule_of_company2", "aai": ["(N R)([0-9a-zA-Z\\.\-_])*\\.company2"] } } }</pre>

```
}  
  
},  
"ty": 19,  
"rcn": 1  
  
}  
  
MQTT Response Topic: /oneM2M/req/vnpt/admin:admin/json  
MQTT Response Payload  
  
{  
  "rsc": 2001,  
  "rqi": "db43ae7a-6e68-4232-bb87-c97ebb17771f",  
  "pc": {  
    "m2m:asar": {  
      "ct": "1592983996361",  
      "aae": ["(C|S)([0-9a-zA-Z]*(\\.company2))"],  
      "ty": 19.0,  
      "ri": "asar-2a0ee80884dd2f2f0d",  
      "lbl": [],  
      "apci": ["8854332c2771c11194eceed26bb63cfddc4cba5d870f0f570fa98f7e8928d456"],  
      "aai": ["(N|R)([0-9a-zA-Z\\._\\-\\_]*(\\.company2))"],  
      "lt": "1592983996361",  
      "pi": "/vnpt",  
      "rn": "rule_of_company2",  
      "et": "999999999"  
    }  
  },  
  "ot": "1592983996317"  
}
```



Retrieve ServiceSubscriptionAppRule

Giao thức HTTP:

API Id	HTTP_API/ASAR/RET/001 HTTP_API / ASAR /RET/001_RCN1						
API Name	ASAR RETRIEVE						
Target Resource	<CSEBase>						
Description	Truy vấn thông tin resource type serviceSubscribedAppRule đã tạo ở bước 1.6						
Resource Structure before Sending Request	<div style="border: 1px solid black; padding: 5px; display: inline-block;">CSE-Name</div>						
Call Flow	<pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: ASAR create request CSE-->>AE: Response </pre>						
	<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> </tbody> </table>	Header	Value	Accept	application/ json	X-M2M-RI	Request ID
Header	Value						
Accept	application/ json						
X-M2M-RI	Request ID						



<p>HTTP Header Information</p>	<table border="1"> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json; ty=19</td> </tr> </table>	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json; ty=19
X-M2M-Origin	AE-ID of request originator				
Content-Type	application/json; ty=19				
<p>Example with RCN=0</p>	<p>HTTP_API/ASAR/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>GET /icc/ rule_of_company1 HTTP/1.1 Host: http://localhost:9999/~vnpt X-M2M-Origin: [key được cấp] Content-Type: application/json;ty=19 X-M2M-RI: 1234</p> <p>HTTP Response:</p> <p>200 OK Content-Length:0 X-M2M-RI:1234 X-M2M-RSC:2001 { "m2m:asar": { "ct": "1592969831117", "aae": ["(C S)([0-9a-zA-Z])*(\\company1)"], "ty": 19.0, "ri": "asar-48acd0a03980c8fe31", "lbl": [],</p>				



	<pre>"apci": ["04ca61df6dd13d14d5320acb5b0598f556e15371f491e83748ac89e5b889b09b"], "aai": ["(N R)([0-9a-zA-Z\\.\-_])*(\.company1)"], "it": "1592969831117", "pi": "/vnpt", "rn": "rule_of_company1", "et": "999999999" }</pre>
--	--



Giao thức MQTT:

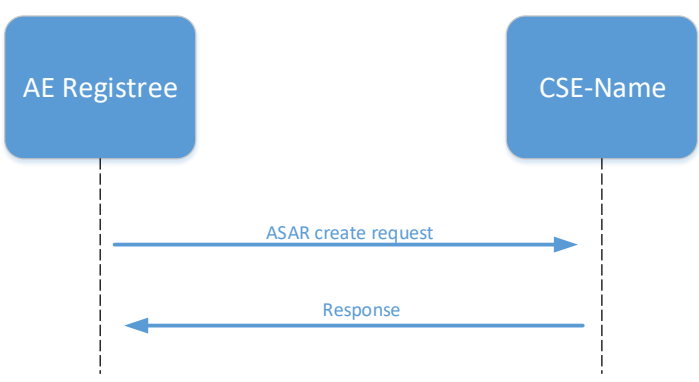
API Id	MQTT_API/ASAR/RET MQTT_API/ASAR/RET/001_RCN1
API Name	
Target Resource	
Description	
Resource Structure before Sending Request	<div style="text-align: center; border: 1px solid black; width: fit-content; margin: 0 auto; padding: 5px;">CSE-Name</div>
Call Flow	<pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: ASAR create request CSE-->>AE: Response </pre>
Example	<p>MQTT Request Topic: /oneM2M/req/admin:admin/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "op": 2, "to": "/vnpt/icc/name_of_rule", "fr": "admin:admin", </pre>



with RCN=1 or No RCN	<pre>"rqi": "db43ae7a-6e68-4232-bb87-c97ebb17771f" } MQTT Response Topic: /oneM2M/req/vnpt/admin:admin/json MQTT Response Payload { "rsc": 2000, "rqi": "db43ae7a-6e68-4232-bb87-c97ebb17771f", "pc": { "m2m:asar": { "ct": "1592983996361", "aae": ["(C S)([0-9a-zA-Z])*(\.company2)"], "ty": 19.0, "ri": "asar-2a0ee80884dd2f2f0d", "lbl": [], "apci": ["8854332c2771c11194eceed26bb63cfddc4cba5d870f0f570fa98f7e8928d456"], "aai": ["(N R)([0-9a-zA-Z\\.\-_])*(\.company2)"], "lt": "1592983996361", "pi": "/vnpt", "rn": "rule_of_company2", "et": "999999999" } }, "ot": "1592983996317" }</pre>
---	---

Update ServiceSubscriptionAppRule

Giao thức HTTP:

API Id	HTTP_API/ASAR/UPD HTTP_API / ASAR /UDP/001_RCN1						
API Name	ASAR UPDATE						
Target Resource	<CSEBase>						
Description	Cập nhật thông tin resource type serviceSubscribedAppRule đã tạo ở bước 1.6						
Resource Structure before Sending Request	<div style="border: 1px solid black; padding: 5px; display: inline-block;">CSE-Name</div>						
Call Flow	 <pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: ASAR create request CSE-->>AE: Response </pre>						
	<table border="1" style="margin-left: auto; margin-right: auto;"> <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> </tbody> </table>	Header	Value	Accept	application/ json	X-M2M-RI	Request ID
Header	Value						
Accept	application/ json						
X-M2M-RI	Request ID						



<p>HTTP Header Information</p>	<table border="1"> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json; ty=19</td> </tr> </table>	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json; ty=19
X-M2M-Origin	AE-ID of request originator				
Content-Type	application/json; ty=19				
<p>Example with RCN=0</p>	<p>HTTP_API/ASAR/UDP/001_RCNO</p> <p>HTTP Request:</p> <p>PUT /icc/ rule_of_company1 HTTP/1.1</p> <p>Host: http://localhost:9999/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=19</p> <p>X-M2M-RI: 1234</p> <pre> "m2m:asar" : { "rn":"rule_of_company1", "aai":["(N R)([0-9a-zA-Z\\.\-_])*(\.company1)"] } </pre> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Length:0</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p> <pre> { "m2m:asar": { "ct": "1592969831117", "aae": ["(C S)([0-9a-zA-Z])*(\.company1)"], } } </pre>				



```
"ty": 19.0,  
"ri": "asar-48acd0a03980c8fe31",  
"lb": [],  
"apci": [  
  "04ca61df6dd13d14d5320acb5b0598f556e15371f491e83748ac89e5b889b09b"  
],  
"aai": [  
  "(N|R)([0-9a-zA-Z\\.\-\\_])*(\.company1)"  
],  
"it": "1592969831117",  
"pi": "/vnpt",  
"rn": "rule_of_company1",  
"et": "999999999"  
}
```



Giao thức MQTT:

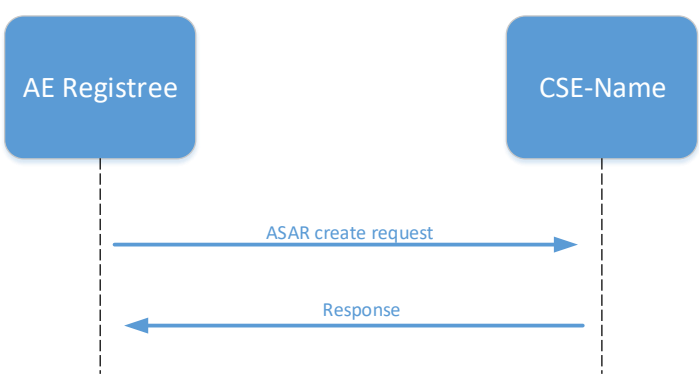
API Id	MQTT_API/ASAR/RET MQTT_API/ASAR/RET/001_RCNI
API Name	
Target Resource	
Description	
Resource Structure before Sending Request	<div style="text-align: center; border: 1px solid black; width: fit-content; margin: 0 auto; padding: 5px;">CSE-Name</div>
Call Flow	<pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: ASAR create request CSE-->>AE: Response </pre>
Example	<p>MQTT Request Topic: /oneM2M/req/admin:admin/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "op": 3, "to": "/vnpt/icc/name_of_rule", "fr": "admin:admin", </pre>



<p>with RCN=1 or No RCN</p>	<pre>"rqi": "db43ae7a-6e68-4232-bb87-c97ebb17771f" "m2m:asar" : { "rn":"rule_of_company1", "aai":["(N R)([0-9a-zA-Z\\.\-_])*(\.company1)"] } } MQTT Response Topic: /oneM2M/req/vnpt/admin:admin/json MQTT Response Payload { "rsc": 2000, "rqi": "db43ae7a-6e68-4232-bb87-c97ebb17771f", "pc": { "m2m:asar": { "ct": "1592983996361", "aae": ["(C S)([0-9a-zA-Z])*(\.company2)"], "ty": 19.0, "ri": "asar-2a0ee80884dd2f2f0d", "lbl": [], "apci": ["8854332c2771c11194eceed26bb63cfddc4cba5d870f0f570fa98f7e8928d456"], "aai": ["(N R)([0-9a-zA-Z\\.\-_])*(\.company2)"], "lt": "1592983996361", "pi": "/vnpt", "rn": "rule_of_company2", "et": "999999999" } }, "ot": "1592983996317" }</pre>
--	--

Delete ServiceSubscriptionAppRule

Giao thức HTTP:

API Id	HTTP_API/ASAR/DEL/001 HTTP_API / ASAR /DEL/001_RCN1						
API Name	ASAR DELETE						
Target Resource	<CSEBase>						
Description	Xóa resource type serviceSubscribedAppRule đã tạo ở bước 1.6						
Resource Structure before Sending Request	<div style="border: 1px solid black; padding: 5px; display: inline-block;">CSE-Name</div>						
Call Flow	 <pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: ASAR create request CSE-->>AE: Response </pre>						
	<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> </tbody> </table>	Header	Value	Accept	application/ json	X-M2M-RI	Request ID
Header	Value						
Accept	application/ json						
X-M2M-RI	Request ID						



HTTP Header Information	X-M2M-Origin	AE-ID of request originator
	Content-Type	application/json; ty=19

Example with RCN=0	HTTP_API/ASAR/CRE/001_RCN0
	<p>HTTP Request:</p> <p>DELETE /icc/ rule_of_company1 HTTP/1.1</p> <p>Host: http://localhost:9999/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=19</p> <p>X-M2M-RI: 1234</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Length:0</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p> <pre>{ "m2m:asar": { "ct": "1592969831117", "aae": ["(C S)([0-9a-zA-Z])*(\\company1)"], "ty": 19.0, "ri": "asar-48acd0a03980c8fe31", "lbl": [],</pre>



```
"apci": [  
  "04ca61df6dd13d14d5320acb5b0598f556e15371f491e83748ac89e5b889b09b"  
],  
"aai": [  
  "(N|R)([0-9a-zA-Z\\.\-\\_])*\\.company1"  
],  
"it": "1592969831117",  
"pi": "/vnpt",  
"rn": "rule_of_company1",  
"et": "999999999"  
}
```



Giao thức MQTT:

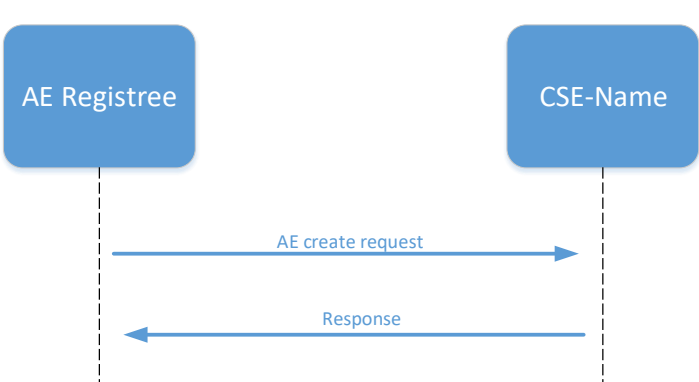
API Id	MQTT_API/ASAR/RET MQTT_API/ASAR/RET/001_RCN1
API Name	
Target Resource	
Description	
Resource Structure before Sending Request	<div style="text-align: center; border: 1px solid black; width: fit-content; margin: 0 auto; padding: 5px;">CSE-Name</div>
Call Flow	<pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: ASAR create request CSE-->>AE: Response </pre>
Example	<p>MQTT Request Topic: /oneM2M/req/admin:admin/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "op": 4, "to": "/vnpt/icc/name_of_rule", "fr": "admin:admin", </pre>



<p>with RCN=1 or No RCN</p>	<pre>"rqi": "db43ae7a-6e68-4232-bb87-c97ebb17771f" } MQTT Response Topic: /oneM2M/req/vnpt/admin:admin/json MQTT Response Payload { "rsc": 2002, "rqi": "db43ae7a-6e68-4232-bb87-c97ebb17771f", "pc": { "m2m:asar": { "ct": "1592983996361", "aae": ["(C S)([0-9a-zA-Z])*(\.company2)"], "ty": 19.0, "ri": "asar-2a0ee80884dd2f2f0d", "lbl": [], "apci": ["8854332c2771c11194eceed26bb63cfddc4cba5d870f0f570fa98f7e8928d456"], "aai": ["(N R)([0-9a-zA-Z\\.\-_])*(\.company2)"], "lt": "1592983996361", "pi": "/vnpt", "rn": "rule_of_company2", "et": "999999999" } }, "ot": "1592983996317" }</pre>
--	---

Đăng ký AE (AE registers to its registrar CSE via an AE Create Request)

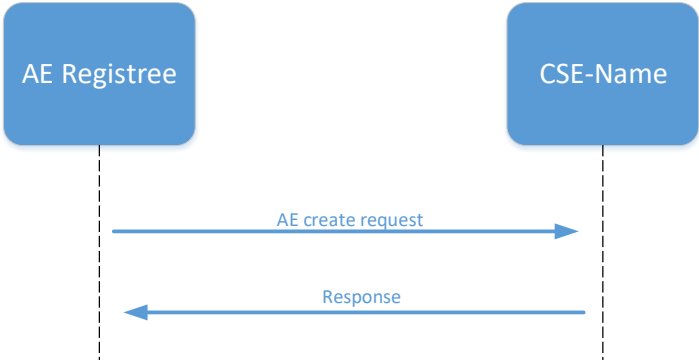
Giao thức HTTP:

API Id	<p>HTTP_API/AE/CRE/001</p> <p>HTTP_API /AE/CRE/001_RCNO</p> <p>HTTP_API /AE/CRE/001_RCNI</p>						
API Name	AE CREATE						
Target Resource	<CSEBase> của resource AE request						
Description	API được sử dụng cho các Entity request đăng ký AE đến CSE, ví dụ như đăng ký AE cho sensor đến MN CSE hoặc IN CSE.						
Resource Structure before Sending Request	<div style="border: 1px solid black; padding: 5px; display: inline-block;">CSE-Name</div>						
Call Flow	 <pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: AE create request CSE-->>AE: Response </pre>						
	<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> </tbody> </table>	Header	Value	Accept	application/ json	X-M2M-RI	Request ID
Header	Value						
Accept	application/ json						
X-M2M-RI	Request ID						



HTTP Header Information	<table border="1"><tr><td data-bbox="485 293 687 344">X-M2M-Origin</td><td data-bbox="687 293 1270 344">AE-ID of request originator</td></tr><tr><td data-bbox="485 344 687 396">Content-Type</td><td data-bbox="687 344 1270 396">application/json; ty=2</td></tr></table>	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json; ty=2
X-M2M-Origin	AE-ID of request originator				
Content-Type	application/json; ty=2				
Example with RCN=0	<p>HTTP_API/AE/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>POST /vnpt?rcn=0 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: C</p> <p>Content-Type: application/json;ty=2</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:ae": { "rn": "ae_light_05", "api": "com.vnpt.demo.ae.company1",//tuân theo quy tắc của resource type ServiceSubscribedAppRule "rr": true, "poa": ["mqtt://10.1.90.108:1883"] } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Length:0</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p>				

Giao thức MQTT

API Id	MQTT_API/AE/CRE/001 MQTT_API/AE/CRE/001_RCN0 MQTT_API/AE/CRE/001_RCN1
API Name	AE CREATE
Target Resource	<CSEBase> của resource AE request
Description	API được sử dụng cho các Entity request đăng ký AE đến CSE, ví dụ như đăng ký AE cho sensor đến MN CSE hoặc IN CSE.
Resource Structure before Sending Request	<div style="text-align: center; border: 1px solid black; width: fit-content; margin: 0 auto; padding: 5px;">CSE-Name</div>
Call Flow	 <pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: AE create request CSE-->>AE: Response </pre>
Example with RCN=0	<p>MQTT_API/AE/CRE/001_RCN0</p> <p>MQTT Request Topic: /oneM2M/req/AE0000111/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{</pre>

	<pre> "from": "acp_admin", "operation": 1, "resultContent": 0, "content": { "m2m:ae": { "rn": "ae_light_06", "api": "com.vnpt.demo.ae.light.06", "rr": true, "poa": ["mqtt://10.1.90.108:1883"] } }, "requestIdentifier": "11233131313", "to": "/vnpt/icc", "resourceType": 2 } </pre> <p>MQTT Response Topic: /oneM2M/req/AE0000111/vnpt/json</p> <p>MQTT Response Payload</p> <pre> { "responseStatusCode": 2001, "requestIdentifier": "11233131313", "originatingTimestamp": "1578033611254" } </pre>
<p>Example with RCN=1 or No RCN</p>	<p>MQTT_API/AE/CRE/001</p> <p>MQTT_API/AE/CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/req/AE0000111/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 1, </pre>

```
"resultContent": 1,  
  
"content": {  
  "m2m:ae": {  
    "rn": "ae_light_07",  
    "api": "com.vnpt.demo.ae.light.07",  
    "rr": true,  
    "poa": ["mqtt://10.1.90.108:1883"]  
  }  
},  
  
"requestIdentifier": "11233131313",  
"to": "/vnpt/icc",  
"resourceType": 2  
}
```

MQTT Response Topic: /oneM2M/req/AE0000111/vnpt/json

MQTT Response Payload

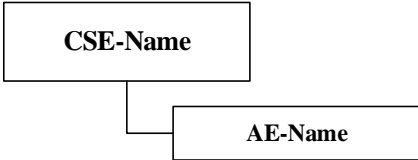
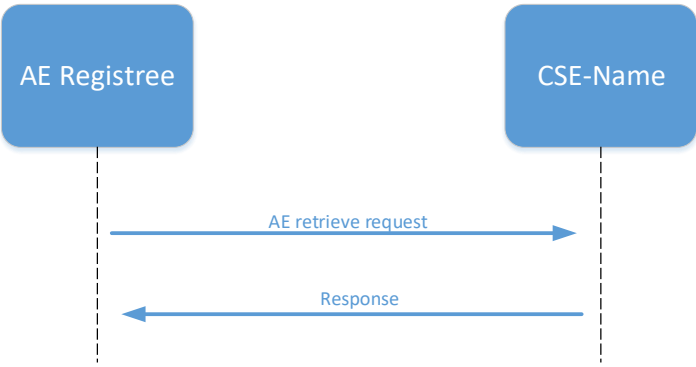
```
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "11233131313",  
  "originatingTimestamp": "1578033478086",  
  "content": {  
    "m2m:ae": {  
      "rr": true,  
      "ct": "1578033478130",  
      "poa": ["mqtt://10.1.90.108:1883"],  
      "aei": "C18f14d76788656cc",  
      "acpi": [],  
      "ri": "/vnpt/C18f14d76788656cc",  
      "lbl": [],  
      "lt": "1578033478130",  
      "pi": "/vnpt",  
      "api": "com.vnpt.demo.ae.light.07",  
      "rn": "ae_light_07",  
    }  
  }  
}
```



	<pre>"et": "1593750885163" } } }</pre>
--	--

Truy vấn thông tin AE đã đăng ký (AE retrieves <AE> resource via an AE Retrieve Request)

Giao thức HTTP:

API Id	HTTP_API/AE/RET/001_RCN1 HTTP_API/AE/RET/001_RCN4						
API Name	HTTP_AE RETRIEVE có hoặc không có tham số resultContent						
Target Resource	The <AE> resource được quản lý bởi <CSEBase>						
Description	API cho phép truy vấn thông tin resource type đã đăng ký đến CSE trong cả 2 trường hợp. Khi không có resultContent hoặc result content =1 và trường hợp resultContent =4. Trường hợp này yêu cầu trả thêm thông tin resource child của AE (resource type container) nếu có.						
Resource Structure before Sending Request							
Call Flow							
	<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> </tbody> </table>	Header	Value	Accept	application/ json	X-M2M-RI	Request ID
Header	Value						
Accept	application/ json						
X-M2M-RI	Request ID						



HTTP Header Information	<table border="1"><tr><td data-bbox="485 288 686 344">X-M2M-Origin</td><td data-bbox="686 288 1270 344">AE-ID of request originator</td></tr></table>	X-M2M-Origin	AE-ID of request originator
X-M2M-Origin	AE-ID of request originator		
Example with RCN=1 or No RCN	<p>HTTP_API/AE/RET/001 HTTP_API/AE/RET/001_RCN1</p> <p>HTTP Request:</p> <p>GET /vnpt/ae_light_06?rcn=1 HTTP/1.1</p> <p>Accept: application/json</p> <p>Host: http://localhost:9999/~ / VNPT</p> <p>X-M2M-Origin: [key được cấp]</p> <p>X-M2M-RI:1234</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Length:308</p> <p>Content-Type:application/json</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2000</p> <pre>{ "m2m:ae": { "rr": false, "ct": "1578026286761", "aei": "Cfc9a9cfe7a2b727e", "ty": 2, "acpi": [], "ri": "[key được cấp]", "lt": "1578026286761", "pi": "/vnpt",</pre>		

	<pre>"api": "com.vnpt.demo.ae.light.06", "rn": "ae_light_06", "et": "1593750885163" } }</pre>
<p>Example with RCN=4</p>	<p>API/AE/RET/001_RCN4</p> <p>HTTP Request:</p> <p>GET /vnpt/ae_light_06?rcn=4 HTTP/1.1 Accept: application/json Host: http://localhost:9999/~ / VNPT X-M2M-Origin: [key được cấp] X-M2M-RI:1234</p> <p>//trong ví dụ này giả sử <AE> ae_light_06 có 2 resource con <container> cont_temp1,cont_temp2</p> <p>HTTP Response:</p> <p>200 OK Content-Length:926 Content-Type:application/json X-M2M-RI:1234 X-M2M-RSC:2000</p> <pre>{ "m2m:ae": { "rr": true, "ct": "1578026286761", "m2m:cnt": [{ "st": 0,</pre>

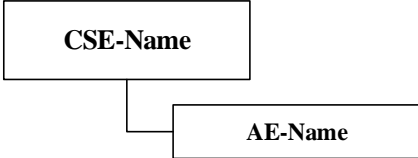
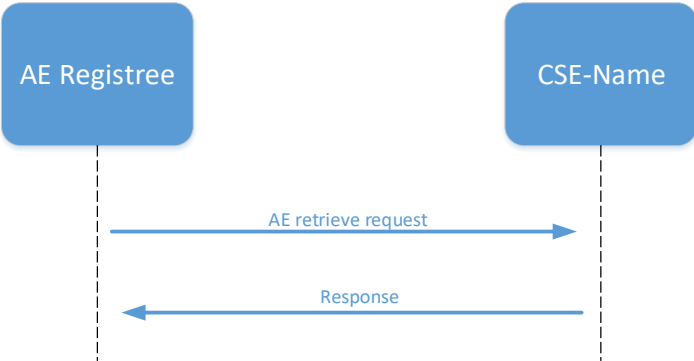


```
"ty": 3,  
"lt": "1578037144676",  
"mni": 100,  
"ct": "1578037144676",  
"oldest": "/vnpt/vnpt/ae_light_06/cont_temp1/ol",  
"ri": "/vnpt/cnt-6809baa33bd9185c8",  
"lbl": [],  
"pi": "[key được cấp]",  
"rn": "cont_temp1",  
"mbs": 100000,  
"cni": 0,  
"latest": "/vnpt/vnpt/ae_light_06/cont_temp1/la"  
},  
{  
"st": 0,  
"ty": 3,  
"lt": "1578037163243",  
"mni": 100,  
"ct": "1578037163243",  
"oldest": "/vnpt/vnpt/ae_light_06/cont_temp2/ol",  
"ri": "/vnpt/cnt-ce85d2379e230df0d",  
"lbl": [],  
"pi": "[key được cấp]",  
"rn": "cont_temp2",  
"mbs": 100000,  
"cni": 0,  
"latest": "/vnpt/vnpt/ae_light_06/cont_temp2/la"  
}  
],  
"poa": [  
"mqtt://10.1.90.108:1883"  
],  
"aei": "Cfc9a9cfe7a2b727e",  
"ty": 2,
```




	<pre>"ri": "[key được cấp]", "lbl": [], "it": "1578026286761", "pi": "/vnpt", "api": "com.bee.demo.ae.light.06", "rn": "ae_light_06" } }</pre>
--	--

Giao thức MQTT:

API Id	MQTT_API/AE/RET/001_RCN1 MQTT_API/AE/RET/001_RCN4
API Name	HTTP_AE RETRIEVE có hoặc không có tham số resultContent
Target Resource	<AE> resource được quản lý bởi <CSEBase>
Description	API cho phép truy vấn thông tin resource type đã đăng ký đến CSE trong cả 2 trường hợp. Khi không có resultContent hoặc result content =1 và trường hợp resultContent =4 .Trường hợp này yêu cầu trả thêm thông tin resource child của AE (resource type container) nếu có.
Resource Structure before Sending Request	
Call Flow	
Example with RCN=1 or No RCN	MQTT_API/AE/RET/001 MQTT_API/AE/RET/001_RCN1 MQTT Request Topic: /oneM2M/req/AE0000111/vnpt/json MQTT Request Payload {

	<pre> "from": "[key được cấp]", "operation": 2, "requestIdentifier": "131231231", "to": "/vnpt/vnpt/ae_light_06", "resourceType": 2 } MQTT Response Topic: /oneM2M/resp /vnpt/ AE0000111/json MQTT Response Payload { "responseStatusCode": 2000, "requestIdentifier": "131231231", "originatingTimestamp": "1578037721536", "content": { "m2m:ae": { "rr": true, "ct": "1578026286761", "poa": ["mqtt://10.1.90.108:1883"], "aei": "Cfc9a9cfe7a2b727e", "ty": 2.0, "ri": "[key được cấp]", "lb": [], "lt": "1578026286761", "pi": "/vnpt", "api": "com.bee.demo.ae.light.06", "rn": "ae_light_06" } } } </pre>
	<p>MQTT_API/AE/RET/001_RCN4</p> <p>//trong ví dụ này giả sử <AE> ae_light_06 có 2 resource con <container> cont_temp1,cont_temp2</p>

Example
with
RCN=4

MQTT Request Topic: /oneM2M/req/AE0000111/vnpt/json

MQTT Request Payload

```
{  
  "from": "[key được cấp]",  
  "operation": 2,  
  "resultContent": 4,  
  "requestIdentifier": "131231231",  
  "to": "/vnpt/vnpt/ae_light_06",  
  "resourceType": 2  
}
```

MQTT Response Topic: /oneM2M/resp /vnpt/ AE0000111/json

MQTT Response Payload

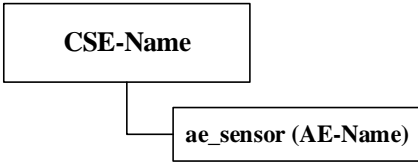
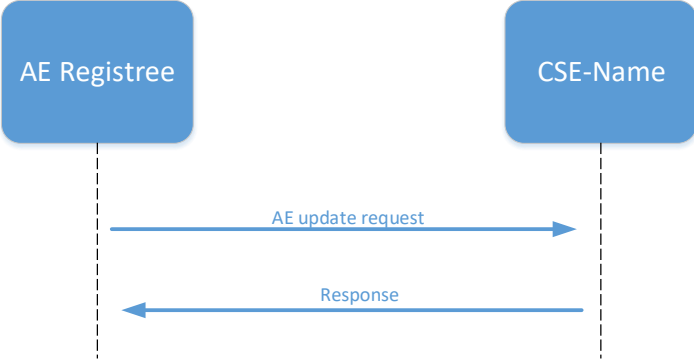
```
{  
  "responseStatusCode": 2000,  
  "requestIdentifier": "131231231",  
  "originatingTimestamp": "1578037894025",  
  "content": {  
    "m2m:ae": {  
      "rr": true,  
      "ct": "1578026286761",  
      "m2m:cnt": [{  
        "st": 0.0,  
        "ty": 3.0,  
        "lt": "1578037144676",  
        "mni": 100.0,  
        "ct": "1578037144676",  
        "oldest": "/vnpt/vnpt/ae_light_06/cont_temp1/ol",  
        "ri": "/vnpt/cnt-6809baa33bd9185c8",  
        "lbl": [],  
        "pi": "[key được cấp]",  
        "rn": "cont_temp1",  
        "mbs": 100000.0,  
      }  
    }  
  }  
}
```



```
"cni": 0.0,  
  "latest": "/vnpt/vnpt/ae_light_06/cont_temp1/la"  
}, {  
  "st": 0.0,  
  "ty": 3.0,  
  "lt": "1578037163243",  
  "mni": 100.0,  
  "ct": "1578037163243",  
  "oldest": "/vnpt/vnpt/ae_light_06/cont_temp2/ol",  
  "ri": "/vnpt/cnt-ce85d2379e230df0d",  
  "lbl": [],  
  "pi": "[key được cấp]",  
  "rn": "cont_temp2",  
  "mbs": 100000.0,  
  "cni": 0.0,  
  "latest": "/vnpt/vnpt/ae_light_06/cont_temp2/la"  
}  
],  
"poa": ["mqtt://10.1.90.108:1883"],  
"aei": "Cfc9a9cfe7a2b727e",  
"ty": 2.0,  
"ri": "[key được cấp]",  
"lbl": [],  
"lt": "1578026286761",  
"pi": "/vnpt",  
"api": "com.bee.demo.ae.light.06",  
"rn": "ae_light_06"  
}  
}  
}
```

Cập nhật thuộc tính của AE đã đăng ký (AE updates attribute in <AE> resource via an AE Update Request)

Giao thức HTTP:

API Id	HTTP_API/AE/UPD/001 HTTP_API/AE/UPD/001_RCNO HTTP_API/AE/UPD/001_RCN1
API Name	AE UPDATE
Target Resource	Resource type <AE> lưu trữ tại CSE, được quản lý bởi resource cha <CSEBase>.
Description	API này cho phép cập nhật thuộc tính của resource type tại CSE với resultContent=0 hoặc 1, với kết quả trả về chỉ là mã lỗi hoặc mã lỗi kèm thông tin resource type AE thay đổi.
Resource Structure before Sending Request	 <p>The diagram shows a box labeled 'CSE-Name' with a line pointing to a smaller box labeled 'ae_sensor (AE-Name)'.</p>
Call Flow	 <p>The diagram shows two blue rounded rectangles: 'AE Registree' on the left and 'CSE-Name' on the right. A dashed vertical line extends from each. A blue arrow labeled 'AE update request' points from the 'AE Registree' line to the 'CSE-Name' line. A blue arrow labeled 'Response' points from the 'CSE-Name' line back to the 'AE Registree' line.</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>Content-Type</td><td>application/json</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
	Header	Value									
	Accept	application/ json									
	X-M2M-RI	Request ID									
	X-M2M-Origin	AE-ID of request originator									
Content-Type	application/json										
Example with RCN=0	<p>HTTP API/AE/UPD/001_RCN0</p> <p>HTTP Request:</p> <p>PUT /vnpt/ae_light_06?rcn=0 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type:application/json</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:ae": { "poa": ["http://ae.temp.com:9090"], "rr":true } }</pre> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Length:0</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2004</p>										

Example
with
RCN=1
or No RCN

HTTP_API/AE/UPD/001_RCN1

HTTP Request:

PUT /vnpt/ae_light_06?rcn=1 HTTP/1.1

Host: https://api-iot.vnpt.vn/~vnpt

X-M2M-Origin: [key được cấp]

Content-Type:application/json

Accept: application/json

X-M2M-RI: 1234

```
{  
  "m2m:ae": {  
    "poa": ["http://ae.temp.com:9090"],  
    "rr": true  
  }  
}
```

HTTP Response:

200 OK

Content-Length:341

Content-Type:application/json

X-M2M-RI:1234

X-M2M-RSC:2004

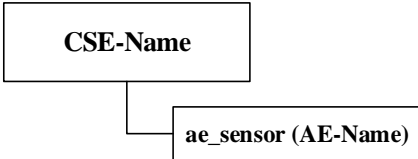
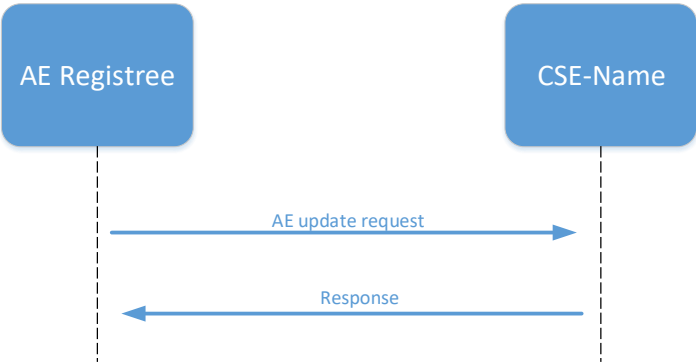
```
{  
  "m2m:ae": {  
    "rr": true,  
    "ct": "1578026286761",  
    "poa": [  

```




	<pre>"http://ae.temp.com:9090"], "acpi": [], "ri": "[key được cấp]", "lb": [], "lt": "1578472473716", "et": "1593750885163" } }</pre>
--	--

Giao thức MQTT:

API Id	MQTT_API/AE/UPD/001 MQTT_API/AE/UPD/001_RCN0 MQTT_API/AE/UPD/001_RCN1
API Name	AE UPDATE
Target Resource	Resource type <AE> lưu trữ tại CSE, được quản lý bởi resource cha <CSEBase>.
Description	API này cho phép cập nhật thuộc tính của resource type tại CSE với resultContent=0 hoặc 1, với kết quả trả về chỉ là mã lỗi hoặc mã lỗi kèm thông tin resource type AE thay đổi.
Resource Structure before Sending Request	
Call Flow	
Example with	MQTT_API/AE/UPD/001_RCN0 MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json MQTT Request Payload



<p>RCN=0</p>	<pre>{ "from": "[key được cấp]", "operation": 3, "resultContent": 0, "requestIdentifier": "131231231", "to": "/vnpt/vnpt/ae_light_06", "resourceType": 2, "content": { "m2m:ae": { "poa": ["http://ae.temp.com:90911"], "rr": true } } }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "131231231", "originatingTimestamp": "1578472995774" }</pre>
<p>Example with RCN=1 or No RCN</p>	<p>HTTP_API/AE/UPD/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 3, "resultContent": 1, </pre>

```
"requestIdentifier": "131231231",  
  
"to": "/vnpt/vnpt/ae_light_06",  
  
"resourceType": 2,  
  
"content": {  
  "m2m:ae": {  
    "poa": ["http://ae.temp.com:90911"],  
    "rr": true  
  }  
}  
}
```

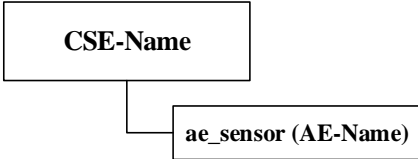
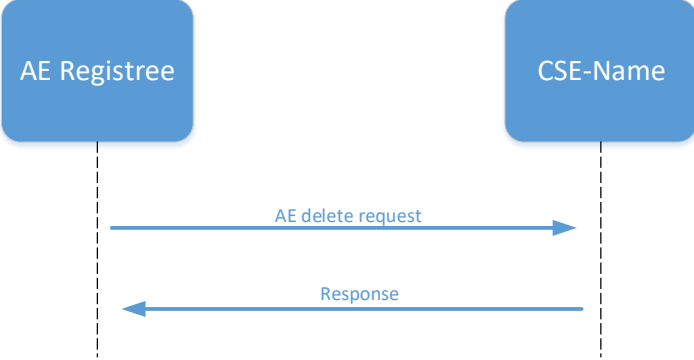
MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Response Payload

```
{  
  "responseStatusCode": 2004,  
  "requestIdentifier": "131231231",  
  "originatingTimestamp": "1578473241506",  
  "content": {  
    "m2m:ae": {  
      "rr": true,  
      "ct": "1578026286761",  
      "poa": ["http://ae.temp.com:90911"],  
      "aei": "Cfc9a9cfe7a2b727e",  
      "ty": 2.0,  
      "ri": "[key được cấp]",  
      "lbl": [],  
      "lt": "1578473241518",  
      "pi": "/vnpt",  
      "api": "com.bee.demo.ae.light.06",  
      "rn": "ae_light_06"  
    }  
  }  
}
```

Xóa AE đã đăng ký, hủy đăng ký (AE de-registers by deleting <AE> resource via an AE Delete Request)

Giao thức HTTP:

API Id	HTTP_API/AE/DEL/001 HTTP_API/AE/DEL/001_RCNO HTTP_API/AE/DEL/001_RCNI
API Name	AE DELETE
Target Resource	Resource type <AE> lưu trữ tại CSE, được quản lý bởi resource cha <CSEBase>.
Description	API cho phép xóa, hủy đăng ký AE
Resource Structure before Sending Request	
Call Flow	

<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 request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</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
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json										
<p>Example with RCN=0</p>	<p>HTTP_API/AE/DEL/001_RCN0</p> <p>HTTP Request:</p> <p>DELETE /vnpt/ae_light_06?rcn=0 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>X-M2M-RI: 1234</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Length:0</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2002</p>										
<p>Example with RCN=1 or no RCN</p>	<p>HTTP_API/AE/DEL/001</p> <p>HTTP_API/AE/DEL/001_RCN1</p> <p>HTTP Request:</p> <p>DELETE /vnpt/ae_light_05?rcn=1 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p>										

X-M2M-RI:1234

HTTP Response:

200 OK

Content-Length:308

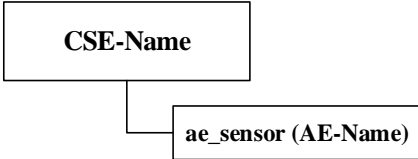
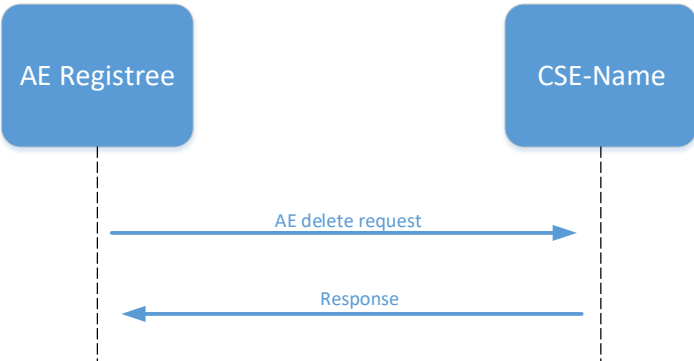
Content-Type:application/json

X-M2M-RI:1234

X-M2M-RSC:2002

```
{
  "m2m:ae": {
    "rr": true,
    "ct": "1578026273371",
    "poa": [
      "mqtt://10.1.90.108:1883"
    ],
    "aei": "C720e62fec8e87985",
    "ty": 2,
    "ri": "/vnpt/C720e62fec8e87985",
    "lbl": [],
    "lt": "1578026273371",
    "pi": "/vnpt",
    "api": "com.bee.demo.ae.light.05",
    "rn": "ae_light_05"
  }
}
```

Giao thức MQTT:

API Id	MQTT_API/AE/DEL/001 MQTT_API/AE/DEL/001_RCN0 MQTT_API/AE/DEL/001_RCN1
API Name	AE DELETE
Target Resource	Resource type <AE> lưu trữ tại CSE, được quản lý bởi resource cha <CSEBase>.
Description	
Resource Structure before Sending Request	
Call Flow	
Example with	MQTT_API/AE/DEL/001_RCN0 MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json MQTT Request Payload

<p>RCN=0</p>	<pre>{ "from": "[key được cấp]", "operation": 4, "resultContent": 0, "requestIdentifier": "131231231", "to": "/vnpt/vnpt/ae_light_06", "resourceType": 2 }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2002, "requestIdentifier": "131231231", "originatingTimestamp": "1578472995774" }</pre>
<p>Example with RCN=1 or no RCN</p>	<p>MQTT_API/AE/DEL/001</p> <p>MQTT_API/AE/DEL/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 4, "resultContent": 1, "requestIdentifier": "131231231", "to": "/vnpt/vnpt/ae_light_05", "resourceType": 2 }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p>

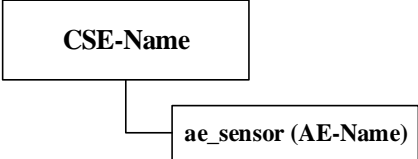
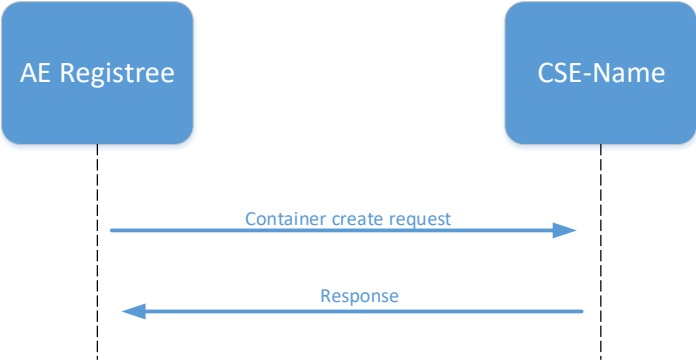
MQTT Response Payload

```
{
  "responseStatusCode": 2002,
  "requestIdentifier": "131231231",
  "originatingTimestamp": "1578473241506",
  "content": {
    "m2m:ae": {
      "rr": true,
      "ct": "1578026286761",
      "poa": ["http://ae.temp.com:90911"],
      "aei": "Cfc9a9cfe7a2b727e",
      "ty": 2.0,
      "ri": "[key được cấp]",
      "lbl": [],
      "lt": "1578473241518",
      "pi": "/vnpt",
      "api": "com.bee.demo.ae.light.06",
      "rn": "ae_light_06"
    }
  }
}
```

IV.1.2. Data Management

AE tạo resource type <container> (AE creates a container resource in registrar CSE via a container Create Request)

Giao thức HTTP:

API Id	HTTP_API/CONT/CRE/001 HTTP_API/CONT/CRE/001_RCN0 HTTP_API/CONT/CRE/001_RCN1 HTTP_API/CONT/CRE/001_RCN2 HTTP_API/CONT/CRE/001_RCN3				
API Name	container CREATE				
Target Resource	<AE> tạo resource con <container>.				
Description	API cho phép yêu cầu tạo resource type <container> con của resource cha là <AE> , quản lý bởi <CSEBase>.				
Resource Structure before Sending Request					
Call Flow					
	<table border="1" data-bbox="485 1944 1270 2042"> <thead> <tr> <th data-bbox="485 1944 687 1995">Header</th> <th data-bbox="687 1944 1270 1995">Value</th> </tr> </thead> <tbody> <tr> <td data-bbox="485 1995 687 2042">X-M2M-RI</td> <td data-bbox="687 1995 1270 2042">Request ID</td> </tr> </tbody> </table>	Header	Value	X-M2M-RI	Request ID
Header	Value				
X-M2M-RI	Request ID				



<p>HTTP Header Information</p>	<table border="1"> <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> </table>	X-M2M-Origin	AE-ID of request originator	Content-Type	application/ json; ty=3
X-M2M-Origin	AE-ID of request originator				
Content-Type	application/ json; ty=3				
<p>Example with No RCN or RCN=1</p>	<p>HTTP_API/CONT/CRE/001 HTTP_API/CONT/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /vnpt/ae_light_04?rcn=1 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=3</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:cnt": { "rn": "cont_temp6" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Length:265</p> <p>Content-Location:/mnID/cnt20180406T0857121405855183193600_cse01</p> <p>Content-Type:application/json</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p>				

	<pre>{ "m2m:cnt": { "st": 0, "ty": 3, "it": "1578543631926", "mni": 100, "ct": "1578543631926", "oldest": "/vnpt/vnpt/ae_light_04/cont_temp6/ol", "ri": "/vnpt/cnt-3ba599791d04d7d9", "lbl": [], "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "cont_temp6", "mbs": 100000, "cni": 0, "latest": "/vnpt/vnpt/ae_light_04/cont_temp6/la" } }</pre>
<p>Example with RCN=0</p>	<p>API/CONT/CRE/001_RCN/0</p> <p>HTTP Request:</p> <p>POST /vnpt/ae_light_04?rcn=0 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=3</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:cnt": { "rn": "cont_temp7" } }</pre>

	<pre>} HTTP Response: 201 Created Content-Length:0 X-M2M-RI:1234 X-M2M-RSC:2001</pre>
<p>Example with RCN=2</p>	<p>API/CONT/CRE/001_RCN2</p> <p>HTTP Request:</p> <pre>POST /vnpt/ae_light_04?rcn=2 HTTP/1.1 Host: https://api-iot.vnpt.vn/~vnpt X-M2M-Origin: [key được cấp] Content-Type: application/json;ty=3 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cnt": { "rn": "cont_temp8" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Length:50 Content-Type:application/json</pre>

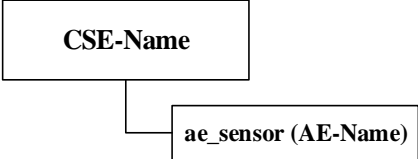
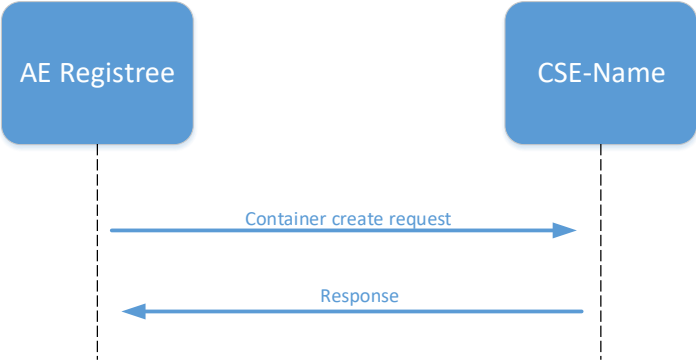


	<p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p> <pre>{ "m2m:uri": "/vnpt/vnpt/ae_light_04/cont_temp8" }</pre>
<p>Example with RCN=3</p>	<p>API/CONT/CRE/001_RCN3</p> <p>HTTP Request:</p> <p>POST /vnpt/ae_light_04?rcn=3 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=3</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:cnt": { "rn": "cont_temp9" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Length:322</p> <p>Content-Type:application/json</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC:2001</p>



```
{  
  "m2m:cnt": {  
    "st": 0,  
    "ty": 3,  
    "it": "1578543788351",  
    "mni": 100,  
    "ct": "1578543788351",  
    "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol",  
    "ri": "/vnpt/cnt-46cdb032b0fcbe76d8",  
    "lbl": [],  
    "pi": "/vnpt/Cba6c0e0f0a872695",  
    "rn": "cont_temp9",  
    "mbs": 100000,  
    "cni": 0,  
    "latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la"  
  },  
  "m2m:uri": "/vnpt/vnpt/ae_light_04/cont_temp9"  
}
```

Giao thức MQTT:

API Id	MQTT_API/CONT/CRE/001 MQTT_API/CONT/CRE/001_RCN0 MQTT_API/CONT/CRE/001_RCN1 MQTT_API/CONT/CRE/001_RCN2 MQTT_API/CONT/CRE/001_RCN3
API Name	container CREATE
Target Resource	<AE> tạo resource con <container>.
Description	API cho phép yêu cầu tạo resource type <container> con của resource cha là <AE>, quản lý bởi <CSEBase>.
Resource Structure before Sending Request	 <p>The diagram shows a hierarchical structure. At the top is a box labeled 'CSE-Name'. A line connects it to a box below labeled 'ae_sensor (AE-Name)'.</p>
Call Flow	 <p>The diagram shows two entities: 'AE Registree' and 'CSE-Name'. A dashed vertical line extends from 'AE Registree' down to a horizontal line. A blue arrow labeled 'Container create request' points from this horizontal line to another horizontal line extending from 'CSE-Name'. A second blue arrow labeled 'Response' points from the second horizontal line back to the first horizontal line.</p>
Example with	MQTT_API/CONT/CRE/001 MQTT_API/CONT/CRE/001_RCN1

<p>No RCN or RCN=1</p>	<p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 1, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 3, "content": { "m2m:cnt": { "rn": "cont_temp9" } } }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1578544234777", "content": { "m2m:cnt": { "st": 0.0, "ty": 3.0, "lt": "1578544234791", "mni": 100.0, "ct": "1578544234791", "oldest": "/vnpt/vnpt/ae_light_04/cont_temp04/ol", "ri": "/vnpt/cnt-2091975276461bbc", "lbl": [], "pi": "/vnpt/Cba6c0e0f0a872695", </pre>
------------------------	--



	<pre>"rn": "cont_temp04", "mbs": 100000.0, "cni": 0.0, "latest": "/vnpt/vnpt/ae_light_04/cont_temp04/la" } } }</pre>
<p>Example with RCN=0</p>	<p>MQTT_API/CONT/CRE/001_RCN/0</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 1, "resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 3, "content": { "m2m:cnt": { "rn": "cont_temp05" } } }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1578544340389" }</pre>

<p>Example with RCN=2</p>	<p>MQTT_API/CONT/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 1, "resultContent": 2, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 3, "content": { "m2m:cnt": { "rn": "cont_temp006" } } }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1578544530644", "content": { "m2m:uri": "/vnpt/vnpt/ae_light_04/cont_temp006" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/CONT/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p>

```
{  
  "from": "[key được cấp]",  
  "operation": 1,  
  "resultContent": 2,  
  "requestIdentifier": "12345",  
  "to": "/vnpt/vnpt/ae_light_04",  
  "resourceType": 3,  
  "content": {  
    "m2m:cnt": {  
      "rn": "cont_temp007"  
    }  
  }  
}  
MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json  
MQTT Response Payload
```

```
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1578544658571",  
  "content": {  
    "m2m:cnt": {  
      "st": 0.0,  
      "ty": 3.0,  
      "lt": "1578544658581",  
      "mni": 100.0,  
      "ct": "1578544658581",  
      "oldest": "/vnpt/vnpt/ae_light_04/cont_temp007/ol",  
      "ri": "/vnpt/cnt-8a1c467fb362bf3b",  
      "lbl": [],  
      "pi": "/vnpt/Cba6c0e0f0a872695",  
      "rn": "cont_temp007",  
      "mbs": 100000.0,  
      "cni": 0.0,  
    }  
  }  
}
```

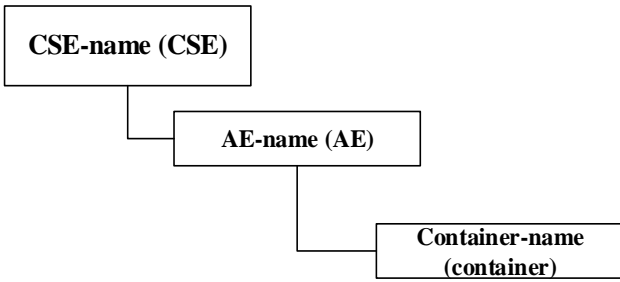
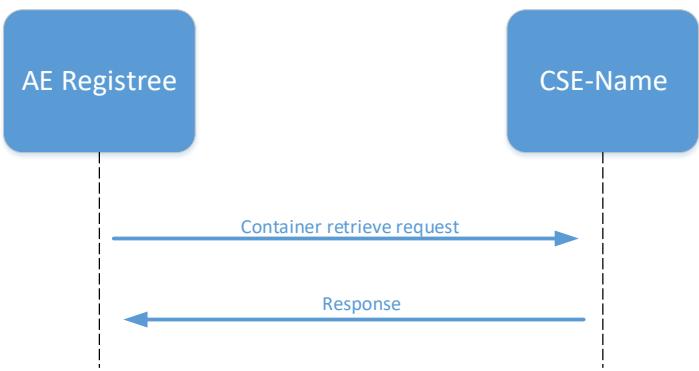


	<pre>"latest": "/vnpt/vnpt/ae_light_04/cont_temp007/la" }, "m2m:uri": "/vnpt/vnpt/ae_light_04/cont_temp007" } }</pre>
--	---



Truy vấn thông tin <container> (Verify the Retrieve request and response operation of <AE> resource between AE and Registrar CSE.)

Giao thức HTTP:

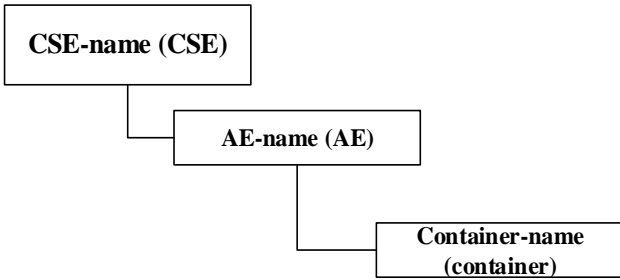
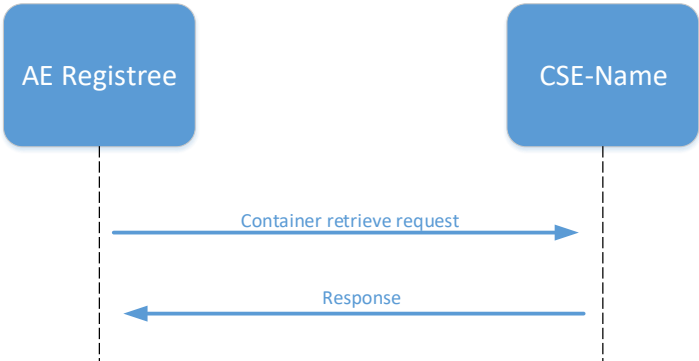
API Id	HTTP_API/CONT/RET/001 HTTP_API/CONT/RET/001_RCN1
API Name	container RETRIEVE via HTTP
Target Resource	Resource type <container>
Description	API truy vấn thông tin resource type đã tạo ở CSE.
Resource Structure before Sending Request	 <pre> graph TD CSE[CSE-name (CSE)] --- AE[AE-name (AE)] AE --- Container[Container-name (container)] </pre>
Call Flow	 <pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: Container retrieve request CSE-->>AE: Response </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 request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</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
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json										
<p>Example with No RCN or RCN=1</p>	<p>HTTP_API/CONT/RET/001 HTTP_API/CONT/RET/001_RCN/1</p> <p>HTTP Request:</p> <p>GET /vnpt/ae_light_04/cont_ temp9?rcn=1 HTTP/1.1 Host: https://api-iot.vnpt.vn/~vnpt X-M2M-Origin: [key được cấp] Accept: application/json X-M2M-RI: 1234</p> <p>HTTP Response:</p> <p>200 OK Content-Length:265 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2000</p>										



```
{  
  "m2m:cnt": {  
    "st": 0,  
    "ty": 3,  
    "it": "1578543788351",  
    "mni": 100,  
    "ct": "1578543788351",  
    "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol",  
    "ri": "/vnpt/cnt-46cdb032b0fcbe76d8",  
    "lbl": [],  
    "pi": "/vnpt/Cba6c0e0f0a872695",  
    "rn": "cont_temp9",  
    "mbs": 100000,  
    "cni": 0,  
    "latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la"  
  }  
}
```

Giao thức MQTT:

API Id	MQTT_API/CONT/RET/001 MQTT_API/CONT/RET/001_RCN1
API Name	container RETRIEVE via MQTT
Target Resource	Resource type <container>
Description	API truy vấn thông tin resource type đã tạo ở CSE.
Resource Structure before Sending Request	
Call Flow	
	MQTT_API/CONT/RET/001 MQTT_API/CONT/RET/001_RCN/1

Example
with
No RCN or
RCN=1

MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Request Payload

```
{  
  "from": "[key được cấp]",  
  "operation": 1,  
  "resultContent": 1,  
  "requestIdentifier": "12345",  
  "to": "/vnpt/vnpt/ae_light_04/cont_temp9",  
  "resourceType": 3  
}
```

MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Response Payload

```
{  
  "responseStatusCode": 2000,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1578553984287",  
  "content": {  
    "m2m:cnt": {  
      "st": 0.0,  
      "ty": 3.0,  
      "lt": "1578543788351",  
      "mni": 100.0,  
      "ct": "1578543788351",  
      "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol",  
      "ri": "/vnpt/cnt-46cdb032b0fcbe76d8",  
      "lbl": [],  
      "pi": "/vnpt/Cba6c0e0f0a872695",  
      "rn": "cont_temp9",  
      "mbs": 100000.0,  
      "cni": 0.0,  
    }  
  }  
}
```



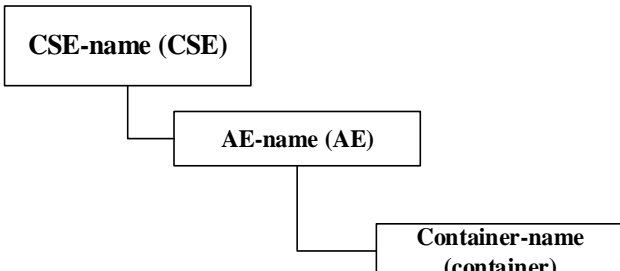
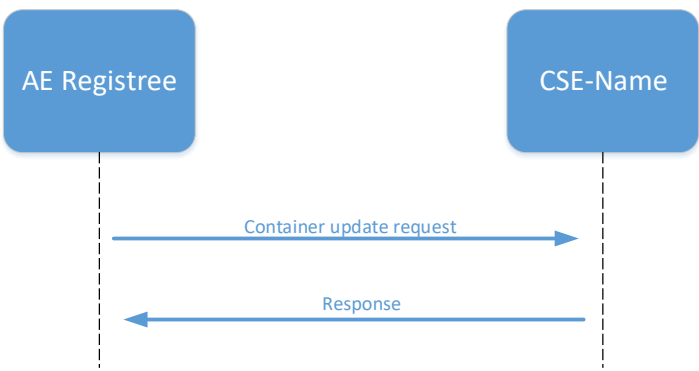
VNPT

**TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
CÔNG TY CÔNG NGHỆ THÔNG TIN VNPT**

	<pre>"latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la" } } }</pre>
--	--

Cập nhật, thay đổi thuộc tính cho <container> (AE updates attribute in application resource via a container Update Request)

Giao thức HTTP:

API Id	HTTP_API/CONT/UPD/001 HTTP_API/CONT/ UPD /001_RCN1
API Name	container UPDATE via HTTP
Target Resource	Resource type <container>
Description	API cập nhật thông tin cho resource type <container> đã tạo ở CSE qua giao thức HTTP.
Resource Structure before Sending Request	
Call Flow	

<p>HTTP Header Information</p>	<table border="1" data-bbox="485 344 1270 609"> <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</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
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json										
<p>Example with RCN=1</p>	<p>HTTP_API/CONT/UDP/001_RCN/1</p> <p>HTTP Request:</p> <p>PUT /vnpt/ae_light_04/cont_ temp9?rcn=1 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <pre data-bbox="360 1491 715 1774"> { "m2m:cnt": { "mni": 400, "lbl": ["indoor_temperature"] } } </pre> <p>HTTP Response:</p> <p>200 OK</p>										



	<p>Content-Length:265</p> <p>Content-Type:application/json</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2000</p> <pre>{ "m2m:cnt": { "st": 0, "ty": 3, "lt": "1578555602232", "mni": 400, "ct": "1578543788351", "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol", "ri": "/vnpt/cnt-46cdb032b0fcbe76d8", "lbl": ["indoor_temperature"], "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "cont_temp9", "mbs": 100000, "cni": 0, "latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la" } }</pre>
<p>Example with No RCN or RCN=0</p>	<p>HTTP_API/CONT/UPD/001</p> <p>HTTP Request:</p> <p>PUT /vnpt/ae_light_04/cont_temp9?rcn=0 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json</p> <p>X-M2M-RI:1234</p>



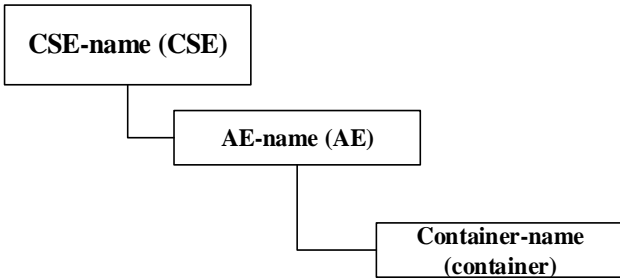
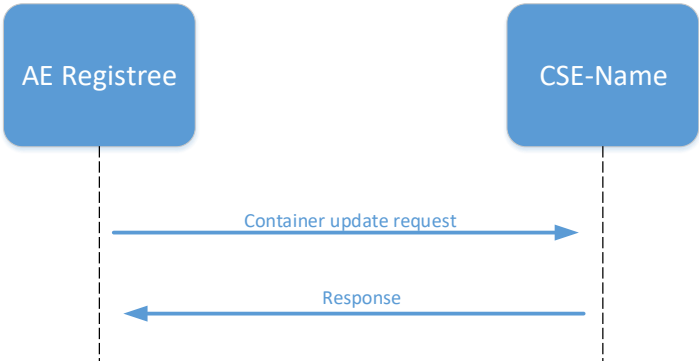
```
{  
  "m2m:cnt": {  
    "mni": 400,  
    "lbl": ["indoor_temperature"]  
  }  
}
```

HTTP Response:

```
200 OK  
Content-Length:0  
X-M2M-RI:1234  
X-M2M-RSC:2004
```




Giao thức MQTT:

API Id	MQTT_API/CONT/UPD/001 MQTT_API/CONT/ UPD /001_RCN1				
API Name	container UPDATE via MQTT				
Target Resource	Resource type <container>				
Description	API cập nhật thông tin cho resource type <container> đã tạo ở CSE qua giao thức MQTT.				
Resource Structure before Sending Request					
Call Flow					
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="width: 30%;">Header</th> <th style="width: 70%;">Value</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> </tbody> </table>	Header	Value		
Header	Value				



<p>HTTP Header Information</p>	<table border="1"> <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</td> </tr> </table>	Accept	application/ json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json
Accept	application/ json								
X-M2M-RI	Request ID								
X-M2M-Origin	AE-ID of request originator								
Content-Type	application/json								
<p>Example with RCN=1</p>	<p>MQTT_API/CONT/UDP/001_RCN/1</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 3, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/cont_temp9", "resourceType": 3, "content": { "m2m:cnt": { "mni": 500, "lbl": ["indoor_temperature"] } } }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{</pre>								



	<pre> "responseStatusCode": 2004, "requestIdentifier": "12345", "originatingTimestamp": "1578556007612", "content": { "m2m:cnt": { "st": 0.0, "ty": 3.0, "lt": "1578556007624", "mni": 500.0, "ct": "1578543788351", "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol", "ri": "/vnpt/cnt-46cdb032b0fcbe76d8", "lbl": ["indoor_temperature"], "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "cont_temp9", "mbs": 100000.0, "cni": 0.0, "latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la" } } </pre>
<p>Example with No RCN or RCN=0</p>	<p>MQTT_API/CONT/UPD/001</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "from": "[key được cấp]", "operation": 3, "resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/cont_temp9", "resourceType": 3, "content": { "m2m:cnt": { </pre>



```
"mni": 500,  
  "lbl": ["indoor_temperature"]  
}  
}
```

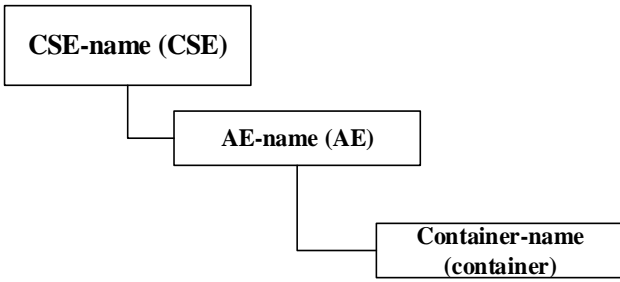
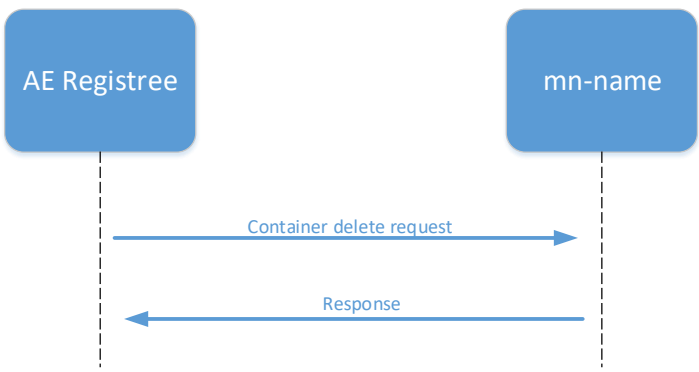
}
MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Response Payload

```
{  
  "responseStatusCode": 2004,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1578556086445"  
}
```

Xóa <container> (AE deletes a specific container resource via a container Delete Request)

Giao thức HTTP:

API Id	HTTP_API/CONT/DEL/001 HTTP_API/CONT/DEL/001_RCNO
API Name	container DELETE via HTTP
Target Resource	<container>
Description	API xóa đi resource type đã tạo ở CSE.
Resource Structure before Sending Request	
Call Flow	



<p>HTTP Header Information</p>	<table border="1"> <thead> <tr> <th data-bbox="485 293 687 344">Header</th> <th data-bbox="687 293 1270 344">Value</th> </tr> </thead> <tbody> <tr> <td data-bbox="485 344 687 396">X-M2M-RI</td> <td data-bbox="687 344 1270 396">Request ID</td> </tr> <tr> <td data-bbox="485 396 687 448">X-M2M-Origin</td> <td data-bbox="687 396 1270 448">AE-ID of request originator</td> </tr> <tr> <td data-bbox="485 448 687 499">Content-Type</td> <td data-bbox="687 448 1270 499">application/json</td> </tr> </tbody> </table>	Header	Value	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json
Header	Value								
X-M2M-RI	Request ID								
X-M2M-Origin	AE-ID of request originator								
Content-Type	application/json								
<p>Example with RCN=0</p>	<p>API/CONT/DEL/001_RCN0</p> <p>HTTP Request:</p> <p>DELETE /vnpt/ae_light_04/cont_temp9?rcn=1 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Length:0</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2002</p>								
<p>Example with No RCN or</p>	<p>API/CONT/DEL/001</p> <p>API/CONT/DEL/001_RCN1</p> <p>HTTP Request:</p>								

RCN=1

DELETE /vnpt/ae_light_04/cont_temp9?rcn=1 HTTP/1.1

Host: https://api-iot.vnpt.vn/~vnpt

X-M2M-Origin: [key được cấp]

X-M2M-RI:1234

X-M2M-RVI: 2a

HTTP Response:

200 OK

X-M2M-Origin:

X-M2M-RI:1234

X-M2M-RSC:2002

```
{
  "m2m:cnt": {
    "st": 0,
    "ty": 3,
    "it": "1578556086456",
    "mni": 500,
    "ct": "1578543788351",
    "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol",
    "ri": "/vnpt/cnt-46cdb032b0fcbe76d8",
    "lbl": [
      "indoor_temperature"
    ],
    "pi": "/vnpt/Cba6c0e0f0a872695",
    "rn": "cont_temp9",
    "mbs": 100000,
    "cni": 0,
    "latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la"
  }
}
```



Giao thức MQTT:

API Id	MQTT_API/CONT/DEL/001				
API Name	MQTT_API/CONT/DEL/001_RCNO				
API Name	container DELETE via MQTT				
Target Resource	<container>				
Description	API xóa đi resource type đã tạo ở CSE.				
Resource Structure before Sending Request	<pre> graph TD CSE[CSE-name (CSE)] --- AE[AE-name (AE)] AE --- Container[Container-name (container)] </pre>				
Call Flow	<pre> sequenceDiagram participant AE as AE Registree participant mn as mn-name AE->>mn: Container delete request mn-->>AE: Response </pre>				
	<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> </tbody> </table>	Header	Value	X-M2M-RI	Request ID
Header	Value				
X-M2M-RI	Request ID				



<p>HTTP Header Information</p>	<table border="1"> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> </tr> </table>	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json
X-M2M-Origin	AE-ID of request originator				
Content-Type	application/json				
<p>Example with RCN=0</p>	<p>MQTT_API/CONT/DEL/001_RCNO</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 4, "resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/cont_temp9", "resourceType": 3 }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2002, "requestIdentifier": "12345", "originatingTimestamp": "1578556086445" }</pre>				
<p>Example with No RCN or</p>	<p>MQTT_API/CONT/DEL/001</p> <p>MQTT_API/CONT/DEL/001_RCNI</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p>				

RCN=1

MQTT Request Payload

```
{  
  "from": "[key được cấp]",  
  "operation": 4,  
  "resultContent": 1,  
  "requestIdentifier": "12345",  
  "to": "/vnpt/vnpt/ae_light_04/cont_temp9",  
  "resourceType": 3  
}
```

MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Response Payload

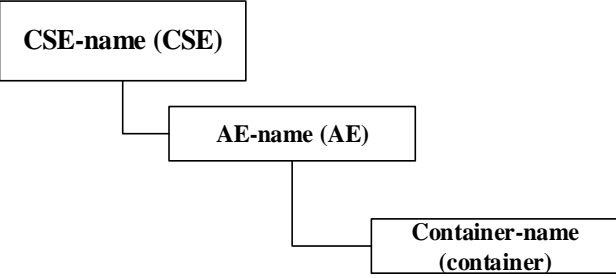
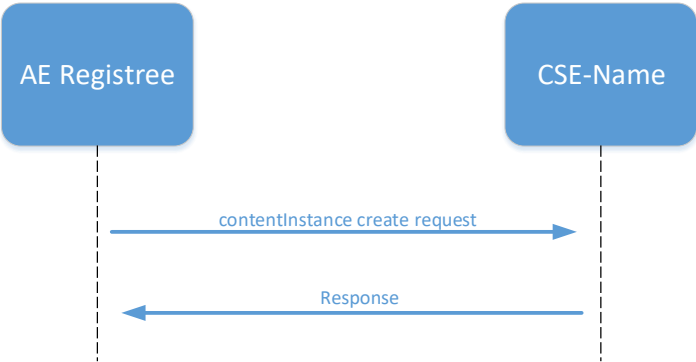
```
{  
  "responseStatusCode": 2002,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1578556086445",  
  "content": {  
    "m2m:cnt": {  
      "st": 0,  
      "ty": 3,  
      "lt": "1578556086456",  
      "mni": 500,  
      "ct": "1578543788351",  
      "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol",  
      "ri": "/vnpt/cnt-46cdb032b0fcbe76d8",  
      "lbl": [  
        "indoor_temperature"  
      ],  
      "pi": "/vnpt/Cba6c0e0f0a872695",  
      "rn": "cont_temp9",  
      "mbs": 100000,  
      "cni": 0,  
      "latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la"
```



	} }
--	------------

Tạo <contentInstance> cho <container>, thay đổi các giá trị thuộc tính hiện tại của <container> tương ứng như stateTag , currentNrOfInstances , currentNrOfInstances (AE adds a contentInstance resource <contentInstance> to a specific container in Registrar CSE via a contentInstance Create Request and the registrar CSE updates the parent <container> resource with stateTag, and currentNrOfInstances, CurrentByteSize attributes correspondingly)

Giao thức HTTP:

API Id	HTTP_API/CI/CRE/001 HTTP_API/CI/CRE/001_RCN0 HTTP_API/CI/CRE/001_RCN1 HTTP_API/CI/CRE/001_RCN2 HTTP_API/CI/CRE/001_RCN3		
API Name	contentInstance CREATE via HTTP		
Target Resource	<container> resource cha của <contentInstance> sẽ tạo		
Description	API tạo <contentInstance> cho <container>		
Resource Structure before Sending Request	 <p>The diagram shows a hierarchical structure of resource identifiers. At the top is a box labeled 'CSE-name (CSE)'. A line connects it to a box below labeled 'AE-name (AE)'. Another line connects 'AE-name (AE)' to a box at the bottom labeled 'Container-name (container)'.</p>		
Call Flow	 <p>The diagram illustrates the call flow between two entities: 'AE Registree' and 'CSE-Name'. Both are represented by blue rounded rectangles. Vertical dashed lines extend downwards from each. A blue arrow points from 'AE Registree' to 'CSE-Name' with the label 'contentInstance create request'. A second blue arrow points from 'CSE-Name' back to 'AE Registree' with the label 'Response'.</p>		
	<table border="1" data-bbox="485 2029 1270 2076"> <thead> <tr> <th data-bbox="485 2029 687 2076">Header</th> <th data-bbox="687 2029 1270 2076">Value</th> </tr> </thead> </table>	Header	Value
Header	Value		

<p>HTTP Header Information</p>	<table border="1"> <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> </table>	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json; ty=4
X-M2M-RI	Request ID						
X-M2M-Origin	AE-ID of request originator						
Content-Type	application/json; ty=4						
<p>Example with rcn=0</p>	<p>MQTT_API/CI/CRE/001_RCN/0</p> <p>HTTP Request:</p> <p>POST /vnpt/ae_light_04/cont_temp05?rcn=1 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=4</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:cin": { "cnf": "text/json", "con": { "humi": 112, "state":"OFF" } } }</pre> <p>HTTP Response:</p>						



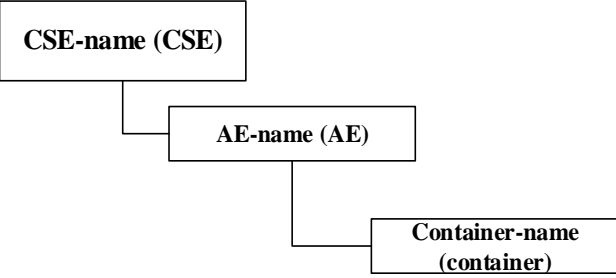
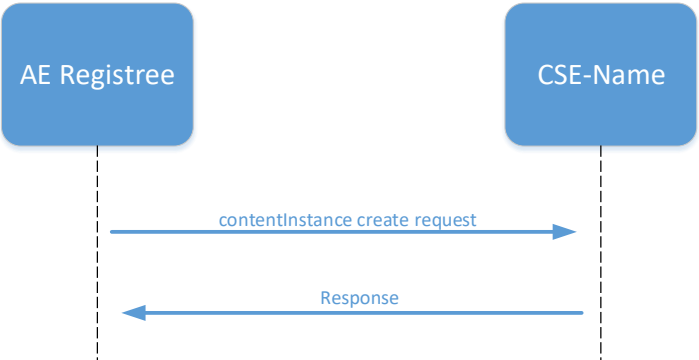
	<p>201 Created</p> <p>Content-Length:0</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p>
<p>Example with No RCN or RCN=1</p>	<p>MQTT_API/CI/CRE/001</p> <p>MQTT_API/CI/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /vnpt/ae_light_04/cont_temp05?rcn=1 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=4</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:cin": { "cnf": "text/json", "con": { "humi": 112, "state":"OFF" } } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Length:258</p> <p>Content-Type:application/json</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p>

	<pre>{ "m2m:cin": { "cs": 28, "ct": "1578567032433", "con": "{\"humil\":112.0,\"state\": \"OFF\"}", "ty": 4, "ri": "/cin-7d90fd3f721f6e909a", "lt": "1578567032433", "pi": "/vnpt/cnt-d8a03ec49b869105f", "cnf": "text/json", "rn": "cin-39f604ad843e1e16" } }</pre>
<p>Example with RCN=2</p>	<p>MQTT_API/CI/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /vnpt/ae_light_04/cont_temp95?rcn=2 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json;ty=4</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:cin": { "cnf": "text/json", "con": { "humil": 112, "state": "OFF" } } }</pre>

	<pre>} HTTP Response: 201 Created Content-Length:91 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2001 { "m2m:uri": "/vnpt/vnpt/ae_light_04/cont_temp05" }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/CI/CRE/001_RCN3</p> <p>HTTP Request:</p> <pre>POST /vnpt/ae_light_04/cont_temp05?rcn=3 HTTP/1.1 Host: https://api-iot.vnpt.vn/~vnpt X-M2M-Origin: [key được cấp] Content-Type: application/json;ty=4 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:cin": { "cnf": "text/json", "con": { "humi": 112, "state":"OFF" } } }</pre>


```
}  
}  
  
HTTP Response:  
  
201 Created  
Content-Length:356  
Content-Location:/mnID/cin20180406T1402131405855770682883_cse01  
Content-Type:application/json  
X-M2M-RI:1234  
X-M2M-RSC:2001  
  
{  
  "m2m:cin": {  
    "cs": 28,  
    "ct": "1578566883350",  
    "con": "{\"humil\":112.0,\"state\": \"OFF\"}",  
    "ty": 4,  
    "ri": "/cin-b8f89fb7170699c1",  
    "lt": "1578566883350",  
    "pi": "/vnpt/cnt-d8a03ec49b869105f",  
    "cnf": "text/json",  
    "rn": "cin-63f41fbe823849004"  
  },  
  "m2m:uri": "/vnpt/vnpt/ae_light_04/cont_temp05"  
}
```

Giao thức MQTT:

API Id	MQTT_API/CI/CRE/001 MQTT_API/CI/CRE/001_RCN0 MQTT_API/CI/CRE/001_RCN1 MQTT_API/CI/CRE/001_RCN2 MQTT_API/CI/CRE/001_RCN3
API Name	contentInstance CREATE via MQTT
Target Resource	<container> resource cha của <contentInstance> sẽ tạo
Description	API tạo <contentInstance> cho <container>
Resource Structure before Sending Request	 <pre> graph TD CSE[CSE-name (CSE)] --- AE[AE-name (AE)] AE --- Container[Container-name (container)] </pre>
Call Flow	 <pre> sequenceDiagram participant AE as AE Registree participant CSE as CSE-Name AE->>CSE: contentInstance create request CSE-->>AE: Response </pre>
	MQTT_API/CI/CRE/001_RCN/0



<p>Example with rcn=0</p>	<p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 1, "resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/cont_temp9", "resourceType": 4 "content": { "m2m:cin": { "cnf": "text/json", "con": { "humi": 112, "state": "OFF" } } } }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1578556086445" }</pre>
<p>Example with No RCN or RCN=1</p>	<p>MQTT API/CI/CRE/001</p> <p>MQTT API/CI/CRE/001_RCNI</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{</pre>

```
"from": "[key được cấp]",
"operation": 4,
"resultContent": 1,
"requestIdentifier": "12345",
"to": "/vnpt/vnpt/ae_light_04/cont_temp9",
"resourceType": 3
"content": {
  "m2m:cin": {
    "cnf": "text/json",
    "con": {
      "humi": 112,
      "state": "OFF"
    }
  }
}
}
}

MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json
MQTT Response Payload
{
  "responseStatusCode": 2001,
  "requestIdentifier": "12345",
  "originatingTimestamp": "1578556086445",
  "content": {
    "m2m:cin": {
      "cs": 28,
      "ct": "1578567268296",
      "con": "{\"humi\":112.0,\"state\": \"OFF\"}",
      "ty": 4,
      "ri": "/cin-978a01e17ee243183",
      "lt": "1578567268296",
      "pi": "/vnpt/cnt-d8a03ec49b869105f",
      "cnf": "text/json",
      "rn": "cin-b50573253747e4fe7"
    }
  }
}
```

	<pre>} }</pre>
<p>Example with RCN=2</p>	<p>MQTT API/CI/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 4, "resultContent": 2, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/cont_temp9", "resourceType": 3 "content": { "m2m:cin": { "cnf": "text/json", "con": { "humi": 112, "state": "OFF" } } } }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1578556086445", "content": { "m2m:uri": "/vnpt/vnpt/ae_light_04/cont_temp05" } }</pre>

Example
with
RCN=3

MQTT API/CI/CRE/001_RCN3

MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Request Payload

```
{  
  "from": "[key được cấp]",  
  "operation": 4,  
  "resultContent": 2,  
  "requestIdentifier": "12345",  
  "to": "/vnpt/vnpt/ae_light_04/cont_temp9",  
  "resourceType": 3  
  "content": {  
    "m2m:cin": {  
      "cnf": "text/json",  
      "con": {  
        "humi": 112,  
        "state":"OFF"  
      }  
    }  
  }  
}
```

MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Response Payload

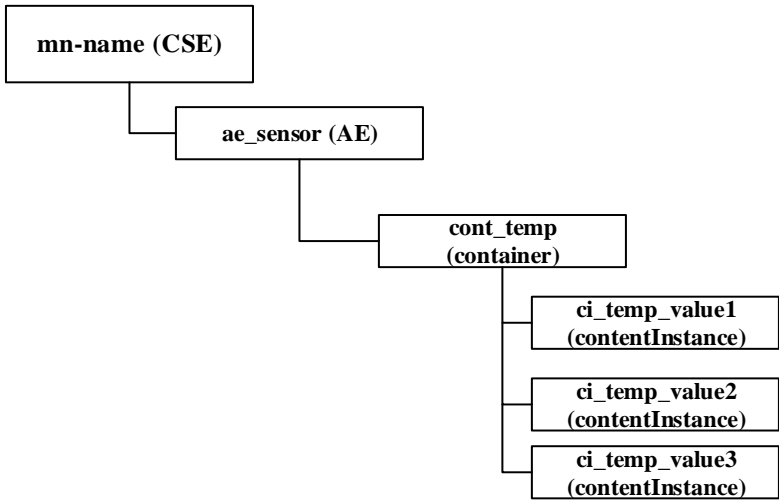
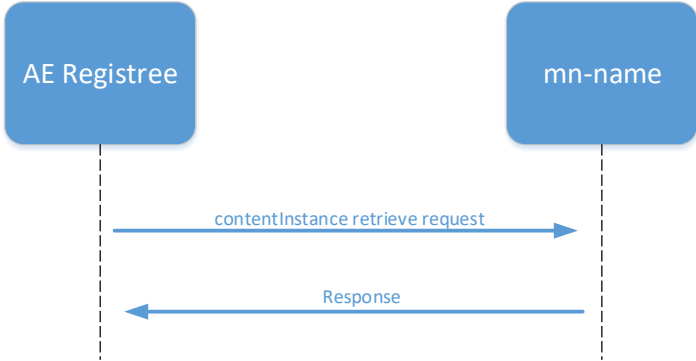
```
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1578556086445",  
  "content": {  
    {  
      "m2m:cin": {  
        "cs": 28,  
        "ct": "1578567390843",  
        "con": "{\"humi\":112.0,\"state\": \"OFF\"}",  
      }  
    }  
  }  
}
```



	<pre>"ty": 4, "ri": "/cin-e9a0204abfda7e60bc", "it": "1578567390843", "pi": "/vnpt/cnt-d8a03ec49b869105f", "cnf": "text/json", "rn": "cin-32abed63b8ba5fd05" }, "m2m:uri": "/vnpt/vnpt/ae_light_04/cont_temp05" } } }</pre>
--	---

Truy vấn <contentInstance> (AE retrieves information of a contentInstance resource via a contentInstance Retrieve Request)

Giao thức HTTP:

API Id	HTTP_API/CI/RET/001_LA HTTP_API/CI/RET/001_OL HTTP_API/CI/RET/001_CI
API Name	Latest , Oldest , contentInstance RETRIEVE via HTTP
Target Resource	<latest> , <oldest> hoặc <contentInstance> của <container>
Description	API cho phép truy vấn các resource type <contentInstance>, <latest> hoặc <oldest> đã tạo của <container> tại CSE.
Resource Structure before Sending Request	 <pre> graph TD mn_name[mn-name (CSE)] --- ae_sensor[ae_sensor (AE)] ae_sensor --- cont_temp[cont_temp (container)] cont_temp --- ci_temp_value1[ci_temp_value1 (contentInstance)] cont_temp --- ci_temp_value2[ci_temp_value2 (contentInstance)] cont_temp --- ci_temp_value3[ci_temp_value3 (contentInstance)] </pre>
Call Flow	 <pre> sequenceDiagram participant AE as AE Registry participant mn as mn-name AE->>mn: contentInstance retrieve request mn-->>AE: Response </pre>

<p>HTTP Header Information</p>	<table border="1" data-bbox="485 501 1270 763"> <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</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
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json										
<p>Example with latest</p>	<p>HTTP_API/CI/RET/001_LA</p> <p>HTTP Request:</p> <p>GET /vnpt/ae_light_04/cont_temp05/la HTTP/1.1</p> <p>Host: Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>X-M2M-RI: 1234</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Length:258</p> <p>Content-Type:application/json</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC:2000</p>										



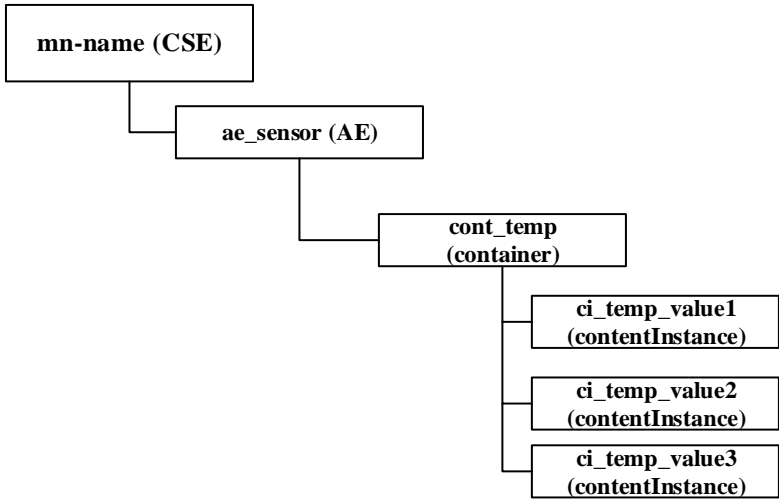
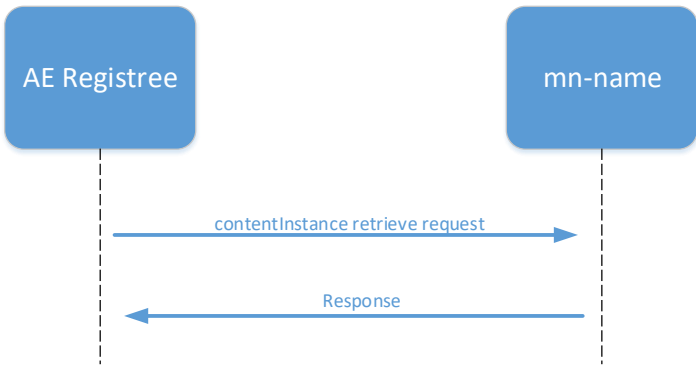
	<pre>{ "m2m:cin": { "cs": 28, "ct": "1578567390843", "con": "{\"humil\":\"112.0,\"state\":\"OFF\"}", "ty": 4, "ri": "/cin-e9a0204abfda7e60bc", "lt": "1578567390843", "pi": "/vnpt/cnt-d8a03ec49b869105f", "cnf": "text/json", "rn": "cin-32abed63b8ba5fd05" } }</pre>
<p>Example with oldest</p>	<p>HTTP_API/CI/RET/001_OL</p> <p>HTTP Request:</p> <p>GET /vnpt/ae_light_04/cont_temp05/ol HTTP/1.1 Host: Host: https://api-iot.vnpt.vn/~vnpt X-M2M-Origin: [key được cấp] X-M2M-RI: 1234</p> <p>HTTP Response:</p> <p>200 OK Content-Length:258 Content-Type:application/json X-M2M-RI:1234 X-M2M-RSC:2000</p>

	<pre>{ "m2m:cin": { "cs": 34, "ct": "1578566839264", "con": "{\"humil\":112.0,\"state\": \"good bye3\"}", "ty": 4, "ri": "/cin-600a1fd1181240773", "lt": "1578566839264", "pi": "/vnpt/cnt-d8a03ec49b869105f", "cnf": "text/json", "rn": "cin-5419070acbce155a34" } }</pre>
<p>Example with CI name</p>	<p>HTTP_API/CI/RET/001_CI</p> <p>HTTP Request:</p> <pre>GET /vnpt/ae_light_04/cont_temp05/cin-32abed63b8ba5fd05 HTTP/1.1 Host: Host: https://api-iot.vnpt.vn/~vnpt X-M2M-Origin: [key được cấp] X-M2M-RI: 1234</pre> <p>HTTP Response:</p> <pre>200 OK Content-Length:258 Content-Type:application/json X-M2M-RI:1234 X-M2M-RSC:2000 { "m2m:cin": {</pre>



	<pre>"cs": 28, "ct": "1578567390843", "con": "{\"humil\":112.0,\"state\": \"OFF\"}", "ty": 4, "ri": "/cin-e9a0204abfda7e60bc", "lt": "1578567390843", "pi": "/vnpt/cnt-d8a03ec49b869105f", "cnf": "text/json", "rn": "cin-32abed63b8ba5fd05" } }</pre>
--	--

Giao thức MQTT:

API Id	MQTT_API/CI/RET/001_LA MQTT_API/CI/RET/001_OL MQTT_API/CI/RET/001_CI
API Name	Latest , Oldest , contentInstance RETRIEVE via MQTT
Target Resource	<latest> , <oldest> hoặc <contentInstance> của <container>
Description	API cho phép truy vấn các resource type <contentInstance>, <latest> hoặc <oldest> đã tạo của <container> tại CSE.
Resource Structure before Sending Request	 <pre> graph TD mn_name["mn-name (CSE)"] --- ae_sensor["ae_sensor (AE)"] ae_sensor --- cont_temp["cont_temp (container)"] cont_temp --- ci_temp_value1["ci_temp_value1 (contentInstance)"] cont_temp --- ci_temp_value2["ci_temp_value2 (contentInstance)"] cont_temp --- ci_temp_value3["ci_temp_value3 (contentInstance)"] </pre>
Call Flow	 <pre> sequenceDiagram participant AE as AE Registree participant mn as mn-name AE->>mn: contentInstance retrieve request mn-->>AE: Response </pre>

Example
with
latest

MQTT_API/CI/RET/001_LA

MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Request Payload

```
{  
  "from": "[key được cấp]",  
  "operation": 2,  
  "resultContent": 1,  
  "requestIdentifier": "12345",  
  "to": "/vnpt/vnpt/ae_light_04/cont_temp05/la",  
  "resourceType": 4  
}
```

MQTT Request Topic: /oneM2M/resp[key được cấp]/json

MQTT Request Payload

```
{  
  "responseStatusCode": 2000,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1578889070131",  
  "content": {  
    "m2m:cin": {  
      "cs": 28.0,  
      "ct": "1578567390843",  
      "con": "{\"humil\":112.0,\"state\": \"OFF\"}",  
      "ty": 4.0,  
      "ri": "/cin-e9a0204abfda7e60bc",  
      "it": "1578567390843",  
      "pi": "/vnpt/cnt-d8a03ec49b869105f",  
      "cnf": "text/json",  
      "rn": "cin-32abed63b8ba5fd05"  
    }  
  }  
}
```

	<pre>} }</pre>
<p>Example with oldest</p>	<p>MQTT_API/CI/RET/001_OL</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 2, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/cont_temp05/ol", "resourceType": 4 }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12345", "originatingTimestamp": "1578889973881", "content": { "m2m:cin": { "cs": 34.0, "ct": "1578566839264", "con": "{\"humil\":112.0,\"state\": \"good bye3\"}", "ty": 4.0, "ri": "/cin-600a1fd1181240773", "lt": "1578566839264", "pi": "/vnpt/cnt-d8a03ec49b869105f",</pre>



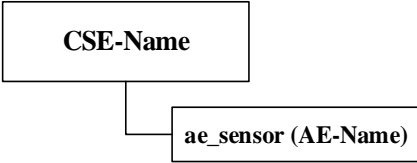
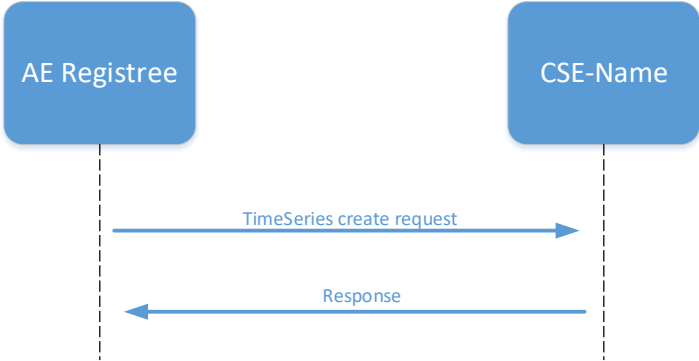
	<pre>"cnf": "text/json", "rn": "cin-5419070acbce155a34" } } }</pre>
<p>Example with CI name</p>	<p>MQTT_API/CI/RET/001_CI</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 2, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/cont_temp05/cin-32abed63b8ba5fd05", "resourceType": 4 }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12345", "originatingTimestamp": "1578889973881", "content": { "m2m:cin": { "cs": 34.0, "ct": "1578566839264", "con": "{\"humil\":112.0,\"state\": \"good bye3\"}", "ty": 4.0, "ri": "/cin-600a1fd1181240773",</pre>



```
"lt": "1578566839264",  
"pi": "/vnpt/cnt-d8a03ec49b869105f",  
"cnf": "text/json",  
"rn": "cin-5419070acbce155a34"  
}  
}  
}
```

Tạo resource type Time Series để có thể lưu trữ dữ liệu thiết bị theo chuỗi thời gian (AE creates a <timeSeries> resource in registrar CSE via a Create Request)

Giao thức HTTP:

API Id	HTTP_API/TS/CRE/001 HTTP_API/TS/CRE/001_RCNO HTTP_API/TS/CRE/001_RCN1 HTTP_API/TS/CRE/001_RCN2 HTTP_API/TS/CRE/001_RCN3
API Name	timeSeries CREATE
Target Resource	<AE> tạo resource con <timeSeries>.
Description	API cho phép yêu cầu tạo resource type < timeSeries > con của resource cha là <AE> , quản lý bởi <CSEBase>.
Resource Structure before Sending Request	
Call Flow	

<p>HTTP Header Information</p>	<table border="1" data-bbox="485 394 1270 607"> <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> </tbody> </table>	Header	Value	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator	Content-Type	application/ json; ty= 29
Header	Value								
X-M2M-RI	Request ID								
X-M2M-Origin	AE-ID of request originator								
Content-Type	application/ json; ty= 29								
<p>Example with No RCN or RCN=1</p>	<p>HTTP_API/TS/CRE/001</p> <p>HTTP_API/TS/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /icc/ae_light_04?rcn=1 HTTP/1.1</p> <p>Host: http://localhost:9999/~/~vnpt</p> <p>X-M2M-Origin: Cba6c0e0f0a872695</p> <p>Content-Type: application/json;ty=29</p> <p>X-M2M-RI: 1234</p> <pre data-bbox="357 1552 810 2016"> { "m2m:ts" : { "rn": "ts1", "pei":1, "mdd":true, "mdt":1, "lbl": ["timeSeries_label"] } } </pre>								

HTTP Response:

201 Created

Content-Length:265

Content-Location:/mnID/cnt20180406T0857121405855183193600_cse01

Content-Type:application/json

X-M2M-RI:1234

X-M2M-RSC:2001

```
{
  "m2m:ts": {
    "ct": "20200812T173816",
    "pei": 1,
    "ty": 29,
    "ri": "/vnpt/ts-c9c0900efec4c4843",
    "lbl": [
      "timeSeries_label"
    ],
    "it": "20200812T173816",
    "mni": 9223372036854775807,
    "pi": "/vnpt/CAE7f968d26b3f62ea0d",
    "mdd": true,
    "mdt": 1,
    "rn": "ts1",
    "mbs": 9223372036854775807
  }
}
```

HTTP_API/TS/CRE/001_RCN/0

HTTP Request:

POST /icc/ae_test_sub_by_ha_01?rcn=0 HTTP/1.1

Example



<p>with RCN=0</p>	<p>Host: http://localhost:9999/~vnpt</p> <p>X-M2M-Origin: /Cba6c0e0f0a872695</p> <p>Content-Type: application/json;ty=29</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:ts" : { "pei":1, "mdd":true, "mdt":1, "lbl": ["timeSeries_label"] } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Length:0</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p>
<p>Example with RCN=2</p>	<p>API/CONT/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /icc/ae_test_sub_by_ha_01?rcn=2 HTTP/1.1</p> <p>Host: http://localhost:9999/~vnpt</p> <p>X-M2M-Origin: /Cba6c0e0f0a872695</p> <p>Content-Type: application/json;ty=29</p> <p>X-M2M-RI: 1234</p>

	<p>X-M2M-RVI: 2a</p> <pre>{ "m2m:ts" : { "pei":1, "mdd":true, "mdt":1, "lbl": ["timeSeries_label"] } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Length:50 Content-Type:application/json X-M2M-RI:1234 X-M2M-RSC:2001</p> <pre>{ "m2m:uri": "/vnpt/icc/ae_test_sub_by_ha_01/ts_b2acb870bb13703d47" }</pre>
<p>Example with RCN=3</p>	<p>API/CONT/CRE/001_RCN3</p> <p>HTTP Request:</p> <p>POST /icc/ae_test_sub_by_ha_01?rcn=3 HTTP/1.1 Host: http://localhost:9999/~/~vnpt X-M2M-Origin: /Cba6c0e0f0a872695 Content-Type: application/json;ty=29 X-M2M-RI: 1234</p>

```
{  
  "m2m:ts" : {  
    "pei":1,  
    "mdd":true,  
    "mdt":1,  
    "lbl": ["timeSeries_label"]  
  }  
}
```

HTTP Response:

201 Created
Content-Length:322
Content-Type:application/json
X-M2M-RI:1234
X-M2M-RVI: 2a
X-M2M-RSC:2001

```
{  
  "m2m:ts": {  
    "ct": "20200812T174147",  
    "pei": 1,  
    "ty": 29,  
    "ri": "/vnpt/ts-efe4264c49c65eb0",  
    "lbl": [  
      "timeSeries_label"  
    ],  
    "it": "20200812T174147",  
    "mni": 9223372036854775807,  
    "pi": "/vnpt/CAE7f968d26b3f62ea0d",  
    "mdd": true,  
    "mdt": 1,  
    "rn": "ts_2675cf1b52443c9e",
```



	<pre>"mbs": 9223372036854775807 }, "m2m:uri": "/vnpt/icc/ae_test_sub_by_ha_01/ts_2675cf1b52443c9e" }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/TS/CRE/001 MQTT_API/TS/CRE/001_RCN0 MQTT_API/TS/CRE/001_RCN1 MQTT_API/TS/CRE/001_RCN2 MQTT_API/TS/CRE/001_RCN3
API Name	timeSeries CREATE via MQTT
Target Resource	Resource type <AE>
Description	API tạo resource type timeSeries cho resource cha là AE
Resource Structure before Sending Request	<pre> graph TD CSE[CSE-name (CSE)] --- AE[AE-name (AE)] </pre>
	MQTT_API/TS/CRE/001 MQTT_API/TS/CRE/001_RCN/1



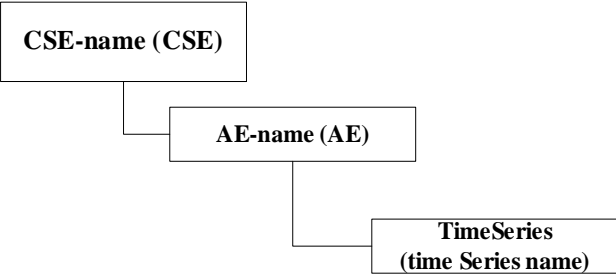
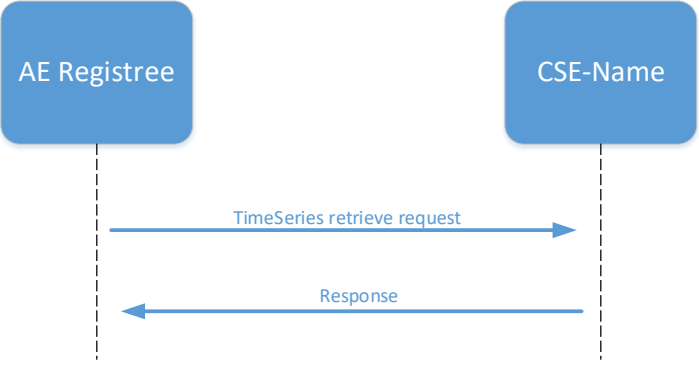
<p>Example with No RCN or RCN=1</p>	<p>MQTT Request Topic: /oneM2M/req/CAE00101010101/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "fr": "/SuperTester", "op": 1, "pc": { "m2m:ts": { "pei": 1, "mdd": true, "mdt": 1, "lbl": ["timeSeries_label"] } }, "rcn": 1, "rqi": "12312414", "to": "/icc/ae_test_sub_by_ha_01", "ty": 29 }</pre> <p>MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Response Payload</p> <pre>{ "rsc": 2001, "rqi": "12312414", "pc": { "m2m:ts": { "ct": "20200813T084837", "pei": 1, "ty": 29, "ri": "/vnpt/ts-9726db19b7061fd9", "lbl": ["timeSeries_label"], "lt": "20200813T084837", </pre>
--	--



	<pre>"mni": 9223372036854775807, "pi": "/vnpt/CAE7f968d26b3f62ea0d", "mdd": true, "mdt": 1, "rn": "ts_a35e53020ffcfc04d", "mbs": 9223372036854775807 } , "ot": "1597283317622" }</pre>
--	--

Truy vấn resource type Time Series (AE retrieves information of a <timeSeries> resource via a Retrieve Request)

Giao thức HTTP:

API Id	HTTP_API/TS/RET/001 HTTP_API/TS/RET/001_RCN1				
API Name	timeSeries RETRIEVE via HTTP				
Target Resource	Resource type <timeSeries>				
Description	API truy vấn thông tin resource type timeSeries đã tạo ở CSE.				
Resource Structure before Sending Request					
Call Flow					
	<table border="1" data-bbox="485 1933 1270 2040"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/ json</td> </tr> </tbody> </table>	Header	Value	Accept	application/ json
Header	Value				
Accept	application/ json				

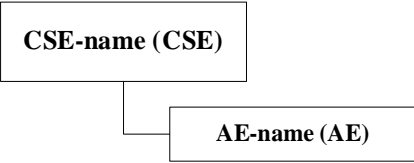


HTTP Header Information	<table border="1"><tr><td>X-M2M-RI</td><td>Request ID</td></tr><tr><td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr><tr><td>Content-Type</td><td>application/json</td></tr></table>	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json
X-M2M-RI	Request ID						
X-M2M-Origin	AE-ID of request originator						
Content-Type	application/json						
Example with No RCN or RCN=1	<p>HTTP_API/TS/RET/001 HTTP_API/TS/RET/001_RCN/1</p> <p>HTTP Request:</p> <p>GET /icc/ae_light_04/tsi_1714a28a172100c0d4?rcn=1 HTTP/1.1 Host: http://localhost:9999/~vnpt X-M2M-Origin: /Cba6c0e0f0a872695 Accept: application/json X-M2M-RI: 12345</p> <p>HTTP Response:</p> <p>200 OK Content-Length:265 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2000</p> <pre>{ "m2m:ts": {</pre>						



	<pre>"ct": "20200813T084837", "pei": 1, "ty": 29, "ri": "/vnpt/ts-9726db19b7061fd9", "lbl": ["timeSeries_label"], "lt": "20200813T084837", "mni": 9223372036854775807, "pi": "/vnpt/CAE7f968d26b3f62ea0d", "mdd": true, "mdt": 1, "rn": "ts_a35e53020ffcfc04d", "mbs": 9223372036854775807 } }</pre>
--	--

Giao thức MQTT:

API Id	MQTT_API/TS/CRE/001 MQTT_API/TS/CRE/001_RCN0 MQTT_API/TS/CRE/001_RCN1 MQTT_API/TS/CRE/001_RCN2 MQTT_API/TS/CRE/001_RCN3
API Name	timeSeries RETRIEVE via MQTT
Target Resource	Resource type <AE>
Description	API truy vấn resource type timeSeries
Resource Structure before Sending Request	 <pre> graph TD CSE[CSE-name (CSE)] --- AE[AE-name (AE)] </pre>
Example with No RCN or RCN=1	<p>MQTT_API/TS/CRE/001</p> <p>MQTT_API/TS/CRE/001_RCN/1</p> <p>MQTT Request Topic: /oneM2M/req/CAE00101010101/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "fr": "/SuperTester", "op": 2, "rcn": 1, "rqi": "12312414", </pre>

```
"to": "/icc/ae_test_sub_by_ha_01/ts_a35e53020ffcf04d",
"ty": 29
}

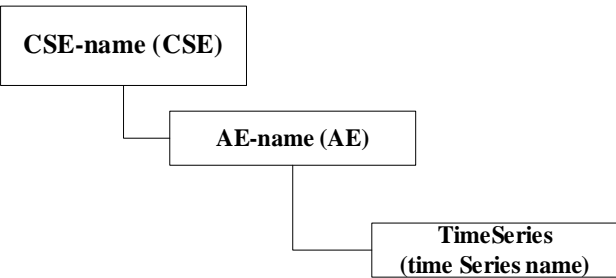
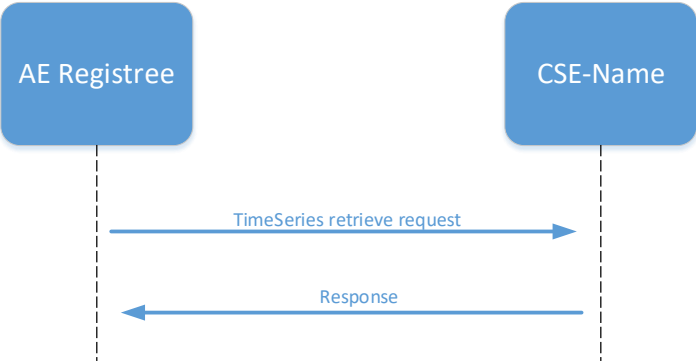
MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json
MQTT Response Payload

{
  "rsc": 2000,
  "rqi": "12312414",
  "pc": {
    "m2m:ts": {
      "ct": "20200813T084837",
      "pei": 1,
      "ty": 29,
      "ri": "/vnpt/ts-9726db19b7061fd9",
      "lbl": ["timeSeries_label"],
      "lt": "20200813T084837",
      "mni": 9223372036854775807,
      "pi": "/vnpt/CAE7f968d26b3f62ea0d",
      "mdd": true,
      "mdt": 1,
      "rn": "ts_a35e53020ffcf04d",
      "mbs": 9223372036854775807
    }
  },
  "ot": "1597287018853"
}
```

Sửa resource type Time Series (AE updates attribute in <timeSeries> resource via a Update Request)



Giao thức HTTP:

API Id	HTTP_API/TS/UDP/001 HTTP_API/TS/UDP/001_RCNI				
API Name	timeSeries DELETE via HTTP				
Target Resource	Resource type <timeSeries>				
Description	API sửa resource type timeSeries đã tạo ở CSE.				
Resource Structure before Sending Request					
Call Flow					
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="background-color: #ADD8E6;">Header</th> <th style="background-color: #ADD8E6;">Value</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> </tbody> </table>	Header	Value		
Header	Value				



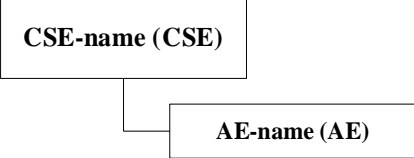
HTTP Header Information	Accept	application/ json
	X-M2M-RI	Request ID
	X-M2M-Origin	AE-ID of request originator
	Content-Type	application/json
Example with No RCN or RCN=1	HTTP_API/TS/RET/001	
	HTTP_API/TS/RET/001_RCN/1	
	HTTP Request:	
	PUT /icc/ae_test_sub_by_ha_01/ts_a35e53020ffcfc04d?rcn=1 HTTP/1.1	
	Host: http://localhost:9999/~vnpt	
	X-M2M-Origin: /Cba6c0e0f0a872695	
	Accept: application/json	
	X-M2M-RI: 12345	
	HTTP Response:	
	200 OK	
	Content-Length:265	
	Content-Type:application/json	
	X-M2M-RI:1234	
	X-M2M-RVI: 2a	
	X-M2M-RSC:2004	
	{	



```
"m2m:ts": {  
  "ct": "20200813T084837",  
  "pei": 1,  
  "ty": 29,  
  "ri": "/vnpt/ts-9726db19b7061fd9",  
  "lbl": [  
    "timeSeries_label",  
    "heartbeat1"  
  ],  
  "lt": "1597289710578",  
  "mni": 9999,  
  "pi": "/vnpt/CAE7f968d26b3f62ea0d",  
  "mdd": true,  
  "mdt": 3,  
  "rn": "ts_a35e53020ffcfc04d",  
  "mbs": 9223372036854775807  
}
```



Giao thức MQTT:

API Id	MQTT_API/TS/UDP/001 MQTT_API/TS/UDP/001_RCN0 MQTT_API/TS/UDP/001_RCN1 MQTT_API/TS/UDP/001_RCN2 MQTT_API/TS/UDP/001_RCN3
API Name	timeSeries UPDATE via MQTT
Target Resource	Resource type <AE>
Description	API cập nhật resource type timeSeries
Resource Structure before Sending Request	 <pre> graph TD CSE[CSE-name (CSE)] --- AE[AE-name (AE)] </pre>
Example with No RCN or RCN=1	<p>MQTT_API/TS/CRE/001</p> <p>MQTT_API/TS/CRE/001_RCN/1</p> <p>MQTT Request Topic: /oneM2M/req/CAE00101010101/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "fr": "/SuperTester", "op": 3, "pc": { </pre>

```
"m2m:ts": {
  "mni": 9999,
  "lbl": ["timeSeries_label_changed"]
}
},
"rcn": 1,
"rqj": "12312414",
"to": "/icc/ae_test_sub_by_ha_01/ts_a35e53020ffcfc04d",
"ty": 29
}
MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json
MQTT Response Payload

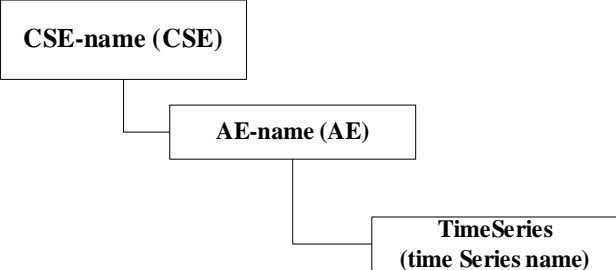
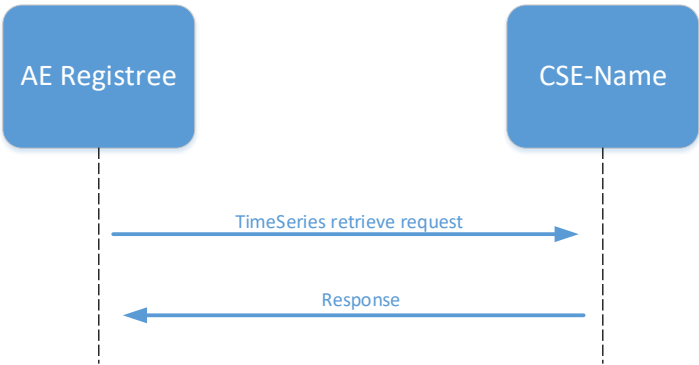
{
  "rsc": 2004,
  "rqj": "12312414",
  "pc": {
    "m2m:ts": {
      "ct": "20200813T084837",
      "pei": 1,
      "ty": 29,
      "ri": "/vnpt/ts-9726db19b7061fd9",
      "lbl": ["timeSeries_label_changed"],
      "lt": "1597287462918",
      "mni": 9999,
      "pi": "/vnpt/CAE7f968d26b3f62ea0d",
      "mdd": true,
      "mdt": 1,
      "rn": "ts_a35e53020ffcfc04d",
      "mbs": 9223372036854775807
    }
  },
  "ot": "1597287462914"
}
```



**TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
CÔNG TY CÔNG NGHỆ THÔNG TIN VNPT**

Xóa resource type Time Series (AE deletes a <timeSeries> resource via a Delete Request)

Giao thức HTTP:

API Id	HTTP_API/TS/DEL/001 HTTP_API/TS/DEL/001_RCNI
API Name	timeSeries UPDATE via HTTP
Target Resource	Resource type <timeSeries>
Description	API xóa resource type timeSeries đã tạo ở CSE.
Resource Structure before Sending Request	 <p>The diagram shows a hierarchical structure of resource identifiers. At the top level is a box labeled 'CSE-name (CSE)'. A line connects it to a box labeled 'AE-name (AE)' below it. Another line connects 'AE-name (AE)' to a box labeled 'TimeSeries (time Series name)' at the bottom level.</p>
Call Flow	 <p>The call flow diagram shows two entities: 'AE Registree' and 'CSE-Name', each represented by a blue rounded rectangle. Vertical dashed lines extend downwards from each entity. A blue arrow points from 'AE Registree' to 'CSE-Name' with the label 'TimeSeries retrieve request'. A second blue arrow points from 'CSE-Name' back to 'AE Registree' with the label 'Response'.</p>

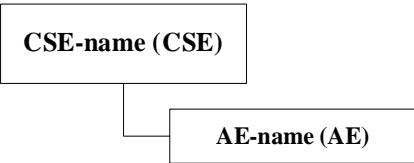
<p>HTTP Header Information</p>	<table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/ json</td> </tr> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</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
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json										
<p>Example with No RCN or RCN=1</p>	<p>HTTP_API/TS/RET/001 HTTP_API/TS/RET/001_RCN/1</p> <p>HTTP Request:</p> <p>DELETE /icc/ae_test_sub_by_ha_01/ts_a35e53020ffcfc04d?rcn=1 HTTP/1.1 Host: http://localhost:9999/~/~vnpt X-M2M-Origin: /Cba6c0e0f0a872695 Accept: application/json X-M2M-RI: 12345</p> <p>HTTP Response:</p> <p>200 OK Content-Length:265 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2002</p>										



```
{
  "m2m:ts": {
    "ct": "20200813T084837",
    "pei": 1,
    "ty": 29,
    "ri": "/vnpt/ts-9726db19b7061fd9",
    "lbl": [
      "timeSeries_label",
      "heartbeat1"
    ],
    "it": "1597289710578",
    "mni": 9999,
    "pi": "/vnpt/CAE7f968d26b3f62ea0d",
    "mdd": true,
    "mdt": 3,
    "rn": "ts_a35e53020ffcfc04d",
    "mbs": 9223372036854775807
  }
}
```




Giao thức MQTT:

API Id	MQTT_API/TS/UDP/001 MQTT_API/TS/UDP/001_RCN0 MQTT_API/TS/UDP/001_RCN1 MQTT_API/TS/UDP/001_RCN2 MQTT_API/TS/UDP/001_RCN3
API Name	timeSeries UPDATE via MQTT
Target Resource	Resource type <AE>
Description	API cập nhật resource type timeSeries
Resource Structure before Sending Request	 <pre> graph TD CSE[CSE-name (CSE)] --- AE[AE-name (AE)] </pre>
Example with No RCN or RCN=1	<p>MQTT_API/TS/CRE/001</p> <p>MQTT_API/TS/CRE/001_RCN/1</p> <p>MQTT Request Topic: /oneM2M/req/CAE00101010101/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "fr": "/SuperTester", "op": 4, "rcn": 1, </pre>

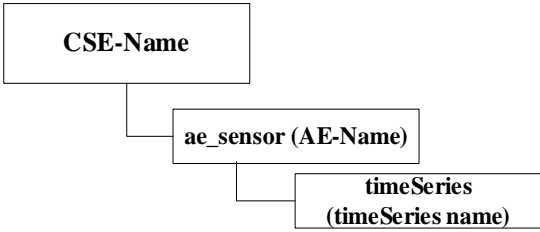
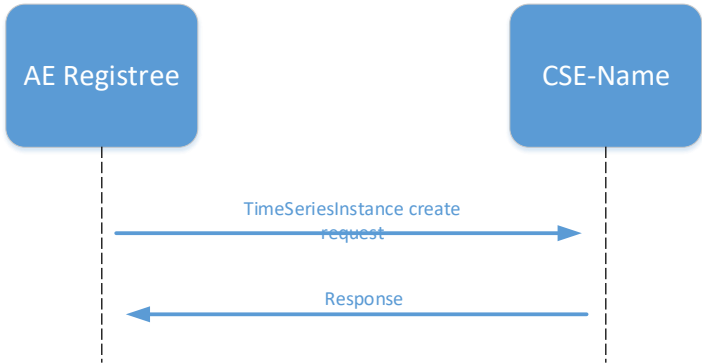
	<pre> "rqj": "12312414", "to": "/icc/ae_test_sub_by_ha_01/ts_a35e53020ffcf04d", "ty": 29 } MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json MQTT Response Payload { "rsc": 2002, "rqj": "12312414", "pc": { "m2m:ts": { "ct": "20200813T084837", "pei": 1, "ty": 29, "ri": "/vnpt/ts-9726db19b7061fd9", "lbl": ["timeSeries_label", "heartbeat1"], "it": "1597289710578", "mni": 9999, "pi": "/vnpt/CAE7f968d26b3f62ea0d", "md": true, "mdt": 3, "rn": "ts_a35e53020ffcf04d", "mbs": 9223372036854775807 } }, "ot": "1597290507135" } </pre>
--	---

Tạo resource TimeSeriesInstance (AE sends Create Request of a <timeSeriesInstance> resource to a <timeSeries> resource in Registrar CSE. Registrar CSE creates the <timeSeriesInstance> resource and updates the



parent <timeSeries> resource with *currentNrOfInstances* and *currentByteSize* attributes correspondingly)

Giao thức HTTP:

API Id	HTTP_API/TSI/CRE/001 HTTP_API/TSI/CRE/001_RCN0 HTTP_API/TSI/CRE/001_RCN1 HTTP_API/TSI/CRE/001_RCN2 HTTP_API/TSI/CRE/001_RCN3
API Name	timeSeries CREATE
Target Resource	<AE> tạo resource type <timeSeriesInstance> cho <timeSeries>
Description	API tạo resource type <timeSeriesInstance> cho <timeSeries> tương ứng đồng thời cập nhật thuộc tính cho <timeSeries>
Resource Structure before Sending Request	 <p>The diagram shows a hierarchical structure of resource identifiers. At the top is a box labeled 'CSE-Name'. A line connects it to a box below labeled 'ae_sensor (AE-Name)'. Another line connects that to a final box at the bottom labeled 'timeSeries (timeSeries name)'.</p>
Call Flow	 <p>The call flow diagram shows two entities: 'AE Registree' and 'CSE-Name', each represented by a blue rounded rectangle. Vertical dashed lines extend downwards from each. A blue arrow points from the 'AE Registree' line to the 'CSE-Name' line, labeled 'TimeSeriesInstance create request'. A second blue arrow points from the 'CSE-Name' line back to the 'AE Registree' line, labeled 'Response'.</p>

<p>HTTP Header Information</p>	<table border="1" data-bbox="485 344 1270 555"> <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> </tbody> </table>	Header	Value	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator	Content-Type	application/ json; ty= 29
Header	Value								
X-M2M-RI	Request ID								
X-M2M-Origin	AE-ID of request originator								
Content-Type	application/ json; ty= 29								
<p>Example with No RCN or RCN=1</p>	<p>HTTP_API/TS/CRE/001 HTTP_API/TS/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /icc/ae_test_sub_by_ha_01/ts_402579c0b71d80844?rcn=1 HTTP/1.1</p> <p>Host: http://localhost:9999/~vnpt</p> <p>X-M2M-Origin: Cba6c0e0f0a872695</p> <p>Content-Type: application/json;ty=30</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:tsi" : { "dgt": "1597291562", "con":{ "temp":301 } } }</pre> <p>HTTP Response:</p> <p>201 Created</p>								

	<pre> Content-Length:265 Content-Location:/mnID/cnt20180406T0857121405855183193600_cse01 Content-Type:application/json X-M2M-RI:1234 X-M2M-RSC:2001 { "m2m:tsi": { "dgt": "1597291562", "ct": "20200813T110118", "con": { "temp": 301 }, "ty": 30, "ri": "/vnpt/tsi-6063f806b5fd0c0346c", "lt": "20200813T110118", "pi": "/vnpt/ts-0080ab0c709069887a", "rn": "tsi_a3d8500d56d672481" } } </pre>
<p>Example with RCN=0</p>	<p>HTTP_API/TS/CRE/001_RCN/0</p> <p>HTTP Request:</p> <pre> POST /icc/ ae_test_sub_by_ha_01/ts_402579c0b71d80844?rcn=0 HTTP/1.1 Host: http://localhost:9999/~vnpt X-M2M-Origin: /Cba6c0e0f0a872695 Content-Type: application/json;ty=29 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:tsi" : { </pre>

	<pre>"dgt": "1597291562", "con":{ "temp":301 } } } } HTTP Response: 201 Created Content-Length:0 X-M2M-RI:1234 X-M2M-RSC:2001</pre>
<p>Example with RCN=2</p>	<p>API/CONT/CRE/001_RCN2</p> <p>HTTP Request:</p> <pre>POST /icc/ae_test_sub_by_ha_01/ts_402579c0b71d80844?rcn=2 HTTP/1.1 Host: http://localhost:9999/~vnpt X-M2M-Origin: /Cba6c0e0f0a872695 Content-Type: application/json;ty=29 X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:tsi" : { "dgt": "1597291562", "con":{ "temp":301 } } }</pre>

	<p>HTTP Response:</p> <p>201 Created</p> <p>Content-Length:50</p> <p>Content-Type:application/json</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RSC:2001</p> <pre>{ "m2m:uri": "/vnpt/icc/ae_test_sub_by_ha_01/ts_b2acb870bb13703d47" }</pre>
<p>Example with RCN=3</p>	<p>API/CONT/CRE/001_RCN3</p> <p>HTTP Request:</p> <p>POST /icc/ae_test_sub_by_ha_01/ts_402579c0b71d80844?rcn=3 HTTP/1.1</p> <p>Host: http://localhost:9999/~/~vnpt</p> <p>X-M2M-Origin: /Cba6c0e0f0a872695</p> <p>Content-Type: application/json;ty=30</p> <p>X-M2M-RI: 1234</p> <pre>{ "m2m:tsi" : { "dgt": "1597291562", "con":{ "temp":301 } } }</pre> <p>HTTP Response:</p>

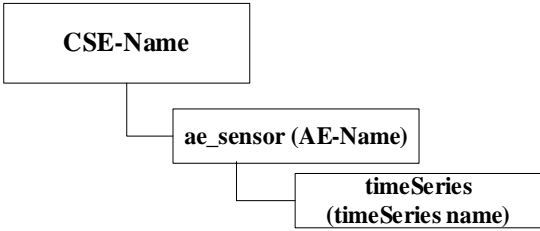


```
201 Created
Content-Length:322
Content-Type:application/json
X-M2M-RI:1234
X-M2M-RVI: 2a
X-M2M-RSC:2001

{
  "m2m:ts": {
    "ct": "20200812T174147",
    "pei": 1,
    "ty": 29,
    "ri": "/vnpt/ts-efe4264c49c65eb0",
    "lbl": [
      "timeSeries_label"
    ],
    "lt": "20200812T174147",
    "mni": 9223372036854775807,
    "pi": "/vnpt/CAE7f968d26b3f62ea0d",
    "mdd": true,
    "mdt": 1,
    "rn": "ts_2675cf1b52443c9e",
    "mbs": 9223372036854775807
  },
  "m2m:uri": "/vnpt/icc/ae_test_sub_by_ha_01/ts_2675cf1b52443c9e"
}
```

Giao thức MQTT:



API Id	MQTT_API/TSI/CRE/001 MQTT_API/TSI/CRE/001_RCN0 MQTT_API/TSI/CRE/001_RCN1 MQTT_API/TSI/CRE/001_RCN2 MQTT_API/TSI/CRE/001_RCN3
API Name	timeSeries CREATE via MQTT
Target Resource	Resource type <AE>
Description	API tạo resource type timeSeries cho resource cha là AE
Resource Structure before Sending Request	 <pre> graph TD CSE-Name --> ae_sensor["ae_sensor (AE-Name)"] ae_sensor --> timeSeries["timeSeries (timeSeries name)"] </pre>
Example with No RCN or RCN=1	<p>MQTT_API/TSI/CRE/001 MQTT_API/TSI/CRE/001_RCN/1</p> <p>MQTT Request Topic: /oneM2M/req/CAE00101010101/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "fr": "/SuperTester", "op": 1, "pc": { </pre>

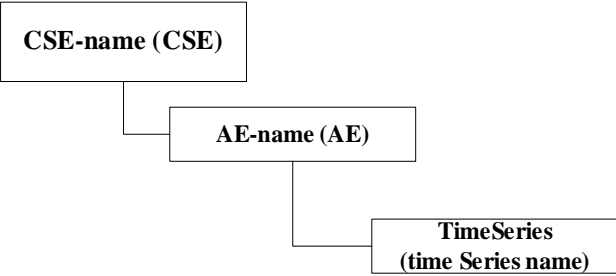
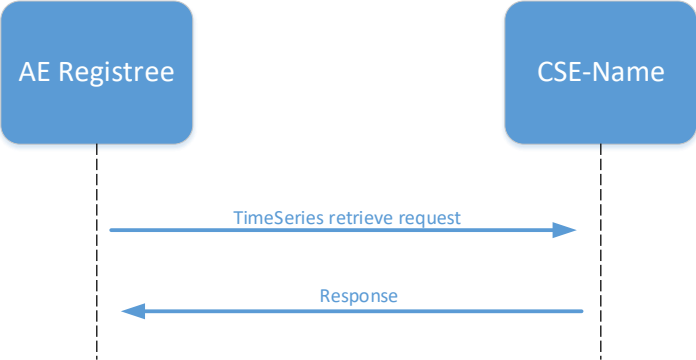
```
"m2m:tsi": {  
  "dgt": "1597291562",  
  "con": {  
    "temp": 301  
  }  
},  
"rcn": 1,  
"rqi": "12312414",  
"to": "/icc/ae_test_sub_by_ha_01/ts_402579c0b71d80844",  
"ty": 30  
}  
MQTT Response Topic: /oneM2M/resp/vnpt/CAE00101010101/json  
MQTT Response Payload  
  
{  
  "rsc": 2001,  
  "rqi": "12312414",  
  "pc": {  
    "m2m:tsi": {  
      "dgt": "1597291562",  
      "ct": "20200813T111050",  
      "con": {  
        "temp": 301  
      },  
      "ty": 30,  
      "ri": "/vnpt/tsi-8b0aefc0ac29edd8",  
      "lt": "20200813T111050",  
      "pi": "/vnpt/ts-0080ab0c709069887a",  
      "rn": "tsi_1714a28a172100c0d4"  
    }  
  },  
  "ot": "1597291850663"
```



	}
--	---

Truy vấn resource TimeSeriesInstance (AE retrieves information of a <timeSeriesInstance> resource via a Retrieve Request)

Giao thức HTTP:

API Id	HTTP_API/TS/RET/001 HTTP_API/TS/RET/001_RCN1				
API Name	timeSeries RETRIEVE via HTTP				
Target Resource	Resource type <timeSeries>				
Description	API truy vấn thông tin resource type timeSeries đã tạo ở CSE.				
Resource Structure before Sending Request	 <p>The diagram shows a hierarchical structure of resource identifiers. At the top is a box labeled 'CSE-name (CSE)'. A line connects it to a box below labeled 'AE-name (AE)'. Another line connects 'AE-name (AE)' to a box at the bottom labeled 'TimeSeries (time Series name)'.</p>				
Call Flow	 <p>The call flow diagram shows two entities: 'AE Registree' and 'CSE-Name'. A dashed vertical line extends from 'AE Registree' down to a horizontal line. A blue arrow labeled 'TimeSeries retrieve request' points from this line to a dashed vertical line extending from 'CSE-Name'. A second blue arrow labeled 'Response' points from the 'CSE-Name' line back to the horizontal line.</p>				
	<table border="1" data-bbox="485 1933 1270 2040"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/ json</td> </tr> </tbody> </table>	Header	Value	Accept	application/ json
Header	Value				
Accept	application/ json				



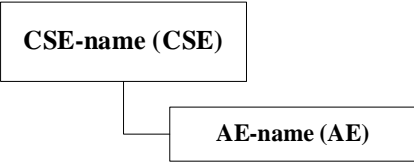
HTTP Header Information	<table border="1"><tr><td>X-M2M-RI</td><td>Request ID</td></tr><tr><td>X-M2M-Origin</td><td>AE-ID of request originator</td></tr><tr><td>Content-Type</td><td>application/json</td></tr></table>	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json
X-M2M-RI	Request ID						
X-M2M-Origin	AE-ID of request originator						
Content-Type	application/json						
Example with No RCN or RCN=1	<p>HTTP_API/TS/RET/001 HTTP_API/TS/RET/001_RCN/1</p> <p>HTTP Request:</p> <p>GET /icc/ae_light_04/cont_temp9?rcn=1 HTTP/1.1 Host: http://localhost:9999/~vnpt X-M2M-Origin: /Cba6c0e0f0a872695 Accept: application/json X-M2M-RI: 12345</p> <p>HTTP Response:</p> <p>200 OK Content-Length:265 Content-Type:application/json X-M2M-RI:1234 X-M2M-RVI: 2a X-M2M-RSC:2000</p> <pre>{ "m2m:ts": {</pre>						



	<pre>"ct": "20200813T084837", "pei": 1, "ty": 29, "ri": "/vnpt/ts-9726db19b7061fd9", "lbl": ["timeSeries_label"], "lt": "20200813T084837", "mni": 9223372036854775807, "pi": "/vnpt/CAE7f968d26b3f62ea0d", "mdd": true, "mdt": 1, "rn": "ts_a35e53020ffcfc04d", "mbs": 9223372036854775807 } }</pre>
--	--

Giao thức MQTT:



API Id	MQTT_API/TS/CRE/001 MQTT_API/TS/CRE/001_RCN0 MQTT_API/TS/CRE/001_RCN1 MQTT_API/TS/CRE/001_RCN2 MQTT_API/TS/CRE/001_RCN3
API Name	timeSeries RETRIEVE via MQTT
Target Resource	Resource type <AE>
Description	API truy vấn resource type timeSeries
Resource Structure before Sending Request	 <pre> graph TD CSE[CSE-name (CSE)] --- AE[AE-name (AE)] </pre>
Example with No RCN or RCN=1	<p>MQTT_API/TS/CRE/001</p> <p>MQTT_API/TS/CRE/001_RCN/1</p> <p>MQTT Request Topic: /oneM2M/req/CAE00101010101/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "fr": "/SuperTester", "op": 2, "rcn": 1, "rqi": "12312414", </pre>

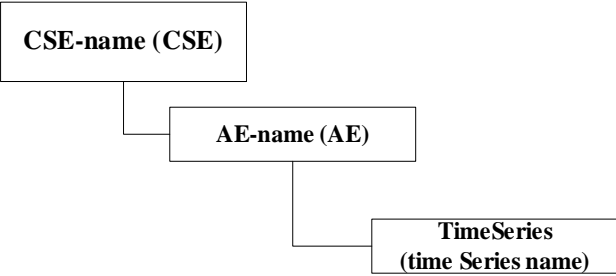
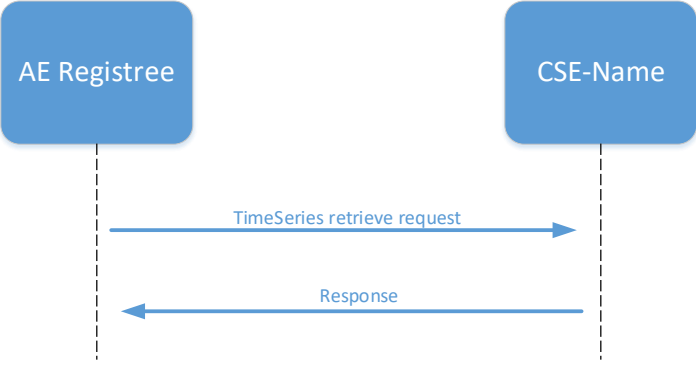

```
"to": "/icc/ae_test_sub_by_ha_01/ts_a35e53020ffcf04d",  
"ty": 29  
}  
  
MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json  
MQTT Response Payload  
  
{  
  "rsc": 2000,  
  "rqi": "12312414",  
  "pc": {  
    "m2m:ts": {  
      "ct": "20200813T084837",  
      "pei": 1,  
      "ty": 29,  
      "ri": "/vnpt/ts-9726db19b7061fd9",  
      "lbl": ["timeSeries_label"],  
      "lt": "20200813T084837",  
      "mni": 9223372036854775807,  
      "pi": "/vnpt/CAE7f968d26b3f62ea0d",  
      "mdd": true,  
      "mdt": 1,  
      "rn": "ts_a35e53020ffcf04d",  
      "mbs": 9223372036854775807  
    }  
  },  
  "ot": "1597287018853"  
}
```

Xóa resource type TimeSeriesInstance (AE sends Delete Request of a <timeSeriesInstance> resource in Registrar CSE. Registrar CSE delete the



<timeSeriesInstance> resource and updates the parent <timeSeries> resource with currentNrOfInstances and currentByteSize attributes correspondingly)

Giao thức HTTP:

API Id	HTTP_API/TSI/DEL/001 HTTP_API/TSI/DEL/001_RCN1				
API Name	timeSeries RETRIEVE via HTTP				
Target Resource	Resource type <timeSeries>				
Description	API xóa resource type timeSeries đã tạo ở CSE.				
Resource Structure before Sending Request	 <p>The diagram shows a hierarchical structure of resource identifiers. At the top is a box labeled 'CSE-name (CSE)'. A line connects it to a box below labeled 'AE-name (AE)'. Another line connects 'AE-name (AE)' to a box at the bottom labeled 'TimeSeries (time Series name)'.</p>				
Call Flow	 <p>The call flow diagram shows two entities: 'AE Registree' on the left and 'CSE-Name' on the right. A dashed vertical line extends from each entity. A blue arrow points from 'AE Registree' to 'CSE-Name' with the label 'TimeSeries retrieve request'. A second blue arrow points from 'CSE-Name' back to 'AE Registree' with the label 'Response'.</p>				
	<table border="1" data-bbox="485 1933 1270 2040"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/ json</td> </tr> </tbody> </table>	Header	Value	Accept	application/ json
Header	Value				
Accept	application/ json				

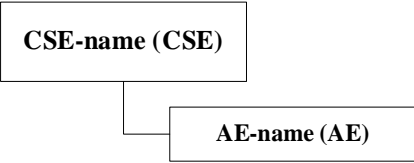


<p>HTTP Header Information</p>	<table border="1"> <tr> <td>X-M2M-RI</td> <td>Request ID</td> </tr> <tr> <td>X-M2M-Origin</td> <td>AE-ID of request originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json</td> </tr> </table>	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json
X-M2M-RI	Request ID						
X-M2M-Origin	AE-ID of request originator						
Content-Type	application/json						
<p>Example with No RCN or RCN=1</p>	<p>HTTP_API/TSI/DEL/001 HTTP_API/TSI/DEL/001_RCN/1</p> <p>HTTP Request:</p> <p>DELETE /icc/ae_test_sub_by_ha_01/ts_402579c0b71d80844/tsi_739a9f9e141d0959c?rcn=0 HTTP/1.1</p> <p>Host: http://localhost:9999/~/~vnpt</p> <p>X-M2M-Origin: /Cba6c0e0f0a872695</p> <p>Accept: application/json</p> <p>X-M2M-RI: 12345</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Length:265</p> <p>Content-Type:application/json</p> <p>X-M2M-RI:1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC:2002</p> <pre>{ "m2m:ts": {</pre>						



	<pre>"ct": "20200813T084837", "pei": 1, "ty": 29, "ri": "/vnpt/ts-9726db19b7061fd9", "lbl": ["timeSeries_label"], "lt": "20200813T084837", "mni": 9223372036854775807, "pi": "/vnpt/CAE7f968d26b3f62ea0d", "mdd": true, "mdt": 1, "rn": "ts_a35e53020ffcf04d", "mbs": 9223372036854775807 } }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/TS/CRE/001 MQTT_API/TS/CRE/001_RCN0 MQTT_API/TS/CRE/001_RCN1 MQTT_API/TS/CRE/001_RCN2 MQTT_API/TS/CRE/001_RCN3
API Name	timeSeries RETRIEVE via MQTT
Target Resource	Resource type <AE>
Description	API truy vấn resource type timeSeries
Resource Structure before Sending Request	
Example with No RCN or RCN=1	<p>MQTT_API/TS/CRE/001</p> <p>MQTT_API/TS/CRE/001_RCN/1</p> <p>MQTT Request Topic: /oneM2M/req/CAE00101010101/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "fr": "/SuperTester", "op": 4, "rcn": 1, "rqi": "12312414",</pre>

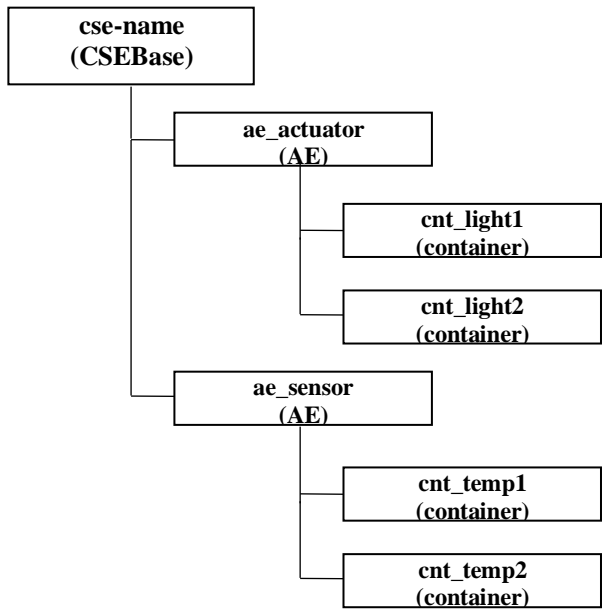
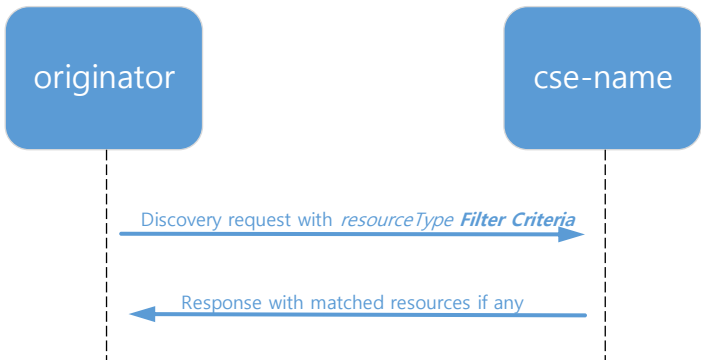
```
"to": "/icc/ae_test_sub_by_ha_01/ts_a35e53020ffcf04d",  
"ty": 29  
}  
  
MQTT Response Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json  
MQTT Response Payload  
  
{  
  "rsc": 2002,  
  "rqi": "12312414",  
  "pc": {  
    "m2m:ts": {  
      "ct": "20200813T084837",  
      "pei": 1,  
      "ty": 29,  
      "ri": "/vnpt/ts-9726db19b7061fd9",  
      "lbl": ["timeSeries_label"],  
      "lt": "20200813T084837",  
      "mni": 9223372036854775807,  
      "pi": "/vnpt/CAE7f968d26b3f62ea0d",  
      "mdd": true,  
      "mdt": 1,  
      "rn": "ts_a35e53020ffcf04d",  
      "mbs": 9223372036854775807  
    }  
  },  
  "ot": "1597287018853"  
}
```

IV.1.3. Discovery

Chức năng tìm kiếm các resource type tại các CSE.

Truy vấn sự tồn tại của các resource tại CSE (AE discovers resources residing in Registrar CSE)

Giao thức HTTP:

API Id	HTTP_API/DIS_TY2 HTTP_API/DIS_TY3						
API Name	Discovery with resourceType						
Target Resource	CSEBase						
Description	API truy vấn các resource type tại CSE						
Resource Structure	 <pre> graph TD CSE[cse-name (CSEBase)] --- AE1[ae_actuator (AE)] CSE --- AE2[ae_sensor (AE)] AE1 --- cnt_light1[cnt_light1 (container)] AE1 --- cnt_light2[cnt_light2 (container)] AE2 --- cnt_temp1[cnt_temp1 (container)] AE2 --- cnt_temp2[cnt_temp2 (container)] </pre>						
Call Flow	 <pre> graph LR Originator[originator] -- "Discovery request with resourceType Filter Criteria" --> CSE[cse-name] CSE -- "Response with matched resources if any" --> Originator </pre>						
HTTP Header	<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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID
Header	Value						
Accept	application/json						
X-M2M-RI	Request ID						



Information	<table border="1"><tr><td data-bbox="485 293 686 344">X-M2M-Origin</td><td data-bbox="686 293 1270 344">AE-ID of Originator</td></tr></table>	X-M2M-Origin	AE-ID of Originator
X-M2M-Origin	AE-ID of Originator		
Example with ty=2	<p>HTTP_API/DIS_TY2</p> <p>HTTP Request:</p> <p>GET /vnpt?fu=1&ty=2 HTTP/1.1</p> <p>Host: https://api-iot.vnpt.vn/~vnpt</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2000</p> <pre>{ "m2m:uril": ["/vnpt/vnpt/ae_light_04"], }</pre>		
	<p>HTTP_API/DIS_TY3</p> <p>HTTP Request:</p> <p>GET /vnpt?fu=1&ty=3 HTTP/1.1</p>		

Example
with
ty=3

Host: <https://api-iot.vnpt.vn/~vnpt>

X-M2M-Origin: [key được cấp]

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 OK

Content-Type: application/json

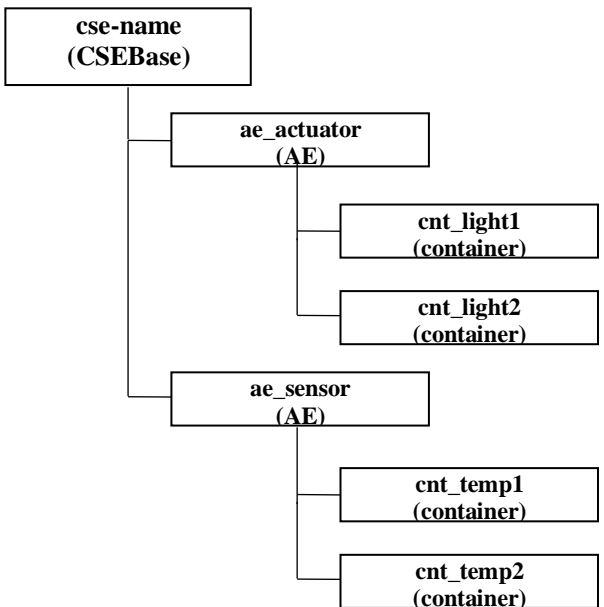

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2000

```
{  
  "m2m:uril": [  
    "/vnpt/vnpt/ae light 04/cont temp04",  
    "/vnpt/vnpt/ae light 04/cont temp005",  
    "/vnpt/vnpt/ae light 04/cont temp6",  
    "/vnpt/vnpt/ae light 04/cont temp4",  
    "/vnpt/vnpt/ae light 04/cont temp006",  
    "/vnpt/vnpt/ae light 06/cont temp1",  
    "/vnpt/vnpt/ae light 04/cont temp007",  
    "/vnpt/vnpt/ae light 04/cont temp8",  
    "/vnpt/vnpt/ae light 06/cont temp2",  
    "/vnpt/vnpt/ae light 04/cont temp05",  
    "/vnpt/vnpt/ae light 04/cont temp5"  
  ],  
}
```

Giao thức MQTT:

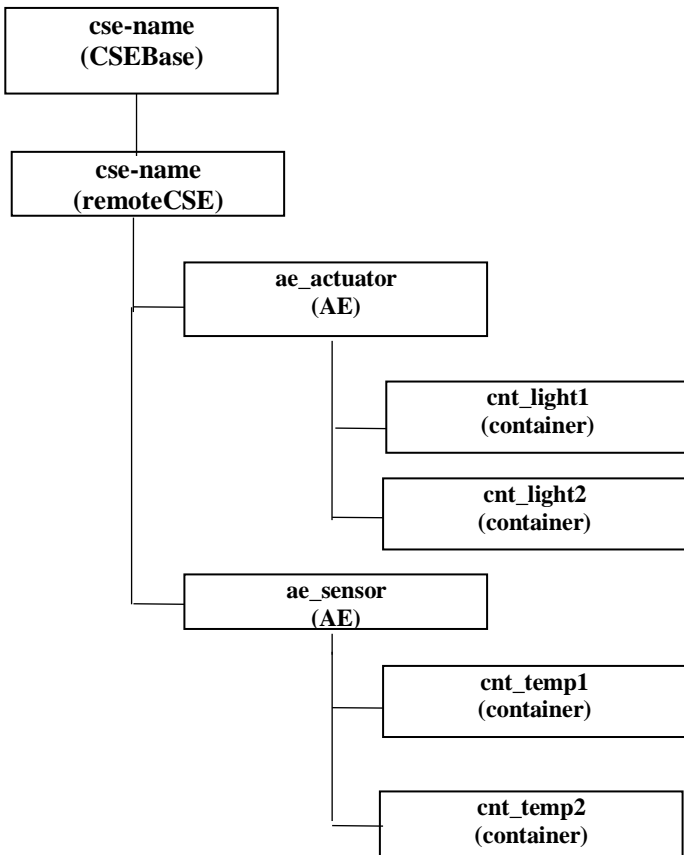
API Id	MQTT_API/DIS_TY2 MQTT_API/DIS_TY3
API Name	Discovery with resourceType
Target Resource	CSEBase
Description	API truy vấn các resource type tại CSE
Resource Structure	 <pre> graph TD CSE[cse-name (CSEBase)] --- AE1[ae_actuator (AE)] CSE --- AE2[ae_sensor (AE)] AE1 --- cnt_light1[cnt_light1 (container)] AE1 --- cnt_light2[cnt_light2 (container)] AE2 --- cnt_temp1[cnt_temp1 (container)] AE2 --- cnt_temp2[cnt_temp2 (container)] </pre>
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: Discovery request with resourceType Filter Criteria cse-name-->>originator: Response with matched resources if any </pre>
Example with ty=2	<p>MQTT_API/DIS_TY2</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p>


	<pre> { "from": "[key được cấp]", "operation": 6, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/icc", "resourceType": 3, "filterCriteria":{ "resourceType":[2], "filterUsage":1 } } </pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre> { "responseStatusCode": 2000, "requestIdentifier": "12345", "originatingTimestamp": "1578995641531", "content": { "m2m:uril": ["/vnpt/vnpt/ae_light_04"] } } </pre>
<p>Example with ty=3</p>	<p>MQTT_API/DIS_TY3</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "from": "[key được cấp]", "operation": 6, "resultContent": 1, </pre>

```
"requestIdentifier": "12345",  
"to": "/vnpt/icc",  
"resourceType": 3,  
"filterCriteria": {  
  "resourceType": [3],  
  "filterUsage": 1  
}  
}  
MQTT Request Topic: /oneM2M/resp[key được cấp]/json  
MQTT Request Payload  
{  
  "responseStatusCode": 2000,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1578995522803",  
  "content": {  
    "m2m:uril":  
    ["/vnpt/vnpt/ae_light_04/cont_temp04", "/vnpt/vnpt/ae_light_04/cont_temp005",  
      "/vnpt/vnpt/ae_light_04/cont_temp6", "/vnpt/vnpt/ae_light_04/cont_temp4",  
      "/vnpt/vnpt/ae_light_04/cont_temp006", "/vnpt/vnpt/ae_light_06/cont_temp1",  
      "/vnpt/vnpt/ae_light_04/cont_temp007", "/vnpt/vnpt/ae_light_04/cont_temp8",  
      "/vnpt/vnpt/ae_light_06/cont_temp2", "/vnpt/vnpt/ae_light_04/cont_temp05",  
      "/vnpt/vnpt/ae_light_04/cont_temp5"]  
  }  
}
```

Truy vấn trực tiếp đến MN-CSE qua IN-CSE (AE discovers accessible resources residing in the remote Hosting CSE using multiple Filter Criteria)

Giao thức HTTP:

API Id	HTTP_API/RM/DIS_TY2 HTTP_API/RM/DIS_TY3
API Name	Discovery with resourceType
Target Resource	CSEBase/remoteCSE
Description	API truy vấn các resource type tại remote CSE
Resource Structure	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- RemoteCSE["cse-name (remoteCSE)"] RemoteCSE --- AEActuator["ae_actuator (AE)"] RemoteCSE --- AESensor["ae_sensor (AE)"] AEActuator --- cnt_light1["cnt_light1 (container)"] AEActuator --- cnt_light2["cnt_light2 (container)"] AESensor --- cnt_temp1["cnt_temp1 (container)"] AESensor --- cnt_temp2["cnt_temp2 (container)"] </pre>

<p>Call Flow</p>									
<p>HTTP Header Information</p>	<table border="1" data-bbox="478 750 1276 974"> <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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of Originator
Header	Value								
Accept	application/json								
X-M2M-RI	Request ID								
X-M2M-Origin	AE-ID of Originator								
<p>Example with ty=2</p>	<p>HTTP_API/RM/DIS_TY2</p> <p>HTTP Request:</p> <pre>GET /vnpt/IoTGatewayHome6?fu=1&ty=2 HTTP/1.1 Host: https://api-iot.vnpt.vn/~vnpt X-M2M-Origin: [key được cấp] Accept: application/json X-M2M-RI: 1234</pre> <p>HTTP Response:</p> <pre>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</pre>								

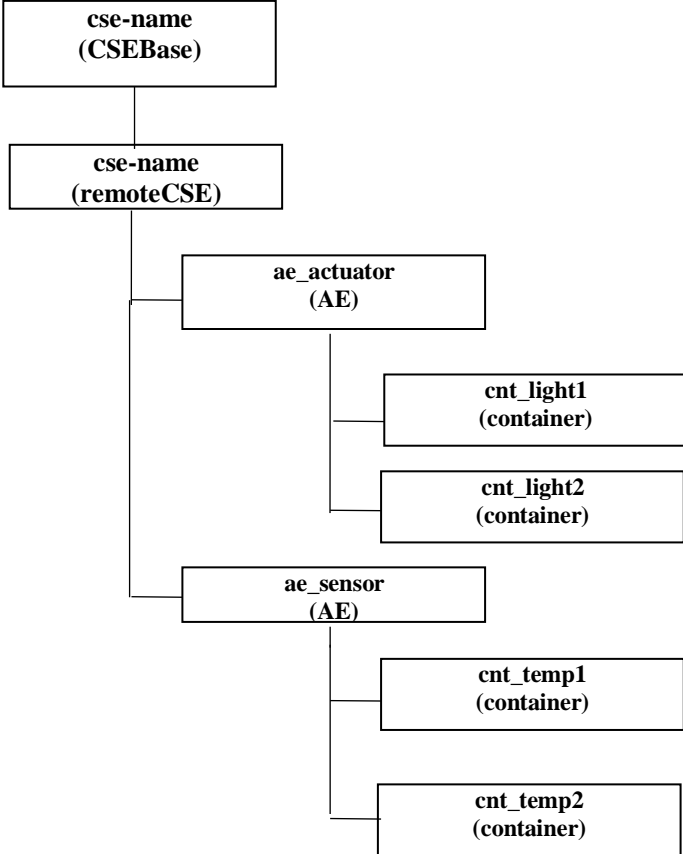



	<pre>{ "m2m:uril": ["<u>/vnpt/vnpt/ae light 04</u>"], }</pre>
<p>Example with ty=3</p>	<p>HTTP_API/RM/DIS_TY3</p> <p>HTTP Request:</p> <p>GET /vnpt/loTGatewayHome6?fu=1&ty=3 HTTP/1.1 Host: https://api-iot.vnpt.vn/~vnpt X-M2M-Origin: [key được cấp] Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</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": ["<u>/vnpt/vnpt/ae light 04/cont temp04</u>", "<u>/vnpt/vnpt/ae light 04/cont temp005</u>", "<u>/vnpt/vnpt/ae light 04/cont temp6</u>", "<u>/vnpt/vnpt/ae light 04/cont temp4</u>", "<u>/vnpt/vnpt/ae light 04/cont temp006</u>", "<u>/vnpt/vnpt/ae light 06/cont temp1</u>", "<u>/vnpt/vnpt/ae light 04/cont temp007</u>",] }</pre>



	<pre>"/vnpt/vnpt/ae light 04/cont temp8", "/vnpt/vnpt/ae light 06/cont temp2", "/vnpt/vnpt/ae light 04/cont temp05", "/vnpt/vnpt/ae light 04/cont temp5"], }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/RM/DIS_TY2 MQTT_API/RM/DIS_TY3
API Name	Discovery with resourceType
Target Resource	CSEBase/remoteCSE
Description	API truy vấn các resource type tại CSE remote qua giao thức MQTT
Resource Structure	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- RemoteCSE["cse-name (remoteCSE)"] RemoteCSE --- AE1["ae_actuator (AE)"] RemoteCSE --- AE2["ae_sensor (AE)"] AE1 --- cnt_light1["cnt_light1 (container)"] AE1 --- cnt_light2["cnt_light2 (container)"] AE2 --- cnt_temp1["cnt_temp1 (container)"] AE2 --- cnt_temp2["cnt_temp2 (container)"] </pre>
Call Flow	 <pre> sequenceDiagram participant Originator as originator participant CSE as cse-name Originator->>CSE: Discovery request with resourceType Filter Criteria CSE-->>Originator: Response with matched resources if any </pre>

<p>Example with ty=2</p>	<p>MQTT_API/DIS_TY2</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "[key được cấp]", "operation": 6, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/IoTGateway6", "resourceType": 3, "filterCriteria": { "resourceType": [2], "filterUsage": 1 } }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12345", "originatingTimestamp": "1578995641531", "content": { "m2m:uril": ["/vnpt/vnpt/ae_light_04"] } }</pre>
	<p>MQTT_API/DIS_TY3</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p>

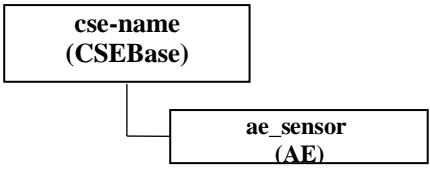
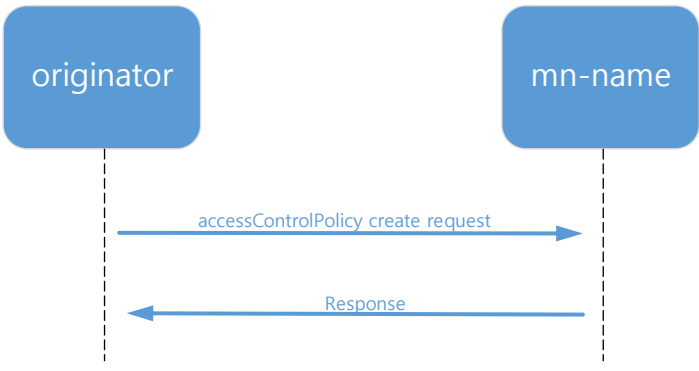
<p>Example with ty=3</p>	<pre> { "from": "[key được cấp]", "operation": 6, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/IoTGateway6", "resourceType": 3, "filterCriteria":{ "resourceType":[3], "filterUsage":1 } } </pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre> { "responseStatusCode": 2000, "requestIdentifier": "12345", "originatingTimestamp": "1578995522803", "content": { "m2m:uril": ["/vnpt/vnpt/ae_light_04/cont_temp04", "/vnpt/vnpt/ae_light_04/cont_temp005", "/vnpt/vnpt/ae_light_04/cont_temp6", "/vnpt/vnpt/ae_light_04/cont_temp4", "/vnpt/vnpt/ae_light_04/cont_temp006", "/vnpt/vnpt/ae_light_06/cont_temp1", "/vnpt/vnpt/ae_light_04/cont_temp007", "/vnpt/vnpt/ae_light_04/cont_temp8", "/vnpt/vnpt/ae_light_06/cont_temp2", "/vnpt/vnpt/ae_light_04/cont_temp05", "/vnpt/vnpt/ae_light_04/cont_temp5"] } } </pre>
---------------------------------	--

IV.1.4. Security

Mô tả chức năng: chức năng này cung cấp các API liên quan đến bảo mật cho các resource type của người dùng.

Tạo resource type <accessControlPolicy> (AE creates an accessControlPolicy resource)

Giao thức HTTP:

API Id	<p>HTTP_API/ACP/CRE/001</p> <p>HTTP_API/ACP/CRE/001_RCN0</p> <p>HTTP_API/ACP/CRE/001_RCN1</p> <p>HTTP_API/ACP/CRE/001_RCN2</p> <p>HTTP_API/ACP/CRE/001_RCN3</p>								
API Name	<accessControlPolicy>								
Target Resource	<CSEBase>								
Description	API tạo resource type <accessControlPolicy> tại CSE								
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>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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of request originator
Header	Value								
Accept	application/json								
X-M2M-RI	Request ID								
X-M2M-Origin	AE-ID of request originator								

	<table border="1"> <tr> <td data-bbox="485 293 687 344">Content-Type</td> <td data-bbox="687 293 1270 344">application/json; ty=1</td> </tr> </table>	Content-Type	application/json; ty=1
Content-Type	application/json; ty=1		
<p>Example with RCN=0</p>	<p>HTTP_API/ACP/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>POST /vnpt?rcn=0 HTTP/1.1</p> <p>Host: localhost:9999</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json; ty=1</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre> { "m2m:acp" : { "rn": "accessControlPolicy", "et" : "20201221T064952", "pv" : { "acr" : [{ "acco" : [], "acop" : 63, "acor" : ["CAE1", "CAE2"] }] }, "pvs" : { "acr" : [{ "acco" : [], "acop" : 63, </pre>		

	<pre> "acor" : ["all"] }] } } } </pre> <p>HTTP Response:</p> <p>201 Created Content-Location: mn-name/accessControlPolicy Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</p>
<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/ACP/CRE/001 HTTP_API/ACP/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /vnpt?rcn=1 HTTP/1.1 Host: localhost:9999 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json; ty=1 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre> { "m2m:acp" : { "rn": "accessControlPolicy", </pre>

```
"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": [],  
      "acop": 63,  
      "acor": [  
        "all"  
      ]  
    }  
  ]  
}  
}
```

Example
with
RCN=2

API/ACP/CRE/001_RCN2

HTTP Request:

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

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

	<pre> } } 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:uri": "mn-name/accessControlPolicy" } </pre>
<p>Example with RCN=3</p>	<p>API/ACP/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=1 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:acp" : { "rn": "accessControlPolicy", "et" : "20201221T064952", </pre>

```
"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

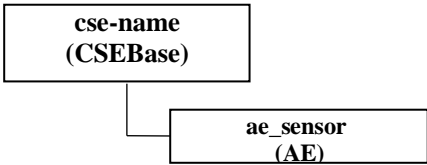
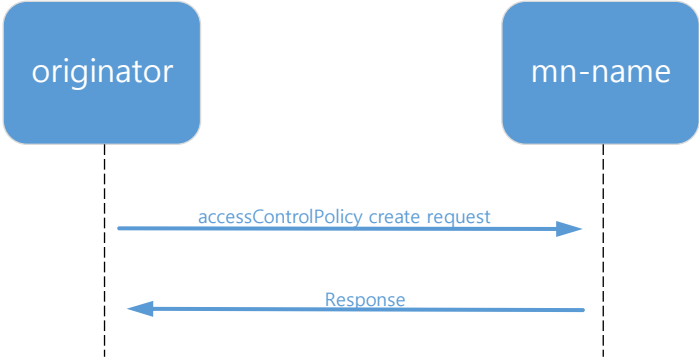
```
{  
  "m2m:rce": {  
    "m2m:acp": {
```



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

--	--

Giao thức MQTT:

API Id	MQTT_API/ACP/CRE/001 MQTT_API/ACP/CRE/001_RCN0 MQTT_API/ACP/CRE/001_RCN1 MQTT_API/ACP/CRE/001_RCN2 MQTT_API/ACP/CRE/001_RCN3
API Name	<accessControlPolicy>
Target Resource	<CSEBase>
Description	API tạo resource type <accessControlPolicy> tại CSE
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	<p>MQTT_API/ACP/CRE/001_RCN0</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p>

```
{
  "from": "acp_admin",
  "operation": 1,
  "resultContent": 0,
  "requestIdentifier": "12345",
  "to": "/vnpt/icc",
  "resourceType": 1,
  "content": {
    "m2m:acp": {
      "rn": "acp_admin_test11",
      "pv": {
        "acr": [{
          "acor": ["/vnpt/AE_admin", "/vnpt/C61a17e233bf0d43b"],
          "acop": 63
        }
      ]
    },
    "pvs": {
      "acr": [{
        "acor": ["/vnpt/AE_admin"],
        "acop": 63
      }
    ]
  }
}
```

MQTT Request Topic: /oneM2M/resp[key được cấp]/json

MQTT Request Payload

```
{
  "responseStatusCode": 2001,
  "requestIdentifier": "12345",
  "originatingTimestamp": "1579073731313"
}
```

Example
with
no RCN or
RCN=1

MQTT _API/ACP/CRE/001

MQTT _API/ACP/CRE/001_RCN1

MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Request Payload

```
{
  "from": "acp_admin",
  "operation": 1,
  "resultContent": 1,
  "requestIdentifier": "12345",
  "to": "/vnpt/icc",
  "resourceType": 1,
  "content": {
    "m2m:acp": {
      "rn": "acp_admin_test12",
      "pv": {
        "acr": [{
          "acor": ["/vnpt/AE_admin", "/vnpt/C61a17e233bf0d43b"],
          "acop": 63
        }
      ]
    },
    "pvs": {
      "acr": [{
        "acor": ["/vnpt/AE_admin"],
        "acop": 63
      }
    ]
  }
}
```


	<p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1579073861525", "content": { "m2m:acp": { "ct": "1579073861544", "ty": 1.0, "pv": { "acr": [{ "acor": ["/vnpt/AE_admin", "/vnpt/C61a17e233bf0d43b"], "acop": 63.0 }] }, "ri": "/vnpt/acp-ad68abaee26ab16b", "lbl": [], "lt": "1579073861544", "pi": "/vnpt", "pvs": { "acr": [{ "acor": ["/vnpt/AE_admin"], "acop": 63.0 }] }, "rn": "acp_admin_test12" }</pre>
	<p>MQTT_API/ACP/CRE/001_RCN2</p>

**Example
with
RCN=2**

MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json

MQTT Request Payload

```
{
  "from": "acp_admin",
  "operation": 1,
  "resultContent": 2,
  "requestIdentifier": "12345",
  "to": "/vnpt/icc",
  "resourceType": 1,
  "content": {
    "m2m:acp": {
      "rn": "acp_admin_test13",
      "pv": {
        "acr": [{
          "acor": ["/vnpt/AE_admin", "/vnpt/C61a17e233bf0d43b"],
          "acop": 63
        }
      ]
    },
    "pvs": {
      "acr": [{
        "acor": ["/vnpt/AE_admin"],
        "acop": 63
      }
    ]
  }
}
```

MQTT Request Topic: /oneM2M/resp[key được cấp]/json

MQTT Request Payload

```
{
```

	<pre>"responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1579074156610", "content": { "m2m:uri": "/vnpt/vnpt/acp_admin_test13" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/ACP/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 3, "requestIdentifier": "12345", "to": "/vnpt/icc", "resourceType": 1, "content": { "m2m:acp": { "rn": "acp_admin_test14", "pv": { "acr": [{ "acor": ["/vnpt/AE_admin", "/vnpt/C61a17e233bf0d43b"], "acop": 63 }] }, "pvs": { "acr": [{ "acor": ["/vnpt/AE_admin"], "acop": 63 }] } }</pre>

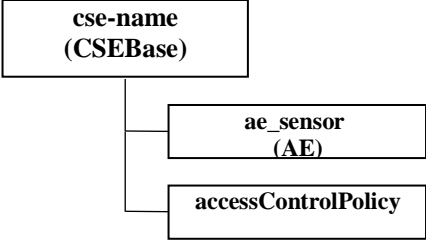
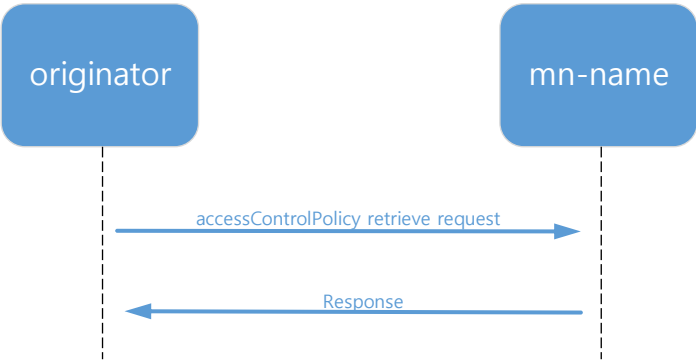
```
}  
  ]  
  }  
  }  
  }  
  }  
  }  
MQTT Request Topic: /oneM2M/resp[key được cấp]/json  
MQTT Request Payload  
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1579074216158",  
  "content": {  
    "m2m:acp": {  
      "ct": "1579074216172",  
      "ty": 1.0,  
      "pv": {  
        "acr": [{  
          "acor": ["/vnpt/AE_admin", "/vnpt/C61a17e233bf0d43b"],  
          "acop": 63.0  
        }  
      ]  
    },  
    "ri": "/vnpt/acp-223be4ac9c1a10362",  
    "lbl": [],  
    "lt": "1579074216172",  
    "pi": "/vnpt",  
    "pvs": {  
      "acr": [{  
        "acor": ["/vnpt/AE_admin"],  
        "acop": 63.0  
      }  
    ]  
  },  
}
```



	<pre>"rn": "acp_admin_test14" }, "m2m:uri": "/vnpt/vnpt/acp_admin_test14" } }</pre>
--	---

Truy vấn thông tin resource type <accessControlPolicy> (AE retrieves accessControlPolicy resource)

Giao thức HTTP:

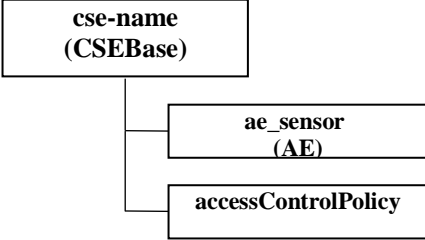
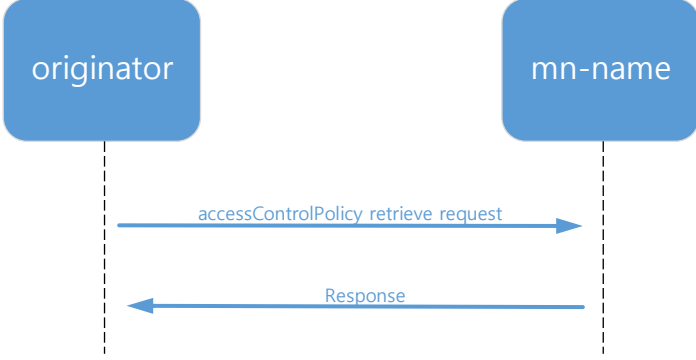
API Id	HTTP_API/ACP/RET/001 HTTP_API/ACP/RET/001_RCN1										
API Name	<accessControlPolicy> RETRIEVE										
Target Resource	<CSEBase>										
Description	API truy vấn thông tin resource type <accessControlPolicy> đã tạo tại CSE.										
Resource Structure before Sending Request											
Call Flow											
HTTP Header Information	<table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>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;</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;
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										

<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/ACP/RET/001</p> <p>HTTP_API/ACP/RET/001_RCN1</p> <p>HTTP Request:</p> <p>GET /vnpt/acp_admin_test11?rcn=1 HTTP/1.1</p> <p>Host: localhost:9999</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2000</p> <pre>{ "m2m:acp": { "ct": "1579073731332", "ty": 1, "pv": { "acr": [{ "acor": ["/vnpt/AE_admin", "/vnpt/C61a17e233bf0d43b"] }] } } }</pre>
--	--



```
    ],  
    "acop": 63  
  }  
]  
},  
"ri": "/vnpt/acp-b2c7ed793a6635b4",  
"lbl": [],  
"it": "1579073731332",  
"pi": "/vnpt",  
"pvs": {  
  "acr": [  
    {  
      "acor": [  
        "/vnpt/AE_admin"  
      ],  
      "acop": 63  
    }  
  ]  
},  
"rn": "acp_admin_test11"  
}  
}
```


Giao thức MQTT:

API Id	MQTT_API/ACP/RET/001 MQTT_API/ACP/RET/001_RCN1
API Name	<accessControlPolicy> RETRIEVE
Target Resource	<CSEBase>
Description	Truy vấn <accessControlPolicy> qua giao thức MQTT.
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or RCN=1	<p>MQTT_API/ACP/RET/001 MQTT_API/ACP/RET/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "/vnpt/AE_admin", "operation": 2, "resultContent": 1,</pre>

```
"requestIdentifier": "12345",  
"to": "/vnpt/vnpt/acp_admin_test14",  
"resourceType": 1  
  
}  
MQTT Request Topic: /oneM2M/resp[key được cấp]/json  
MQTT Request Payload  
{  
  "responseStatusCode": 2000,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1579075337762",  
  "content": {  
    "m2m:acp": {  
      "ct": "1579074216172",  
      "ty": 1.0,  
      "pv": {  
        "acr": [{  
          "acor": ["/vnpt/AE_admin", "/vnpt/C61a17e233bf0d43b"],  
          "acop": 63.0  
        }  
      ]  
    },  
    "ri": "/vnpt/acp-223be4ac9c1a10362",  
    "lbl": [],  
    "lt": "1579074216172",  
    "pi": "/vnpt",  
    "pvs": {  
      "acr": [{  
        "acor": ["/vnpt/AE_admin"],  
        "acop": 63.0  
      }  
    ]  
  },  
  "rn": "acp_admin_test14"
```



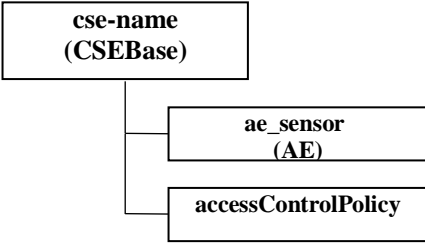
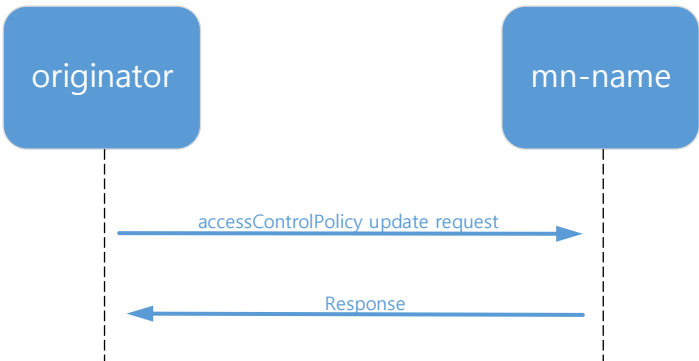
VNPT

**TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
CÔNG TY CÔNG NGHỆ THÔNG TIN VNPT**

	}
	}
	}

Cập nhật thuộc tính resource type <accessControlPolicy> (AE updates attribute in accessControlPolicy resource)

Giao thức HTTP:

API Id	HTTP_API/ACP/UPD/001 HTTP_API/ACP/UPD/001_RCN0 HTTP_API/ACP/UPD/001_RCN1										
API Name	<accessControlPolicy> UPDATE										
Target Resource	<accessControlPolicy>										
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											
Call Flow											
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;</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;
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										

<p>Example with RCN=0</p>	<p>HTTP_API/ACP/UPD/001_RCNO</p> <p>HTTP Request:</p> <pre> PUT /vnpt/acp_admin_test11?rcn=0 HTTP/1.1 Host: localhost:9999 X-M2M-Origin: /vnpt/AE_admin Content-Type: application/json Accept: 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"] }] } } } </pre>

	<p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: mn-name/accessControlPolicy</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/ACP/UPD/001</p> <p>HTTP_API/ACP/UPD/001_RCN1</p> <p>HTTP Request:</p> <p>PUT /vnpt/acp_admin_test11?rcn=1 HTTP/1.1</p> <p>Host: localhost:9999</p> <p>X-M2M-Origin: /vnpt/AE_admin</p> <p>Content-Type: application/json</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:acp" : { "pv" : { "acr" : [{ "acor" : ["CAE_A", "CAE_B"] }] } } },</pre>

```
"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

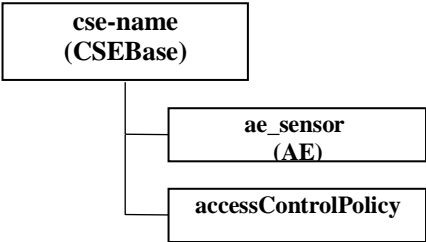
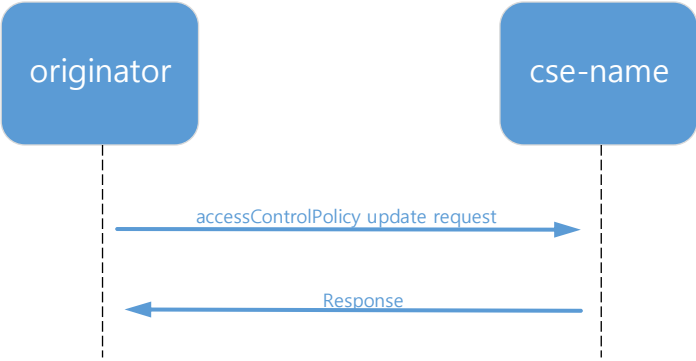
```
{  
  "m2m:acp": {  
    "rn": "accessControlPolicy",  
    "ty": 1,  
    "ri": "ACP503720698362418574",  
    "pi": "mnID",  
    "ct": "20180308T115922",  
    "lt": "20180308T115922",  
    "et": "20201221T064952",  
    "pv": {  
      "acr": [  
        {  
          "acco": [],  
        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



```
"acor": [  
    "CAE_A",  
    "CAE_B"  
  ]  
}  
],  
"pvs": {  
  "acr": [  
    {  
      "acco": [],  
      "acop": 63,  
      "acor": [  
        "CAE_C",  
        "CAE_D"  
      ]  
    }  
  ]  
}  
}
```




Giao thức MQTT:

API Id	API/ACP/UPD/001 API/ACP/UPD/001_RCNO API/ACP/UPD/001_RCNI
API Name	<accessControlPolicy> UPDATE
Target Resource	<accessControlPolicy>
Description	
Resource Structure before Sending Request	 <pre> graph TD CSE["cse-name (CSEBase)"] --- AE["ae_sensor (AE)"] CSE --- ACP["accessControlPolicy"] </pre>
Call Flow	 <pre> sequenceDiagram participant O as originator participant C as cse-name O->>C: accessControlPolicy update request C-->>O: Response </pre>
Example with RCN=0	<p>MQTT_API/ACP/UPD/001_RCNO</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "from": "/vnpt/AE_admin", "operation": 3, </pre>

	<pre>"resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/acp_admin_test11", "resourceType": 1, "content": { "m2m:acp": { "pv": { "acr": [{ "acor": ["/vnpt/AE_admin", "/vnpt/CSE1111111111111111"], "acop": 63 }] }, "pvs": { "acr": [{ "acor": ["/vnpt/AE_admin"], "acop": 63 }] } } </pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "12345", "originatingTimestamp": "1579076559209" }</pre>
	<p>MQTT_API/ACP/UPD/001</p> <p>MQTT_API/ACP/UPD/001_RCN1</p>

Example
with
no RCN or
RCN=1

```
{
  "from": "/vnpt/AE_admin",
  "operation": 3,
  "resultContent": 1,
  "requestIdentifier": "12345",
  "to": "/vnpt/vnpt/acp_admin_test11",
  "resourceType": 1,
  "content": {
    "m2m:acp": {
      "pv": {
        "acr": [{
          "acor": ["/vnpt/AE_admin", "/vnpt/CSE1111111111111111"],
          "acop": 63
        }
      ]
    },
    "pvs": {
      "acr": [{
        "acor": ["/vnpt/AE_admin"],
        "acop": 63
      }
    ]
  }
}
```

MQTT Request Topic: /oneM2M/resp[key được cấp]/json

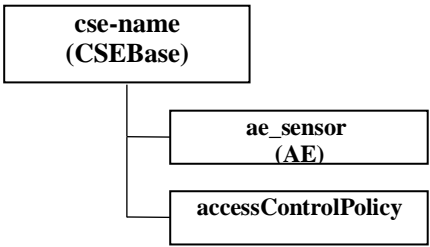
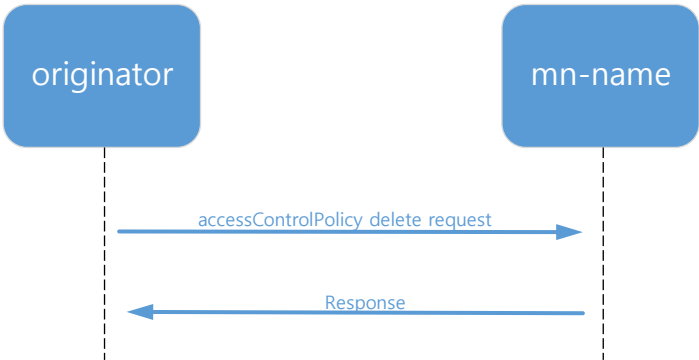
MQTT Request Payload

```
{
  "responseStatusCode": 2004,
  "requestIdentifier": "12345",
  "originatingTimestamp": "1579076696194",
```

```
"content": {  
  "m2m:acp": {  
    "ct": "1579073731332",  
    "ty": 1.0,  
    "pv": {  
      "acr": [{  
        "acor": ["/vnpt/AE_admin", "/vnpt/CSE11111111111111"],  
        "acop": 63.0  
      }  
    ]  
  },  
  "ri": "/vnpt/acp-b2c7ed793a6635b4",  
  "lbl": [],  
  "lt": "1579076700728",  
  "pi": "/vnpt",  
  "pvs": {  
    "acr": [{  
      "acor": ["/vnpt/AE_admin"],  
      "acop": 63.0  
    }  
  ]  
},  
  "rn": "acp_admin_test11"  
}  
}  
}
```

Xóa resource type <accessControlPolicy> (AE deletes accessControlPolicy resource)

Giao thức HTTP:

API Id	HTTP_API/ACP/DEL/001 HTTP_API/ACP/DEL/001_RCN0 HTTP_API/ACP/DEL/001_RCN1										
API Name	<accessControlPolicy> DELETE										
Target Resource	<accessControlPolicy>										
Description	API xóa resource type <accessControlPolicy>										
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- AE[ae_sensor (AE)] CSE --- ACP[accessControlPolicy] </pre>										
Call Flow	 <pre> sequenceDiagram participant O as originator participant M as mn-name O->>M: accessControlPolicy delete request M-->>O: 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;</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;
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										



<p>Example with no RCN or RCN=0</p>	<p>HTTP_API/ACP/DEL/001</p> <p>HTTP_API/ACP/DEL/001_RCNO</p> <p>HTTP Request:</p> <p>DELETE VNPT/acp_admin_test11?rcn=0 HTTP/1.1</p> <p>Host: localhost:9999</p> <p>X-M2M-Origin: /vnpt/AE_admin</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RSC: 2002</p>
<p>Example with RCN=1</p>	<p>HTTP_API/ACP/DEL/001_RCN1</p> <p>HTTP Request:</p> <p>DELETE VNPT/acp_admin_test10?rcn=1 HTTP/1.1</p> <p>Host: localhost:9999</p> <p>X-M2M-Origin: /vnpt/AE_admin</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p>

HTTP Response:

200 OK

Content-Type: application/json

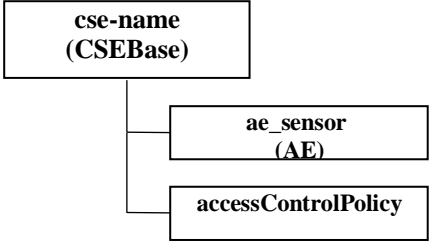
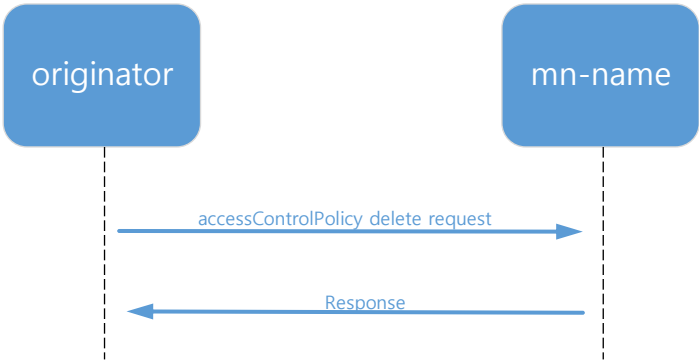
X-M2M-RI: 1234

X-M2M-RSC: 2002

```
{
  "m2m:acp": {
    "ct": "1579073731332",
    "ty": 1,
    "pv": {
      "acr": [
        {
          "acor": [
            "/vnpt/AE_admin",
            "/vnpt/C61a17e233bf0d43b"
          ],
          "acop": 63
        }
      ]
    },
    "ri": "/vnpt/acp-b2c7ed793a6635b4",
    "lbl": [],
    "it": "1579073731332",
    "pi": "/vnpt",
    "pvs": {
      "acr": [
        {
          "acor": [
            "/vnpt/AE_admin"
          ],
          "acop": 63
        }
      ]
    }
  }
}
```

	<pre>] }, "rn": "acp_admin_test10" } } </pre>
--	--

Giao thức MQTT:

API Id	MQTT_API/ACP/DEL/001 MQTT_API/ACP/DEL/001_RCNO MQTT_API/ACP/DEL/001_RCNI
API Name	<accessControlPolicy> DELETE
Target Resource	<accessControlPolicy>
Description	API xóa resource type <accessControlPolicy> qua giao thức MQTT
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- AE["ae_sensor (AE)"] CSEBase --- ACP["accessControlPolicy"] </pre>
Call Flow	 <pre> sequenceDiagram participant O as originator participant M as mn-name O->>M: accessControlPolicy delete request M-->O: Response </pre>



<p>Example with no RCN or RCN=0</p>	<p>MQTT_API/ACP/DEL/001</p> <p>MQTT_API/ACP/DEL/001_RCNO</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "/vnpt/AE_admin", "operation": 4, "resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/acp_admin_test11", "resourceType": 1 }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2002, "requestIdentifier": "12345", "originatingTimestamp": "1579076559209" }</pre>
<p>Example with RCN=1</p>	<p>MQTT_API/ACP/DEL/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "/vnpt/AE_admin", "operation": 4, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/acp_admin_test10",</pre>

```
"resourceType": 1
}
MQTT Request Topic: /oneM2M/resp[key được cấp]/json
MQTT Request Payload
{
  "responseStatusCode": 2002,
  "requestIdentifier": "12345",
  "originatingTimestamp": "1579076559209"
}

{
  "m2m:acp": {
    "ct": "1579073731332",
    "ty": 1,
    "pv": {
      "acr": [
        {
          "acor": [
            "/vnpt/AE_admin",
            "/vnpt/C61a17e233bf0d43b"
          ],
          "acop": 63
        }
      ]
    },
    "ri": "/vnpt/acp-b2c7ed793a6635b4",
    "lbl": [],
    "lt": "1579073731332",
    "pi": "/vnpt",
    "pvs": {
      "acr": [
        {
```

	<pre>"acor": ["/vnpt/AE_admin"], "acop": 63 }] }, "rn": "acp_admin_test10" } }</pre>
--	---

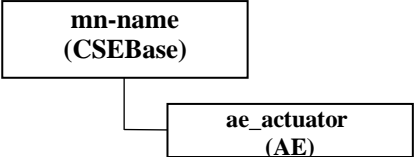
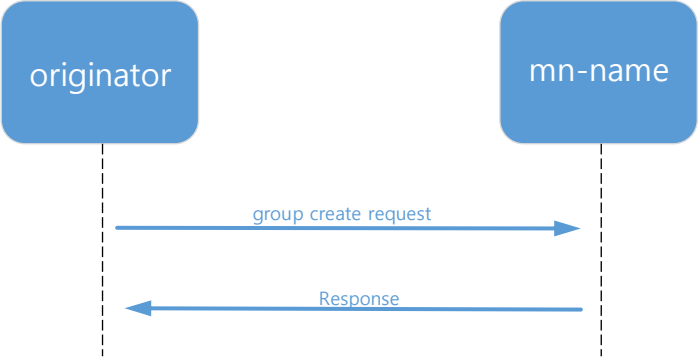
IV.1.5. Group Management

Chức năng liên quan đến việc quản lý nhóm các resource type cùng loại hoặc hỗn hợp, về cơ bản, đây là chức năng để xử lý cùng một lúc đến tất các resource type. Khi có request đến <group> thì request sẽ phải được phân phối đến các Member trong group này.

Một số API liên quan đến <group> như tạo, xem, sửa, xóa, notify và fanout.

Tạo <group> (AE creates a group resource)

Giao thức HTTP:

API Id	HTTP_API/GRP/CRE/001 HTTP_API/GRP/CRE/001_RCN0 HTTP_API/GRP/CRE/001_RCN1 HTTP_API/GRP/CRE/001_RCN2 HTTP_API/GRP/CRE/001_RCN3										
API Name	<group> CREATE										
Target Resource	<group> resource										
Description	API tạo group các resource type.										
Resource Structure before Sending Request											
Call Flow											
HTTP Header Information	<table border="1" data-bbox="485 1644 1272 1912"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-Rl</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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-Rl	Request ID	X-M2M-Origin	AE-ID of Originator	Content-Type	application/json; ty=9
Header	Value										
Accept	application/json										
X-M2M-Rl	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=9										

Example
with
RCN=0

HTTP_API/GRP/CRE/001_RCN0

HTTP Request:

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

```
{
  "m2m:grp": {
    "mid": [
      "mn-name/ae_actuator/lamp_container1",
      "mn-name/ae_actuator/lamp_container2"
    ],
    "mt": 3,
    "mnm": 50,
    "rn": "group_lamp"
  }
}
```

HTTP Response:

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>	<p>HTTP_API/GRP/CRE/001</p> <p>HTTP_API/GRP/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /mn-name/ae_actuator?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json; ty=9</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>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</p> <p>Content-Location: mn-name/ae_actuator/group_lamp</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p>
--	--

	<p>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, "mnm": 50, "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"] "mtv": true, "csy": 1 } }</pre>
<p>Example with RCN=2</p>	<p>HTTP_API/GRP/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /mn-name/ae_actuator?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json; ty=9</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p>

	<p>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</p> <p>Content-Location: mn-name/ae_actuator/group_lamp</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p> <pre>{ "m2m:uri": "mn-name/ae_actuator/group_lamp" }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API/GRP/CRE/001_RCN3</p> <p>HTTP Request:</p> <p>POST /mn-name/ae_actuator?rcn=3 HTTP/1.1</p>


```
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"
  }
}
```

HTTP Response:

```
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
```

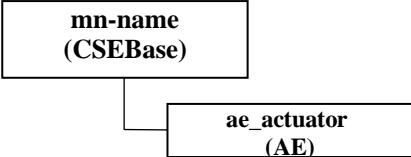
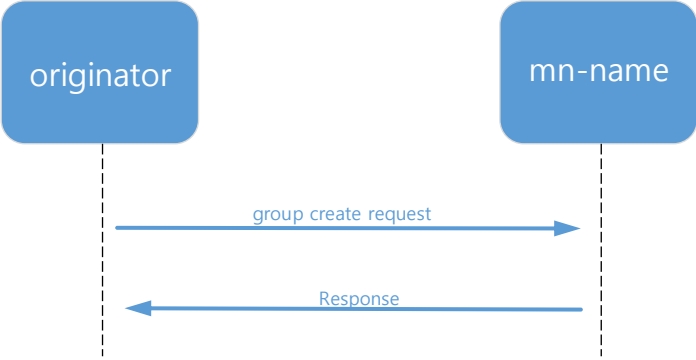
```
{
  "m2m:rce": {
    "m2m:grp": {
      "rn": "group_lamp",
      "ty": 9,

```



	<pre>"ri": "GRP792482146823489621", "pi": "CAE5630283216026458665", "ct": "20171212T170445", "lt": "20171212T170445", "mt": 3, "cnm": 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>
--	---

Giao thức MQTT:

API Id	MQTT_API/GRP/CRE/001 MQTT_API/GRP/CRE/001_RCN0 MQTT_API/GRP/CRE/001_RCN1 MQTT_API/GRP/CRE/001_RCN2 MQTT_API/GRP/CRE/001_RCN3
API Name	<group> CREATE via MQTT
Target Resource	<group> resource
Description	API tạo group các resource type.
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	MQTT_API/GRP/CRE/001_RCN0 MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json MQTT Request Payload <pre> { "from": "acp_admin", "operation": 1, "resultContent": 0, </pre>



	<pre>"requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 9, "content": { "m2m:grp": { "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mt": 3, "mnm": 50, "rn": "group_lamp4" } } }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1579076559209" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/GRP/CRE/001_RCNI</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 9, }</pre>

```
"content": {  
  "m2m:grp": {  
    "mid": [  
      "mn-name/ae_actuator/lamp_container1",  
      "mn-name/ae_actuator/lamp_container2"  
    ],  
    "mt": 3,  
    "mnm": 50,  
    "rn": "group_lamp4"  
  }  
}  
}
```

MQTT Request Topic: /oneM2M/resp[key được cấp]/json

MQTT Request Payload

```
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1580375613789",  
  "content": {  
    "m2m:grp": {  
      "cnm": 2.0,  
      "ty": 9.0,  
      "mt": 3.0,  
      "gn": "grp4ff10bd880d0354463",  
      "lt": "1580375613817",  
      "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"],  
      "fanOutPoint": "/vnpt/vnpt/ae_light_04/group_lamp4/fopt",  
      "mnm": 50.0,  
      "mtv": false,  
      "ct": "1580375613817",  
      "ri": "/vnpt/grp-689d596ccbd7fc23",  
    }  
  }  
}
```

	<pre> "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "group_lamp4" } } } </pre>
<p>Example with RCN=2</p>	<p>MQTT_API/GRP/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 1, "resultContent": 2, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 9, "content": { "m2m:grp": { "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mt": 3, "mnm": 50, "rn": "group_lamp5" } } } </pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre> { "responseStatusCode": 2001, </pre>



	<pre>"requestIdentifier": "12345", "originatingTimestamp": "1580375845162", "content": { "m2m:uri": "/vnpt/vnpt/ae_light_04/group_lamp5" }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/GRP/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 3, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 9, "content": { "m2m:grp": { "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mt": 3, "mnm": 50, "rn": "group_lamp6" } } }</pre>

MQTT Request Topic: /oneM2M/resp[key được cấp]/json

MQTT Request Payload

```
{
  "responseStatusCode": 2001,
  "requestIdentifier": "12345",
  "originatingTimestamp": "1580375917052",
  "content": {
    "m2m:grp": {
      "cnm": 2.0,
      "ty": 9.0,
      "mt": 3.0,
      "gn": "grp94958b70c06ff7c64f",
      "lt": "1580375917076",
      "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"],
      "fanOutPoint": "/vnpt/vnpt/ae_light_04/group_lamp6/fopt",
      "mnm": 50.0,
      "mtv": false,
      "ct": "1580375917076",
      "ri": "/vnpt/grp-a18b98f006b85b20f7",
      "pi": "/vnpt/Cba6c0e0f0a872695",
      "rn": "group_lamp6"
    },
    "m2m:uri": "/vnpt/vnpt/ae_light_04/group_lamp6"
  }
}
```

Truy vấn thông tin <group> (AE retrieves group resource)



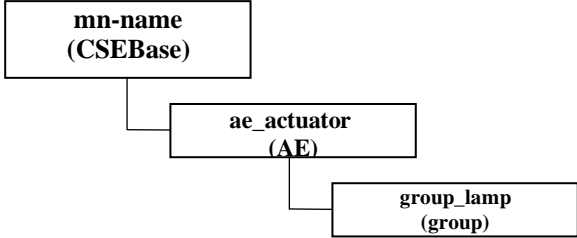
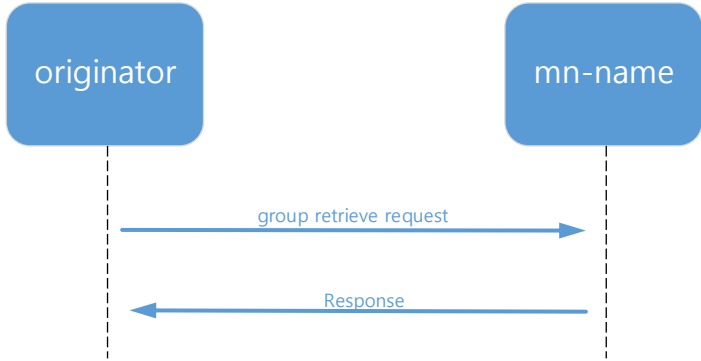
Giao thức HTTP:

API Id	API/GRP/RET/001 API/GRP/RET/001_RCNI										
API Name	<group> RETRIEVE										
Target Resource	<group>										
Description											
Resource Structure before Sending Request	<pre> graph TD mn_name["mn-name (CSEBase)"] --- ae_actuator["ae_actuator (AE)"] ae_actuator --- group_lamp["group_lamp (group)"] </pre>										
Call Flow	<pre> sequenceDiagram participant originator participant mn_name originator->>mn_name: group retrieve request mn_name-->>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>Content-Type</td> <td>application/json;</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;
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										
	API/GRP/RET/001										

<p>Example with no RCN or RCN=1</p>	<p>API/GRP/RET/001_RCN1</p> <p>HTTP Request:</p> <p>GET /cse-name/ae_light/group_lamp1?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CSE31231241/CAE5630283216026458665 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <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: 2000</p> <pre>{ "mt": 3, "cnm": 2, "mnm": 50, "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mtv": false, "gn": "grp42b8a6c00db5df371", "fanOutPoint": "/vnpt/vnpt/ae_light_04/group_lamp1/fopt", "ty": 9, "ri": "/vnpt/grp-02f9955b014bdfad4",</pre>
--	--

	<pre> "pi": "/vnpt/Cba6c0e0f0a872695", "ct": "1580372388144", "lt": "1580372388144", "rn": "group_lamp1" } </pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/GRP/RET/001 MQTT_API/GRP/RET/001_RCN1
API Name	<group> RETRIEVE via MQTT
Target Resource	<group>
Description	
Resource Structure before Sending Request	 <pre> graph TD A[mn-name (CSEBase)] --> B[ae_actuator (AE)] B --> C[group_lamp (group)] </pre>
Call Flow	 <pre> sequenceDiagram participant O as originator participant M as mn-name O->>M: group retrieve request M-->>O: Response </pre>
	MQTT_API/GRP/RET/001 MQTT_API/GRP/RET/001_RCN1

**Example
with
no RCN or
RCN=1**

MQTT Request Topic: /oneM2M/resp[key được cấp]/json

MQTT Request Payload

```
{  
  "from": "/vnpt/Cba6c0e0f0a872695",  
  "operation": 2,  
  "resultContent": 3,  
  "requestIdentifier": "12345",  
  "to": "/vnpt/vnpt/ae_light_04/group_lamp1",  
  "resourceType": 9  
}
```

MQTT Request Topic: /oneM2M/resp[key được cấp]/json

MQTT Request Payload

```
{  
  "responseStatusCode": 2000,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1580376028063",  
  "content": {  
    "mt": 3,  
    "cnm": 2,  
    "mnm": 50,  
    "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"],  
    "mtv": false,  
    "gn": "grp42b8a6c00db5df371",  
    "fanOutPoint": "/vnpt/vnpt/ae_light_04/group_lamp1/fopt",  
    "ty": 9,  
    "ri": "/vnpt/grp-02f9955b014bdfad4",  
    "pi": "/vnpt/Cba6c0e0f0a872695",  
    "ct": "1580372388144",  
    "lt": "1580372388144",  
    "rn": "group_lamp1"  
  }  
}
```



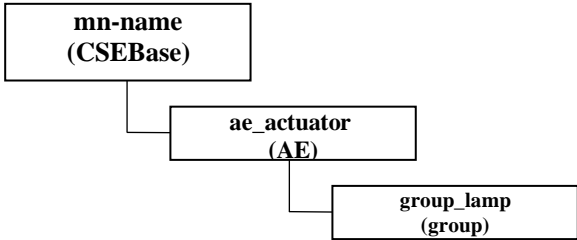
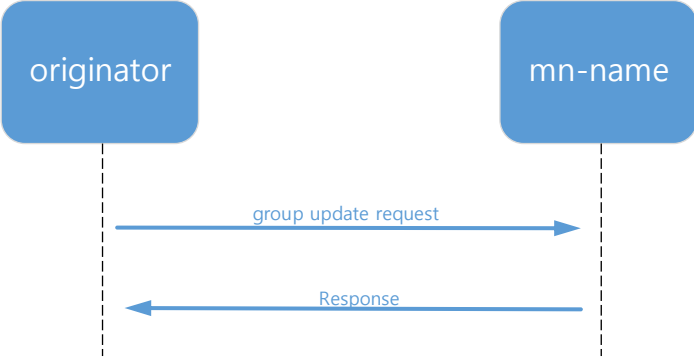
VNPT

**TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
CÔNG TY CÔNG NGHỆ THÔNG TIN VNPT**

	<p>}</p> <p>}</p>
--	-------------------

Sửa <group> (AE updates attribute in group resource)

Giao thức HTTP:

API Id	HTTP_API/GRP/UPD/001 HTTP_API/GRP/UPD/001_RCN0 HTTP_API/GRP/UPD/001_RCN1										
API Name	<group> UPDATE via HTTP										
Target Resource	<group>										
Description	API sửa thông tin <group> qua giao thức HTTP.										
Resource Structure before Sending Request											
Call Flow											
HTTP Header Information	<table border="1" data-bbox="485 1756 1270 2022"> <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;</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;
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										

<p>Example with RCN=0</p>	<p>API/GRP/UPD/001_RC�0</p> <p>HTTP Request:</p> <p>PUT /mn-name/ae_actuator/group_lamp?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:grp": { "mnm": 100 } }</pre> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: mn-name/ae_actuator/group_lamp</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
	<p>API/GRP/UPD/001</p> <p>API/GRP/UPD/001_RC�1</p>

Example
with
no RCN or
RCN=1

HTTP Request:

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  
  }  
}
```

HTTP Response:

200 OK

Content-Location: mn-name/ae_actuator/group_lamp

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

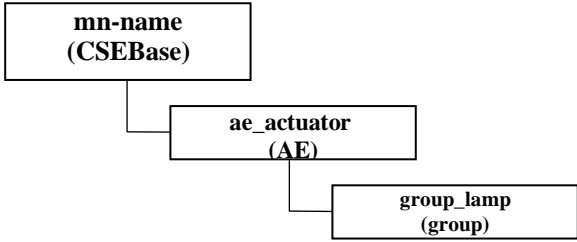
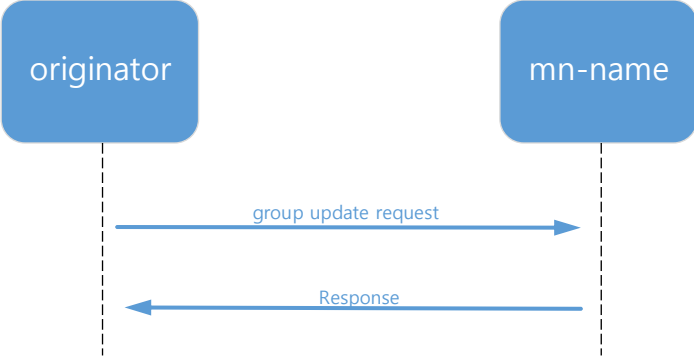
X-M2M-RSC: 2004

```
{  
  "m2m:grp": {  
    "rn": "group_lamp",  
    "ty": 9,  
    "ri": "GRP792482146823489621",  
    "pi": "CAE5630283216026458665",  
    "ct": "20171212T170445",  
    "lt": "20171212T170445",  
  }  
}
```




```
"mt": 3,  
"cnm": 2,  
"mnm": 100,  
"mid": [  
  "mn-name/ae_actuator/lamp_container1",  
  "mn-name/ae_actuator/lamp_container2"  
]  
"mtv": true,  
"csy": 1  
}  
}
```

Giao thức MQTT:

API Id	MQTT_API/GRP/UPD/001 MQTT_API/GRP/UPD/001_RCN0 MQTT_API/GRP/UPD/001_RCN1
API Name	<group> UPDATE via MQTT
Target Resource	Requested <group> resource
Description	
Resource Structure before Sending Request	 <pre> graph TD mn_name["mn-name (CSEBase)"] --- ae_actuator["ae_actuator (AE)"] ae_actuator --- group_lamp["group_lamp (group)"] </pre>
Call Flow	 <pre> sequenceDiagram participant originator participant mn_name originator->>mn_name: group update request mn_name-->>originator: Response </pre>
Example with RCN=0	<p>MQTT_API/GRP/UPD/001_RCN0</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre> { "from": "/vnpt/Cba6c0e0f0a872695", "operation": 3, </pre>



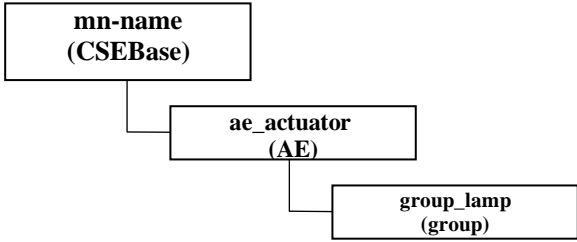
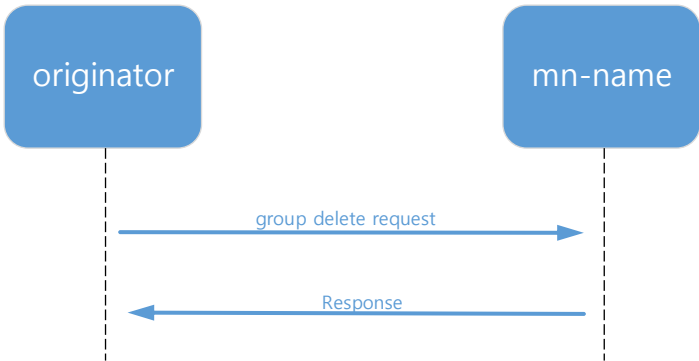
	<pre>"resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/group_lamp1", "resourceType": 9, "content": { "m2m:grp": { "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"], "mt": 3, "mnm": 100, "rn": "group_lamp4" } } }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/GRP/UPD/001</p> <p>MQTT_API/GRP/UPD/001_RCN1</p>



TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
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Xóa <group> (AE deletes group resource)

Giao thức HTTP:

API Id	HTTP_API/GRP/DEL/001 HTTP_API/GRP/DEL/001_RCN0 HTTP_API/GRP/DEL/001_RCN1										
API Name	<group> DELETE										
Target Resource	<group>										
Description	API xóa <group> qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD mn_name["mn-name (CSEBase)"] --- ae_actuator["ae_actuator (AE)"] ae_actuator --- group_lamp["group_lamp (group)"] </pre>										
Call Flow	 <pre> sequenceDiagram participant originator participant mn_name originator->>mn_name: group delete request mn_name-->>originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1673 1270 1937"> <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;</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;
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										

<p>Example with RCN=0</p>	<p>HTTP_API/GRP/DEL/001_RCN0</p> <p>HTTP Request:</p> <p>DELETE /mn-name/ae_actuator/group_lamp?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: mn-name/ae_actuator/group_lamp</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2002</p>
<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/GRP/DEL/001</p> <p>HTTP_API/GRP/DEL/001_RCN1</p> <p>HTTP Request:</p> <p>DELETE /mn-name/ae_actuator/group_lamp?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p>

HTTP Response:

200 OK

Content-Location: mn-name/ae_actuator/group_lamp

Content-Type: application/json

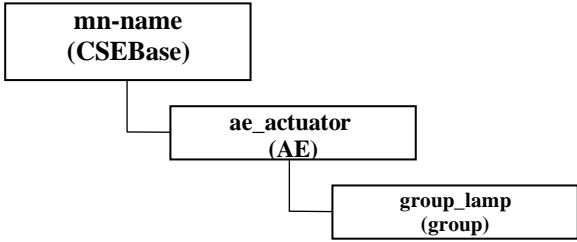
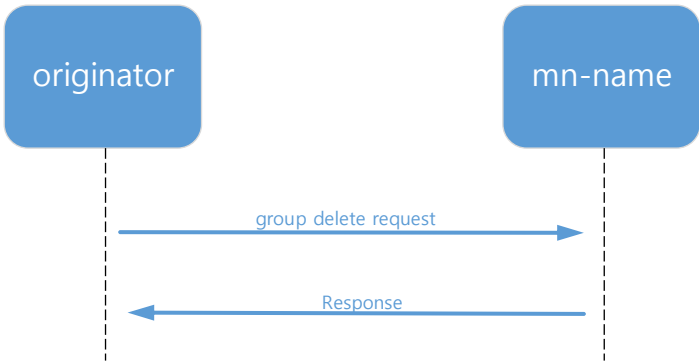
X-M2M-RI: 1234

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,
    "cnm": 2,
    "mnm": 100,
    "mid": [
      "mn-name/ae_actuator/lamp_container1",
      "mn-name/ae_actuator/lamp_container2"
    ]
    "mtv": true,
    "csy": 1
  }
}
```

Giao thức MQTT:

API Id	MQTT_API/GRP/DEL/001 MQTT_API/GRP/DEL/001_RCN0 MQTT_API/GRP/DEL/001_RCN1
API Name	<group> DELETE
Target Resource	<group>
Description	API xóa <group> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	MQTT_API/GRP/DEL/001_RCN0 MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload <pre>{ "from": "/vnpt/Cba6c0e0f0a872695",</pre>

	<pre>"operation": 4, "resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/group_lamp1", "resourceType": 9 } MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "responseStatusCode": 2002, "requestIdentifier": "12345", "originatingTimestamp": "1580436609506" }</pre>
<p>Example with no RCN or RCN=1</p>	<pre>MQTT_API/GRP/DEL/001 MQTT_API/GRP/DEL/001_RCN1 MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "from": "/vnpt/Cba6c0e0f0a872695", "operation": 4, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/group_lamp5", "resourceType": 9 } MQTT Request Topic: /oneM2M/resp[key được cấp]/json</pre>

MQTT Request Payload

```
{
  "responseStatusCode": 2002,
  "requestIdentifier": "12345",
  "originatingTimestamp": "1580436625684",
  "content": {
    "m2m:grp": {
      "cnm": 2.0,
      "ty": 9.0,
      "mt": 3.0,
      "gn": "grp2eadd60bc1a2fe72",
      "lt": "1580375845179",
      "mid": ["mn-name/ae_actuator/lamp_container1", "mn-name/ae_actuator/lamp_container2"],
      "fanOutPoint": "/vnpt/vnpt/ae_light_04/group_lamp5/fopt",
      "mnm": 50.0,
      "mtv": false,
      "ct": "1580375845179",
      "ri": "/vnpt/grp-737df9e302a96f79d",
      "pi": "/vnpt/Cba6c0e0f0a872695",
      "rn": "group_lamp5"
    }
  }
}
```

IV.1.6. Device Management

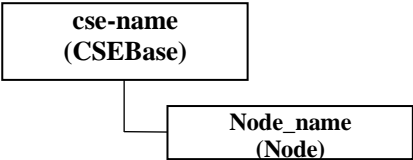
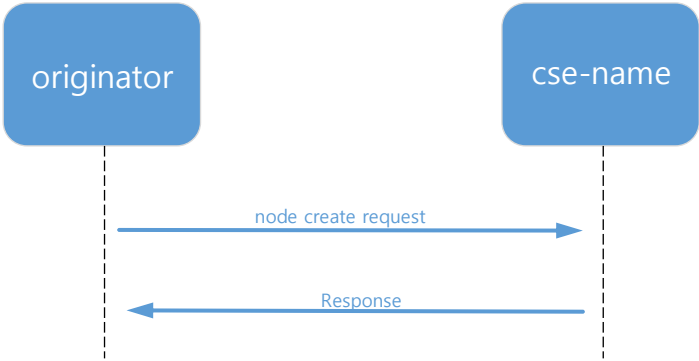
Chức năng quản lý thiết bị

tiếp tục cập nhật...

Các API Resource type liên quan đến quản lý thiết bị:

Tạo resource node (AE creates a node resource)

Giao thức HTTP:

API Id	HTTP_API/NOD/CRE/001 HTTP_API/ NOD /CRE/001_RCN0 HTTP_API/ NOD /CRE/001_RCN1 HTTP_API/ NOD /CRE/001_RCN2 HTTP_API/ NOD /CRE/001_RCN3										
API Name	<node> resource CREATE										
Target Resource	<node>										
Description	API tạo resource <node> qua HTTP										
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>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=9</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=9
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=9										

<p>Example with RCN=0</p>	<p>HTTP_API/NOD/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>POST /cse-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=14</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:nod": { "rn": "node06", "ni": "12312366666666", "hcl": "xxxx.yyyy.zzzz", "mgca": "192.168.1.1" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p>

<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/NOD/CRE/001</p> <p>HTTP_API/NOD/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /cse-name?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CSE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=14</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:nod": { "rn": "node07", "ni": "12312377777", "hcl": "xxxx.yyyy.zzzz", "mgca": "192.168.1.1" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p> <pre>{ "m2m:nod": {</pre>
--	--

	<pre>"hcl": "xxxx.yyyy.zzzz", "ct": "1580442443796", "ty": 14, "acpi": ["/vnpt/acp-31999e975bcac994"], "ri": "/vnpt/nod-742070979715cc990d", "lbl": [], "lt": "1580442443796", "pi": "/vnpt", "ni": "12312377777", "mgca": "192.168.1.1", "rn": "node07" } }</pre>
<p>Example with RCN=2</p>	<p>HTTP_API/GRP/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /cse-name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: [key được cấp]</p> <p>Content-Type: application/json; ty=14</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:nod": { "rn": "node08", "ni": "1231238888888", "hcl": "xxxx.yyyy.zzzz", "mgca": "192.168.1.1"</pre>

	<pre> } } HTTP Response: 201 Created Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:uri": "/vnpt/vnpt/node08" }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API/GRP/CRE/001_RCN3</p> <p>HTTP Request:</p> <p>POST /cse-name?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</p> <pre>{ "m2m:nod": { "rn": "node09", "ni": "123123999999", "hcl": "xxxx.yyyy.zzzz", "mgca": "192.168.1.1" } }</pre>

```
}  
}
```

HTTP Response:

201 Created

Content-Type: application/json

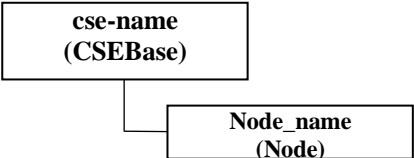
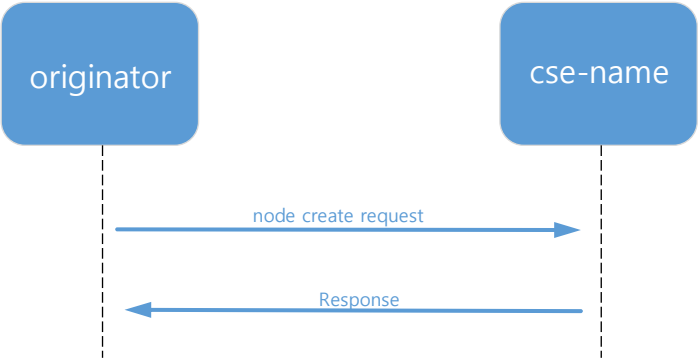
X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2001

```
{  
  "m2m:nod": {  
    "hcl": "xxxx.yyyy.zzzz",  
    "ct": "1580443658427",  
    "ty": 14,  
    "acpi": [  
      "/vnpt/acp-31999e975bcac994"  
    ],  
    "ri": "/vnpt/nod-06fe0a4b9bf907f5e",  
    "lbl": [],  
    "lt": "1580443658427",  
    "pi": "/vnpt",  
    "ni": "1231239999",  
    "mgca": "192.168.1.1",  
    "rn": "node09"  
  },  
  "m2m:uri": "/vnpt/vnpt/node09"  
}
```


Giao thức MQTT:

<p>API Id</p>	<p>MQTT_API/NOD/CRE/001 MQTT_API/NOD/CRE/001_RCN0 MQTT_API/NOD/CRE/001_RCN1 MQTT_API/NOD/CRE/001_RCN2 MQTT_API/NOD/CRE/001_RCN3</p>
<p>API Name</p>	<p><node> resource CREATE</p>
<p>Target Resource</p>	<p><node></p>
<p>Description</p>	<p>API tạo resource <node> qua MQTT</p>
<p>Resource Structure before Sending Request</p>	
<p>Call Flow</p>	
<p>Example with RCN=0</p>	<p>MQTT_API/NOD/CRE/001_RCN0 MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1,</pre>

	<pre>"resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/icc", "resourceType": 14, "content": { "m2m:nod": { "rn": "node111", "ni": "12312399991111", "hcl": "xxxx.yyyy.zzzz", "mgca": "192.168.1.1" } } }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1580436609506" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/NOD/CRE/001</p> <p>MQTT_API/NOD/CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 1, "requestIdentifier": "12345",</pre>

```
"to": "/vnpt/icc",  
"resourceType": 14,  
"content": {  
  "m2m:nod": {  
    "rn": "node111",  
    "ni": "12312399991111",  
    "hcl": "xxxx.yyyy.zzzz",  
    "mgca": "192.168.1.1"  
  }  
}  
}
```

MQTT Request Topic: /oneM2M/resp[key được cấp]/json

MQTT Request Payload

```
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1580444530873",  
  "content": {  
    "m2m:nod": {  
      "hcl": "xxxx.yyyy.zzzz",  
      "ct": "1580444535009",  
      "ty": 14.0,  
      "acpi": ["/vnpt/acp-31999e975bcac994"],  
      "ri": "/vnpt/nod-d3d916d19f5aa486",  
      "lbl": [],  
      "it": "1580444535010",  
      "pi": "/vnpt",  
      "ni": "12312399991111",  
      "mgca": "192.168.1.1",  
      "rn": "node111"  
    }  
  }  
}
```

<p>Example with RCN=2</p>	<p>MQTT_API/NOD/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 2, "requestIdentifier": "12345", "to": "/vnpt/icc", "resourceType": 14, "content": { "m2m:nod": { "rn": "node222", "ni": "12312399991222", "hcl": "xxxx.yyyy.zzzz", "mgca": "192.168.1.1" } } }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1580444703000", "content": { "m2m:uri": "/vnpt/vnpt/node222" } }</pre>
----------------------------------	---

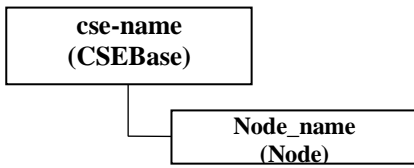
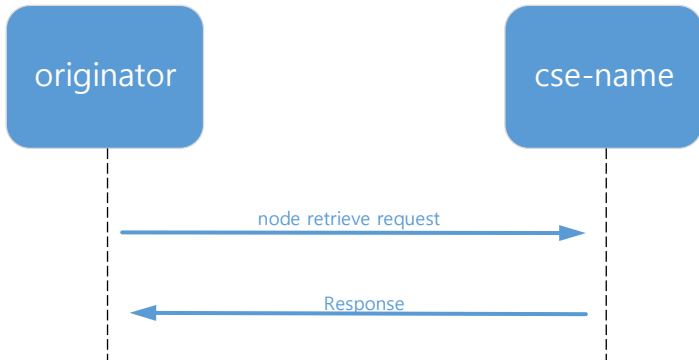
<p>Example with RCN=3</p>	<pre> } MQTT_API/NOD/CRE/001_RCN3 MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "from": "acp_admin", "operation": 1, "resultContent": 3, "requestIdentifier": "12345", "to": "/vnpt/icc", "resourceType": 14, "content": { "m2m:nod": { "rn": "node333", "ni": "12312399991333", "hcl": "xxxx.yyyy.zzzz", "mgca": "192.168.1.1" } } } } } MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1580444795527", "content": { "m2m:nod": { </pre>
----------------------------------	---



```
"hcl": "xxxx.yyyy.zzzz",  
"ct": "1580444795553",  
"ty": 14.0,  
"acpi": ["/vnpt/acp-31999e975bcac994"],  
"ri": "/vnpt/nod-f4191d302a7058063",  
"lbl": [],  
"lt": "1580444795553",  
"pi": "/vnpt",  
"ni": "12312399991333",  
"mgca": "192.168.1.1",  
"rn": "node333"  
},  
"m2m:uri": "/vnpt/vnpt/node333"  
}  
}
```

Truy vấn thông tin resource node (AE retrieves node resource)

Giao thức HTTP:

API Id	HTTP_API/NOD/RET/001 HTTP_API/NOD/RET/001_RCN1										
API Name	<node> RETRIEVE										
Target Resource	<node>										
Description	API truy vấn thông tin <node> qua giao thức HTTP										
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>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;</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;
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										

Example
with
no RCN or
RCN=1

HTTP_API/NOD/RET/001

HTTP_API/NOD/RET/001_RCN1

HTTP Request:

GET /cse-name/node_name?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: CSE31231241/AE5630283216026458665

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 OK

Content-Type: application/json

X-M2M-RI: 1234

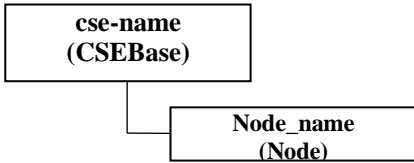
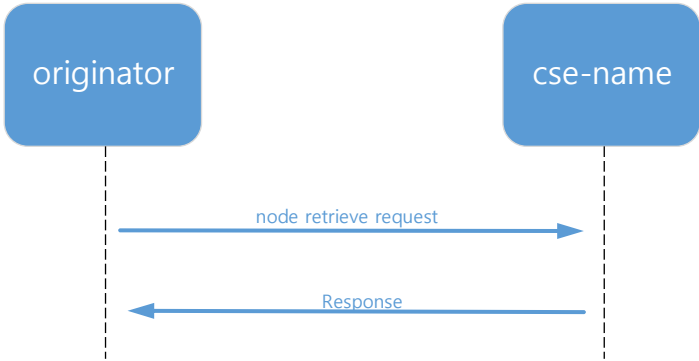
X-M2M-RVI: 2a

X-M2M-RSC: 2000

```
{
  "m2m:nod": {
    "hcl": "xxxx.yyyy.zzzz",
    "ct": "1580443658427",
    "ty": 14,
    "acpi": [
      "/vnpt/acp-31999e975bcac994"
    ],
    "ri": "/vnpt/nod-06fe0a4b9bf907f5e",
    "lbl": [],
    "it": "1580443658427",
    "pi": "/vnpt",
    "ni": "1231239999",
```


	<pre> "mgca": "192.168.1.1", "rn": "node09" } } </pre>
--	--

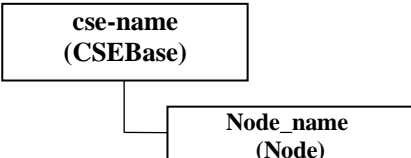
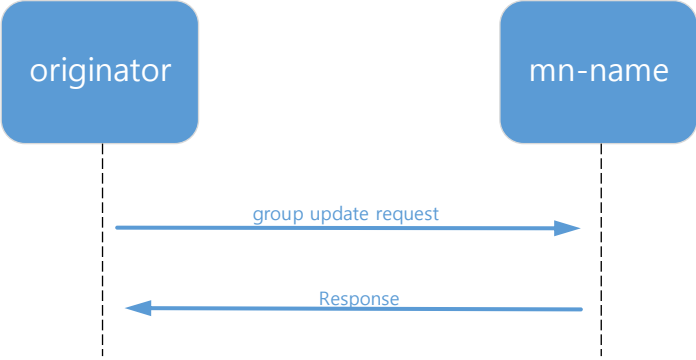
Giao thức MQTT:

API Id	MQTT_API/NOD/RET/001 MQTT_API/NOD/RET/001_RCNI
API Name	<node> RETRIEVE
Target Resource	<node>
Description	API truy vấn thông tin <node> qua giao thức MQTT
Resource Structure before Sending Request	
Call Flow	
	<p>MQTT_API/NOD/RET/001</p> <p>MQTT_API/NOD/RET/001_RCNI</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p>

<p>Example with no RCN or RCN=1</p>	<p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 2, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/node09", "resourceType": 14 }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12345", "originatingTimestamp": "1580452095585", "content": { "m2m:nod": { "hcl": "xxxx.yyyy.zzzz", "ct": "1580443658427", "ty": 14.0, "acpi": ["/vnpt/acp-31999e975bcac994"], "ri": "/vnpt/nod-06fe0a4b9bf907f5e", "lbl": [], "lt": "1580443658427", "pi": "/vnpt", "ni": "1231239999", "mgca": "192.168.1.1", "rn": "node09" } } }</pre>
--	---

Sửa thuộc tính resource node (AE updates attribute in node resource)

Giao thức HTTP:

API Id	HTTP_API/NOD/UPD/001 HTTP_API/NOD/UPD/001_RCNO HTTP_API/NOD/UPD/001_RCNI										
API Name	<node> UPDATE via HTTP										
Target Resource	<group>										
Description	API sửa thông tin <node> qua giao thức HTTP										
Resource Structure before Sending Request											
Call Flow											
HTTP Header Information	<table border="1" data-bbox="485 1753 1270 2018"> <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;</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;
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										



<p>Example with RCN=0</p>	<p>HTTP_API/NOD/UPD/001_RCNO</p> <p>HTTP Request:</p> <p>PUT /cse-name/node_name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json</p> <p>Accept: application/json;ty=14</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:nod": { "mgca": "192.168.1.200" } }</pre> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: cse-name/node_name</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
	<p>HTTP_API/NOD/UPD/001</p> <p>HTTP_API/NOD/UPD/001_RCNO</p>

Example
with
no RCN or
RCN=1

HTTP Request:

PUT /cse-name/node_name?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:nod": {  
    "mgca": "192.168.1.200"  
  }  
}
```

HTTP Response:

200 OK

Content-Location: cse-name/node_name

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

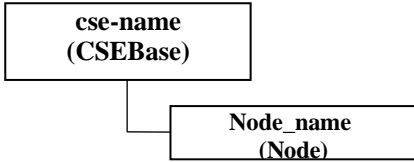
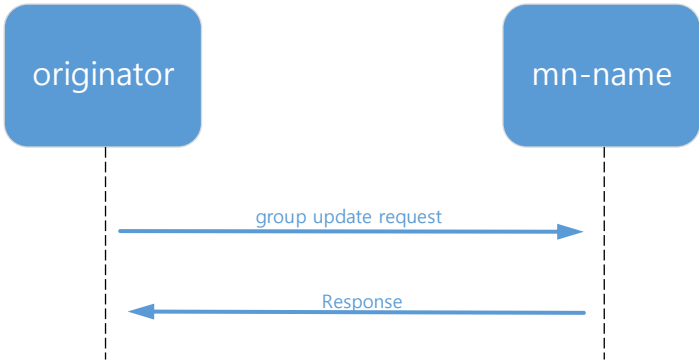
X-M2M-RSC: 2004

```
{  
  "m2m:nod": {  
    "hcl": "xxxx.yyyy.zzzz",  
    "ct": "1580443658427",  
    "ty": 14,  
    "acpi": [  
      "/vnpt/acp-31999e975bcac994"  
    ],  
  }  
}
```



	<pre>"ri": "/vnpt/nod-06fe0a4b9bf907f5e", "bl": [], "it": "1580453094691", "pi": "/vnpt", "ni": "1231239999", "mgca": "192.168.1.200", "rn": "node09" } }</pre>
--	---

Giao thức MQTT:

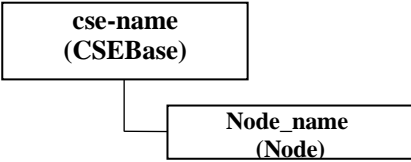
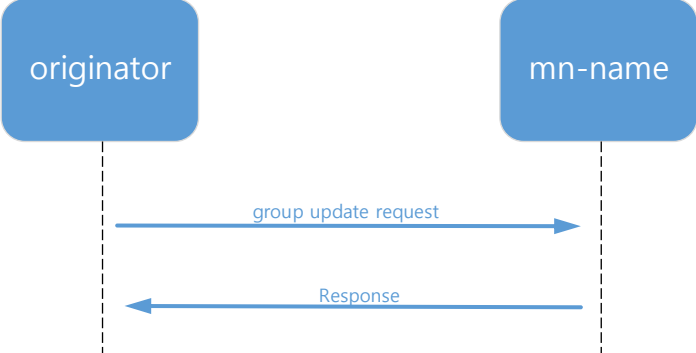
API Id	MQTT_API/NOD/UPD/001 MQTT_API/NOD/UPD/001_RCN0 MQTT_API/NOD/UPD/001_RCN1
API Name	<node> UPDATE via MQTT
Target Resource	<node>
Description	API sửa thông tin <node> qua giao thức MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	<p>MQTT_API/NOD/UPD/001_RCN0</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 0, "requestIdentifier": "12345",</pre>

	<pre>"to": "/vnpt/vnpt/node09", "resourceType": 14, "content": { "m2m:nod": { "mgca": "192.168.1.200" } }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "12345", "originatingTimestamp": "1580453281020" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/NOD/UPD/001</p> <p>MQTT_API/NOD/UPD/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/node09", "resourceType": 14, "content": { "m2m:nod": { "mgca": "192.168.1.200" } } }</pre>


```
    }  
  }  
  
}  
MQTT Request Topic: /oneM2M/resp[key được cấp]/json  
MQTT Request Payload  
{  
  "responseStatusCode": 2004,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1580453448356",  
  "content": {  
    "m2m:nod": {  
      "hcl": "xxx.yyy.zzz",  
      "ct": "1580443658427",  
      "ty": 14.0,  
      "acpi": ["/vnpt/acp-31999e975bcac994"],  
      "ri": "/vnpt/nod-06fe0a4b9bf907f5e",  
      "lbl": [],  
      "lt": "1580453448369",  
      "pi": "/vnpt",  
      "ni": "1231239999",  
      "mgca": "192.168.1.200",  
      "rn": "node09"  
    }  
  }  
}
```

Xóa resource node (AE deletes node resource)

Giao thức HTTP:

API Id	<p>HTTP_API/NOD/DEL/001</p> <p>HTTP_API/NOD/ DEL /001_RCNO</p> <p>HTTP_API/NOD/ DEL /001_RCNI</p>										
API Name	<node> DELETE via HTTP										
Target Resource	<node>										
Description	API xóa <node> qua giao thức HTTP										
Resource Structure before Sending Request	 <p>The diagram shows a hierarchical structure with a box labeled 'cse-name (CSEBase)' at the top, connected by a line to a box labeled 'Node_name (Node)' below it.</p>										
Call Flow	 <p>The diagram shows two entities: 'originator' and 'mn-name'. A blue arrow labeled 'group update request' points from 'originator' to 'mn-name'. A blue arrow labeled 'Response' points from 'mn-name' back to 'originator'. Vertical dashed lines extend from each entity to the message arrows.</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>Content-Type</td> <td>application/json;</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;
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										
	HTTP_API/NOD/DEL/001_RCNO										



<p>Example with RCN=0</p>	<p>HTTP Request:</p> <p>PUT /cse-name/node_name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json</p> <p>Accept: application/json;ty=14</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: cse-name/node_name</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/NOD/DEL/001</p> <p>HTTP_API/NOD/DEL/001_RCN1</p> <p>HTTP Request:</p> <p>PUT /cse-name/node_name?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p>

X-M2M-RVI: 2a

HTTP Response:

200 OK

Content-Location: cse-name/node_name

Content-Type: application/json

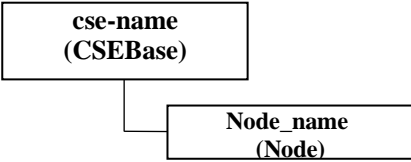
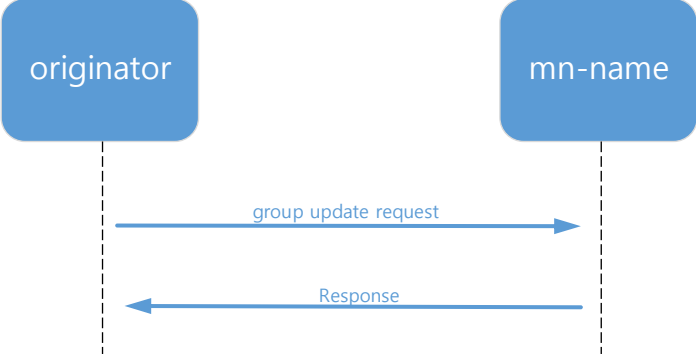
X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2004

```
{
  "m2m:nod": {
    "hcl": "xxxx.yyyy.zzzz",
    "ct": "1580443658427",
    "ty": 14,
    "acpi": [
      "/vnpt/acp-31999e975bcac994"
    ],
    "ri": "/vnpt/nod-06fe0a4b9bf907f5e",
    "lbl": [],
    "lt": "1580453094691",
    "pi": "/vnpt",
    "ni": "1231239999",
    "mgca": "192.168.1.200",
    "rn": "node09"
  }
}
```

Giao thức MQTT:

API Id	MQTT_API/NOD/DEL/001 MQTT_API/NOD/ DEL/001_RCN0 MQTT_API/NOD/ DEL/001_RCN1
API Name	<node> DELETE via MQTT
Target Resource	<node>
Description	API xóa <node> qua giao thức MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	MQTT_API/NOD/ DEL/001_RCN0 MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload <pre>{ "from": "acp_admin", "operation": 4, "resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/node09",</pre>

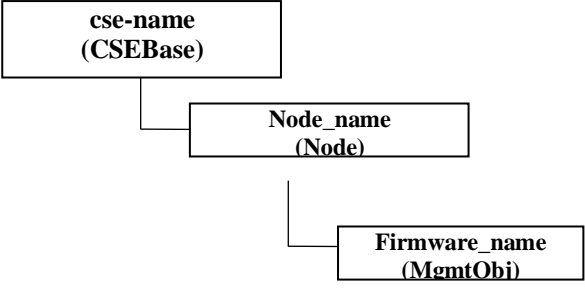
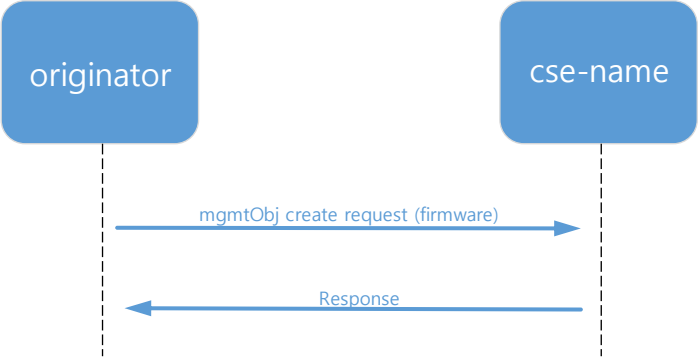


	<pre>"resourceType": 14 } MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "responseStatusCode": 2004, "requestIdentifier": "12345", "originatingTimestamp": "1580453281020" }</pre>
<p>Example with no RCN or RCN=1</p>	<pre>MQTT_API/NOD/DEL/001 MQTT_API/NOD/ DEL/001_RCN1 MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "from": "acp_admin", "operation": 4, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/node09", "resourceType": 14 } MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "responseStatusCode": 2004, "requestIdentifier": "12345", "originatingTimestamp": "1580453448356",</pre>



	<pre>"content": { "m2m:nod": { "hcl": "xxxx.yyyy.zzzz", "ct": "1580443658427", "ty": 14.0, "acpi": ["/vnpt/acp-31999e975bcac994"], "ri": "/vnpt/nod-06fe0a4b9bf907f5e", "lb": [], "lt": "1580453448369", "pi": "/vnpt", "ni": "1231239999", "mgca": "192.168.1.200", "rn": "node09" } }</pre>
--	---

Tạo Resource MgmtObj Firmware

API Id	HTTP_API/FWR/CRE/001 HTTP_API / FWR /CRE/001_RCN0 HTTP_API/ FWR /CRE/001_RCN1 HTTP_API/ FWR /CRE/001_RCN2 HTTP_API/ FWR /CRE/001_RCN3										
API Name	<firmware> resource CREATE										
Target Resource	<firmware >										
Description	API tạo resource <firmware > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["Firmware_name (MgmtObj)"] </pre>										
Call Flow											
HTTP Header Information	<table border="1" data-bbox="485 1697 1272 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

<p>Example with RCN=0</p>	<p>HTTP_API/FWR/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "fwr_mgo1", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", "url": "http://203.253.128.151:7579/firmware", "ud": true } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p>
----------------------------------	---

<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/FWR/CRE/001</p> <p>HTTP_API/FWR/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "fwr_mgo1", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", "url": "http://203.253.128.151:7579/firmware", "ud": true } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p>
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	<pre>{ "m2m:mgo": { "it": "20201009T095245", "mgd": 1001, "url": "http://203.253.128.151:7579/firmware", "ud": true, "et": "20301009T095245", "ct": "20201009T095245", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-cc504b5c54908015", "lbl": ["key1"], "pi": "/vnpt/nod-82f95af9b859e8c5", "vr": "1.0.0", "fwn": "test", "rn": "fwr_mgo1" } }</pre>
<p>Example with RCN=2</p>	<p>HTTP_API/FWR/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p>

	<pre>{ "m2m:mgo": { "rn": "fwr_mgo1", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", "url": "http://203.253.128.151:7579/firmware", "ud": true } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</p> <pre>{ "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1" }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API/GRP/CRE/001_RCN3</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json</p>

X-M2M-RI: 1234

X-M2M-RVI: 2a

```
{  
  "m2m:mgo": {  
    "rn": "fwr_mgo1",  
    "lbl": ["key1"],  
    "mgd": 1001,  
    "vr": "1.0.0",  
    "fwn": "test",  
    "url": "http://203.253.128.151:7579/firmware",  
    "ud": true  
  }  
}
```

HTTP Response:

201 Created

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

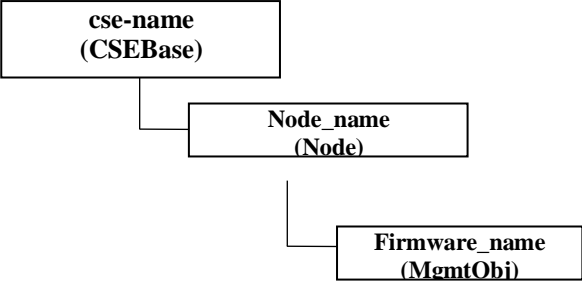
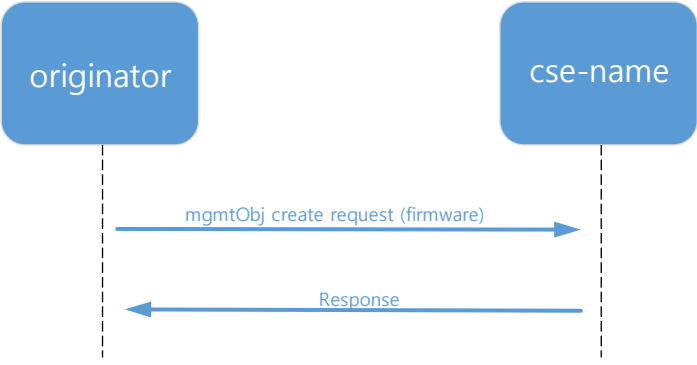
X-M2M-RSC: 2001

```
{  
  "m2m:mgo": {  
    "it": "20201009T095524",  
    "mgd": 1001,  
    "url": "http://203.253.128.151:7579/firmware",  
    "ud": true,  
    "et": "20301009T095524",  
    "ct": "20201009T095524",  
    "acpi": [  
      "/vnpt/acp-00952a1c7bd3322d"  
    ],  
  }  
}
```



	<pre>"ri": "/vnpt/mgo-d24a925854e6c8fa", "lbl": ["key1"], "pi": "/vnpt/nod-82f95af9b859e8c5", "vr": "1.0.0", "fwn": "test", "rn": "fwr_mgo1" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1" }</pre>
--	--

Giao thức MQTT:

API Id	MQTT_API/FWR/CRE/001 MQTT_API/FWR/CRE/001_RCN0 MQTT_API/FWR/CRE/001_RCN1 MQTT_API/FWR/CRE/001_RCN2 MQTT_API/FWR/CRE/001_RCN3
API Name	<firmware> resource CREATE
Target Resource	<firmware>
Description	API tạo resource <firmware> qua MQTT
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Firmware[Firmware_name (MgmtObj)] </pre>
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: mgmtObj create request (firmware) cse-name-->>originator: Response </pre>
Example with RCN=0	MQTT_API/FWR/CRE/001_RCN0 MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json MQTT Request Payload <pre> { "from": "acp_admin", "operation": 1, </pre>

	<pre>"resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "rn": "fwr_mgo2", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", "url": "http://203.253.128.151:7579/firmware", "ud": true } } }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/FWR/CRE/001</p> <p>MQTT_API/ FWR /CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin",</pre>


```
"operation": 1,  
"resultContent": 1,  
"requestIdentifier": "12345554",  
"to": "/vnpt/icc/nod_6a9a90fc920d6e2f38",  
"resourceType": 13,  
"content": {  
  "m2m:mgo": {  
    "rn": "fwr_mgo2",  
    "lbl": [  
      "key1"  
    ],  
    "mgd": 1001,  
    "vr": "1.0.0",  
    "fwn": "test",  
    "url": "http://203.253.128.151:7579/firmware",  
    "ud": true  
  }  
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "12345554",  
  "originatingTimestamp": "1602213939097",  
  "content": {  
    "m2m:mgo": {  
      "lt": "20201009T102539",  
      "mgd": 1001,  
      "url": "http://203.253.128.151:7579/firmware",  
      "ud": true,  
      "et": "20301009T102539",  
      "ct": "20201009T102539",  
    }  
  }  
}
```

	<pre> "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-860768e439256bf30", "lbl": ["key1"], "pi": "/vnpt/nod-82f95af9b859e8c5", "vr": "1.0.0", "fwn": "test", "rn": "fwr_mgo2" } } } </pre>
<p>Example with RCN=2</p>	<p>MQTT_API/NOD/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 1, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "rn": "fwr_mgo2", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", </pre>

	<pre> "url": "http://203.253.128.151:7579/firmware", "ud": true } } } </pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre> { "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1" } } </pre>
<p>Example with RCN=3</p>	<p>MQTT_API/NOD/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 1, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "rn": "fwr_mgo2", "lbl": ["key1"], "mgd": 1001, </pre>

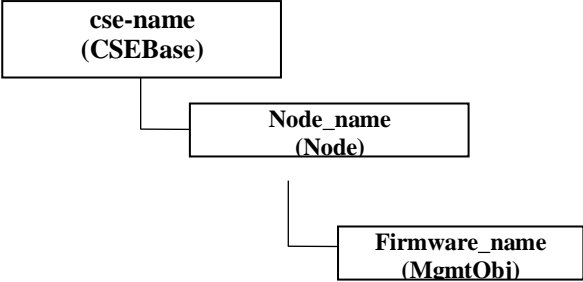
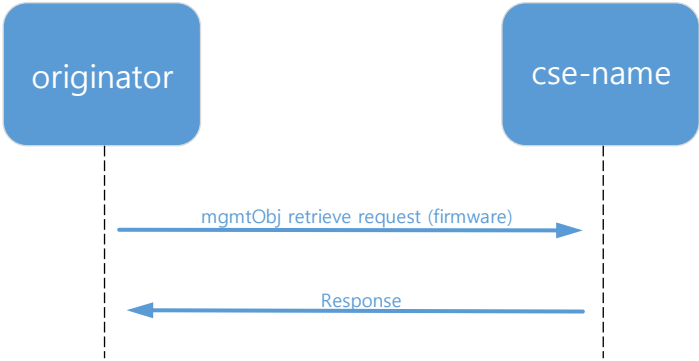
```
"vr": "1.0.0",  
"fwn": "test",  
"url": "http://203.253.128.151:7579/firmware",  
"ud": true  
}  
}  
}  
MQTT Response Topic: /oneM2M/resp[key được cấp]/json  
MQTT Response Payload  
{  
  "responseStatusCode":2001,  
  "requestIdentifier":"12345554",  
  "originatingTimestamp":"1602213939097",  
  "content":{  
    "m2m:mgo":{  
      "lt":"20201009T095524",  
      "mgd":1001,  
      "url":"http://203.253.128.151:7579/firmware",  
      "ud":true,  
      "et":"20301009T095524",  
      "ct":"20201009T095524",  
      "acpi":[  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri":"/vnpt/mgo-d24a925854e6c8fa",  
      "lb":[  
        "key1"  
      ],  
      "pi":"/vnpt/nod-82f95af9b859e8c5",  
      "vr":"1.0.0",  
      "fwn":"test",  
      "rn":"fwr_mgo1"  
    },  
    "m2m:uri":"/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1"
```



	}
	}

Truy vấn resource MgmtObj Firmware

Giao thức HTTP:

API Id	HTTP_API/FWR/RET/001 HTTP_API/ FWR/RET/001_RCN0 HTTP_API/ FWR / RET /001_RCN1 HTTP_API/ FWR / RET /001_RCN2 HTTP_API/ FWR / RET /001_RCN3										
API Name	<firmware> resource RETRIEVE										
Target Resource	<firmware >										
Description	API truy vấn thông tin <firmware > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["Firmware_name (MgmtObj)"] </pre>										
Call Flow	 <pre> sequenceDiagram participant Originator as originator participant CSE as cse-name Originator->>CSE: mgmtObj retrieve request (firmware) CSE-->>Originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="483 1697 1270 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

Example
with
RCN=1

HTTP_API/FWR/ RET/001_RCNO

HTTP Request:

GET /cse-name/node-name/resource_name?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2000

```
{
  "m2m:mgo": {
    "it": "20201009T113437",
    "mgd": 1001,
    "url": "http://203.253.128.151:7579/firmware",
    "ud": true,
    "et": "20301009T113437",
    "ct": "20201009T113437",
    "acpi": [
      "\/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "\/vnpt/mgo-3e1734ddb4893b0b09",
    "lbl": [
```

	<pre> "key1"], "pi": "/vnpt/nod-82f95af9b859e8c5", "vr": "1.0.0", "fwn": "test", "rn": "fwr_mgo1" } } </pre>
<p>Example with RCN=2</p>	<p>HTTP_API/FWR/ RET /001_RCN2</p> <p>HTTP Request:</p> <p>GET /cse-name/node-name/resource_name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2000</p> <pre> { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1" } </pre>

Example
with
RCN=3

HTTP_API/GRP/ RET /001_RCN3

HTTP Request:

GET /cse-name/node-name/resource_name?rcn=3 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

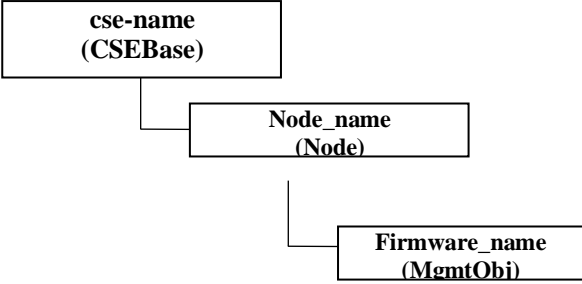
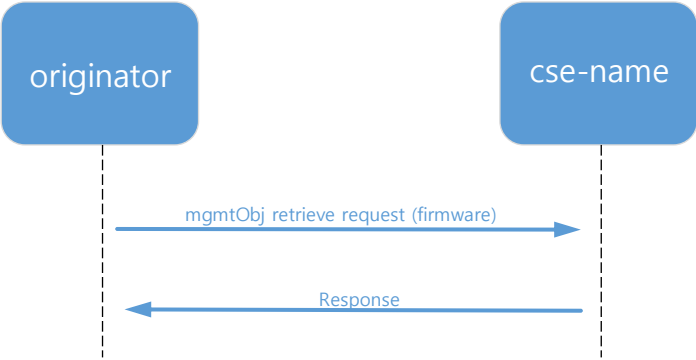
X-M2M-RSC: 2000

```
{
  "m2m:mgo": {
    "it": "20201009T095524",
    "mgd": 1001,
    "url": "http://203.253.128.151:7579/firmware",
    "ud": true,
    "et": "20301009T095524",
    "ct": "20201009T095524",
    "acpi": [
      "\/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "\/vnpt/mgo-d24a925854e6c8fa",
    "lbi": [
```



	<pre>"key1"], "pi": "/vnpt/nod-82f95af9b859e8c5", "vr": "1.0.0", "fwn": "test", "rn": "fwr_mgo1" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1" }</pre>
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Giao thức MQTT:

API Id	MQTT_API/FWR/ RET /001 MQTT _API/ FWR/ RET /001_RCNO MQTT _API/ FWR/ RET /001_RC�1 MQTT _API/ FWR/ RET /001_RC�2 MQTT _API/ FWR/ RET /001_RC�3
API Name	<firmware> resource RETRIEVE
Target Resource	<firmware>
Description	API tạo resource <firmware> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or	<p>MQTT_API/FWR/ RET /001</p> <p>MQTT_API/ FWR / RET /001_RC�1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{</pre>

RCN=1	<pre>"from": "acp_admin", "operation": 2, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2000, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606", "content":{ "m2m:mgo":{ "lt":"20201009T113437", "mgd":1001, "url":"http://203.253.128.151:7579/firmware", "ud":true, "et":"20301009T113437", "ct":"20201009T113437", "acpi":["/vnpt/acp-00952a1c7bd3322d"], "ri":"/vnpt/mgo-3e1734ddb4893b0b09", "lbl":["key1"], "pi":"/vnpt/nod-82f95af9b859e8c5", "vr":"1.0.0", "fwn":"test", "rn":"fwr_mgo1" } } }</pre>
-------	--

<p>Example with RCN=2</p>	<pre> } MQTT_API/FWR/CRE/001_RCN2 MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json MQTT Request Payload { "from": "acp_admin", "operation": 2, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp[key được cấp]/json MQTT Response Payload { "responseStatusCode": 2000, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1" } } </pre>
<p>Example with RCN=3</p>	<pre> MQTT_API/FWR/CRE/001_RCN3 MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json MQTT Request Payload { "from": "acp_admin", "operation": 2, "resultContent": 3, "requestIdentifier": "12345554", </pre>

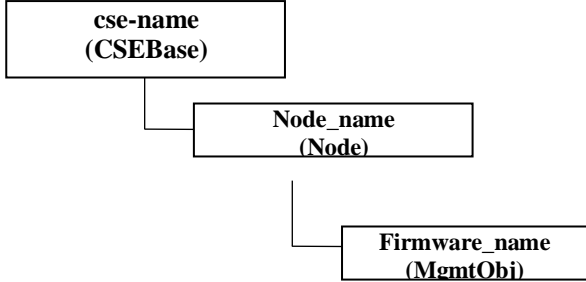
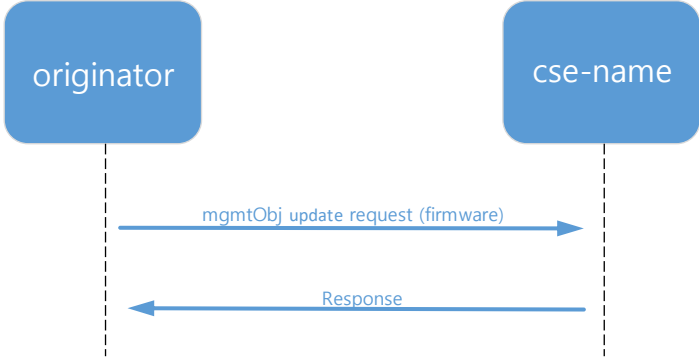
```
"to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1",  
"resourceType": 13  
}  
MQTT Response Topic: /oneM2M/resp[key được cấp]/json  
MQTT Response Payload  
{  
  "responseStatusCode":2000,  
  "requestIdentifier":"12345554",  
  "originatingTimestamp":"1602213939097",  
  "content":{  
    "m2m:mgo":{  
      "lt":"20201009T095524",  
      "mgd":1001,  
      "url":"http://203.253.128.151:7579/firmware",  
      "ud":true,  
      "et":"20301009T095524",  
      "ct":"20201009T095524",  
      "acpi":[  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri":"/vnpt/mgo-d24a925854e6c8fa",  
      "lbl":[  
        "key1"  
      ],  
      "pi":"/vnpt/nod-82f95af9b859e8c5",  
      "vr":"1.0.0",  
      "fwn":"test",  
      "rn":"fwr_mgo1"  
    },  
    "m2m:uri":"/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1"  
  }  
}
```

Sửa resource MgmtObj Firmware



**TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
CÔNG TY CÔNG NGHỆ THÔNG TIN VNPT**

Giao thức HTTP:

API Id	HTTP_API/FWR/UPD/001 HTTP_API/FWR/UPD/001_RCN0 HTTP_API/FWR/UPD/001_RCN1 HTTP_API/FWR/UPD/001_RCN2 HTTP_API/FWR/UPD/001_RCN3										
API Name	<firmware> resource UPDATE										
Target Resource	<firmware >										
Description	API sửa thuộc tính resource <firmware > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["Firmware_name (MgmtObj)"] </pre>										
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: mgmtObj update request (firmware) cse-name-->>originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="483 1695 1270 1960"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

<p>Example with RCN=0</p>	<p>HTTP_API/FWR/ UPD /001_RCNO</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "fwr_mgo1", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", "url": "http://203.253.128.151:7579/firmware", "ud": true } }</pre> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
----------------------------------	---

<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/FWR / UPD /001</p> <p>HTTP_API/FWR / UPD /001_RCN1</p> <p>HTTP Request:</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "fwr_mgo1", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", "url": "http://203.253.128.151:7579/firmware", "ud": true } }</pre> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p>
--	--

	<pre> X-M2M-RVI: 2a X-M2M-RSC: 2004 { "m2m:mgo": { "lt": "20201009T095245", "mgd": 1001, "url": "http://203.253.128.151:7579/firmware", "ud": true, "et": "20301009T095245", "ct": "20201009T095245", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-cc504b5c54908015", "lbl": ["key1"], "pi": "/vnpt/nod-82f95af9b859e8c5", "vr": "1.0.0", "fwn": "test", "rn": "fwr_mgo1" } } </pre>
<p>Example with RCN=2</p>	<p>HTTP_API/FWR/ UPD /001_RCN2</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p>

	<pre>X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:mgo": { "rn": "fwr_mgo1", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", "url": "http://203.253.128.151:7579/firmware", "ud": true } }</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:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1" }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API/GRP/UPD/001_RCN3</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665</p>

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

```
{  
  "m2m:mgo": {  
    "rn": "fwr_mgo1",  
    "lbl": ["key1"],  
    "mgd": 1001,  
    "vr": "1.0.0",  
    "fwn": "test",  
    "url": "http://203.253.128.151:7579/firmware",  
    "ud": true  
  }  
}
```

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2004

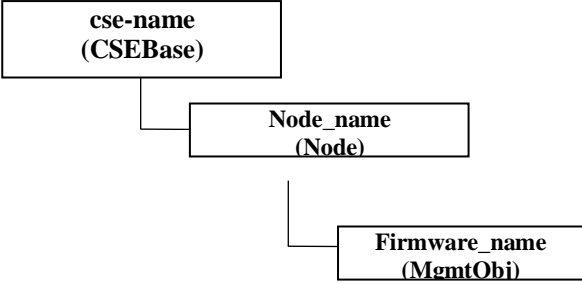
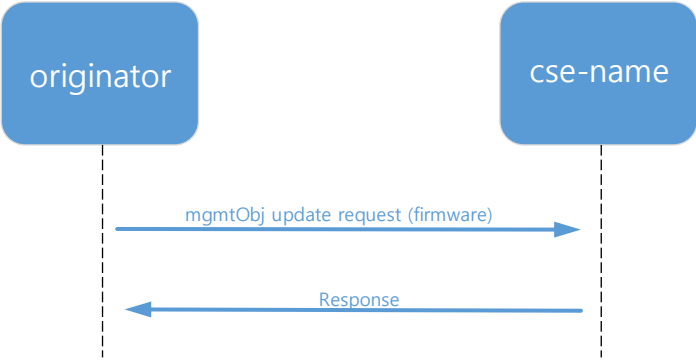
```
{  
  "m2m:mgo": {  
    "it": "20201009T095524",  
    "mgd": 1001,  
    "url": "http://203.253.128.151:7579/firmware",  
    "ud": true,  
    "et": "20301009T095524",  
    "ct": "20201009T095524",  
    "acpi": [  

```



	<pre>"/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-d24a925854e6c8fa", "lbl": ["key1"], "pi": "/vnpt/nod-82f95af9b859e8c5", "vr": "1.0.0", "fwn": "test", "rn": "fwr_mgo1" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1" }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/FWR/UPD/001 MQTT_API/FWR/UPD/001_RCN0 MQTT_API/FWR/UPD/001_RCN1 MQTT_API/FWR/UPD/001_RCN2 MQTT_API/FWR/UPD/001_RCN3
API Name	<firmware> resource UPDATE
Target Resource	<firmware>
Description	API sửa thuộc tính resource <firmware> qua MQTT
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["Firmware_name (MgmtObj)"] </pre>
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: mgmtObj update request (firmware) cse-name-->>originator: Response </pre>
Example with RCN=0	MQTT_API/FWR/UPD/001_RCN0 MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json MQTT Request Payload <pre> { "from": "acp_admin", "operation": 3, </pre>



	<pre>"resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1 ", "resourceType": 13, "content": { "m2m:mgo": { "rn": "fwr_mgo2", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", "url": "http://203.253.128.151:7579/firmware", "ud": true } } }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/FWR/UPD/001</p> <p>MQTT_API/ FWR /UPD/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin",</pre>


```
"operation": 3,  
"resultContent": 1,  
"requestIdentifier": "12345554",  
"to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1",  
"resourceType": 13,  
"content": {  
  "m2m:mgo": {  
    "rn": "fwr_mgo2",  
    "lbl": [  
      "key1"  
    ],  
    "mgd": 1001,  
    "vr": "1.0.0",  
    "fwn": "test",  
    "url": "http://203.253.128.151:7579/firmware",  
    "ud": true  
  }  
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{  
  "responseStatusCode": 2004,  
  "requestIdentifier": "12345554",  
  "originatingTimestamp": "1602213939097",  
  "content": {  
    "m2m:mgo": {  
      "lt": "20201009T102539",  
      "mgd": 1001,  
      "url": "http://203.253.128.151:7579/firmware",  
      "ud": true,  
      "et": "20301009T102539",  
      "ct": "20201009T102539",  
    }  
  }  
}
```

	<pre> "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-860768e439256bf30", "lbl": ["key1"], "pi": "/vnpt/nod-82f95af9b859e8c5", "vr": "1.0.0", "fwn": "test", "rn": "fwr_mgo2" } } } </pre>
<p>Example with RCN=2</p>	<p>MQTT_API/NOD/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 3, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1", "resourceType": 13, "content": { "m2m:mgo": { "rn": "fwr_mgo2", "lbl": ["key1"], "mgd": 1001, "vr": "1.0.0", "fwn": "test", </pre>

	<pre> "url": "http://203.253.128.151:7579/firmware", "ud": true } } } </pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre> { "responseStatusCode": 2004, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1" } } </pre>
<p>Example with RCN=3</p>	<p>MQTT_API/NOD/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 3, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1", "resourceType": 13, "content": { "m2m:mgo": { "rn": "fwr_mgo2", "lbl": ["key1"], "mgd": 1001, </pre>

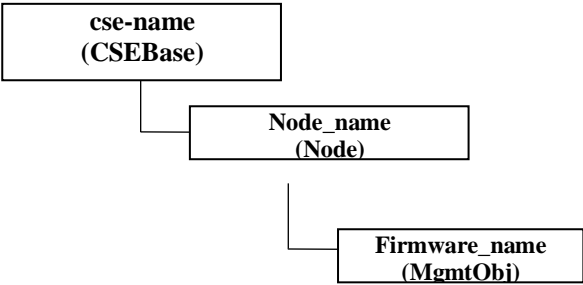
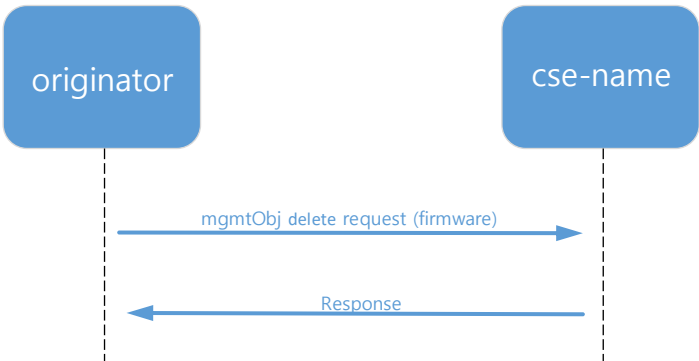
```
"vr": "1.0.0",  
"fwn": "test",  
"url": "http://203.253.128.151:7579/firmware",  
"ud": true  
}  
}  
}  
MQTT Response Topic: /oneM2M/resp[key được cấp]/json  
MQTT Response Payload  
{  
  "responseStatusCode":2004,  
  "requestIdentifier":"12345554",  
  "originatingTimestamp":"1602213939097",  
  "content":{  
    "m2m:mgo":{  
      "lt":"20201009T095524",  
      "mgd":1001,  
      "url":"http://203.253.128.151:7579/firmware",  
      "ud":true,  
      "et":"20301009T095524",  
      "ct":"20201009T095524",  
      "acpi":[  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri":"/vnpt/mgo-d24a925854e6c8fa",  
      "lb":[  
        "key1"  
      ],  
      "pi":"/vnpt/nod-82f95af9b859e8c5",  
      "vr":"1.0.0",  
      "fwn":"test",  
      "rn":"fwr_mgo1"  
    },  
    "m2m:uri":"/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1"
```



	}
	}

Xóa resource MgmtObj Firmware

Giao thức HTTP:

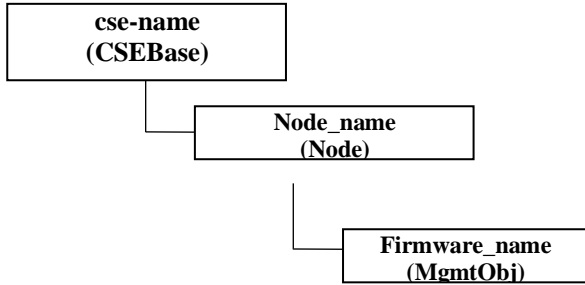
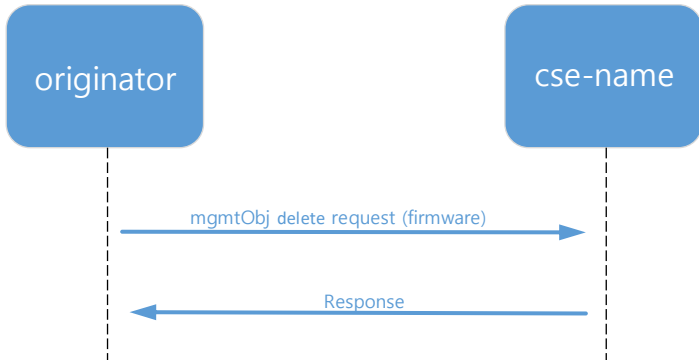
API Id	HTTP_API/FWR/DEL/001 HTTP_API/ FWR/ DEL /001_RCNO HTTP_API/ FWR / DEL /001_RCNI										
API Name	<firmware> resource DELETE										
Target Resource	<firmware >										
Description	API xóa <firmware > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Firmware[Firmware_name (MgmtObj)] </pre>										
Call Flow											
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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										
	HTTP_API/FWR/ DEL/001_RCNO										

<p>Example with RCN=0</p>	<p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2002</p>
<p>Example with RCN=1</p>	<p>HTTP_API/FWR/ DEL /001_RCN1</p> <p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p>

```
200 Ok
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2002

{
  "m2m:mgo": {
    "it": "20201009T095524",
    "mgd": 1001,
    "url": "http://203.253.128.151:7579/firmware",
    "ud": true,
    "et": "20301009T095524",
    "ct": "20201009T095524",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-d24a925854e6c8fa",
    "lbl": [
      "key1"
    ],
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "vr": "1.0.0",
    "fwn": "test",
    "rn": "fwr_mgo1"
  }
}
```

Giao thức MQTT:

API Id	MQTT_API/FWR/ RET /001 MQTT _API/ FWR/ RET /001_RCNO MQTT _API/ FWR/ RET /001_RCN1
API Name	<firmware> resource RETRIEVE
Target Resource	<firmware>
Description	API xóa resource <firmware> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or RCN=0	<p>MQTT_API/FWR/ DEL /001 MQTT_API/ FWR / DEL /001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4,</pre>

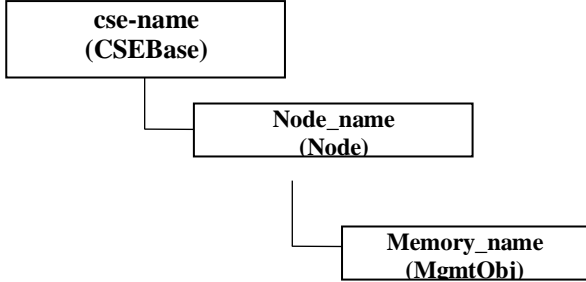
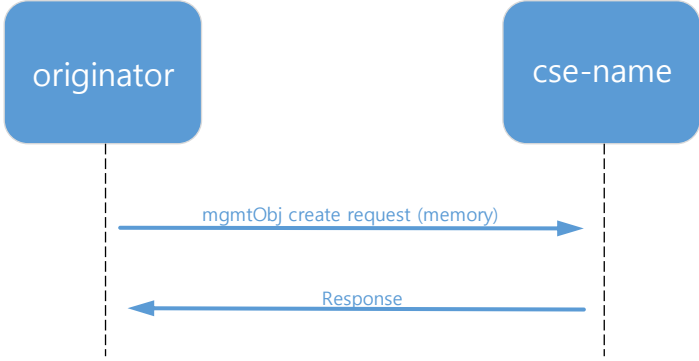
	<pre>"resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2002, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606" }</pre>
<p>Example with RCN=1</p>	<p>MQTT_API/FWR/CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1", "resourceType": 13 }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2002, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:mgo":{ "lt":"20201009T113437",</pre>



	<pre>"mgd":1001, "url":"http://203.253.128.151:7579/firmware", "ud":true, "et":"20301009T113437", "ct":"20201009T113437", "acpi":["/vnpt/acp-00952a1c7bd3322d"], "ri":"/vnpt/mgo-3e1734ddb4893b0b09", "lbl":["key1"], "pi":"/vnpt/nod-82f95af9b859e8c5", "vr":"1.0.0", "fwn":"test", "rn":"fwr_mgo1" } } }</pre>
--	--

Tạo resource MgmtObj Memory

Giao thức HTTP:

API Id	HTTP_API/MEM/CRE/001 HTTP_API/ MEM /CRE/001_RCN0 HTTP_API/ MEM /CRE/001_RCN1 HTTP_API/ MEM /CRE/001_RCN2 HTTP_API/ MEM /CRE/001_RCN3										
API Name	<memory> resource CREATE										
Target Resource	< memory >										
Description	API tạo resource < memory > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Mgmt[Memory_name (MgmtObj)] </pre>										
Call Flow	 <pre> sequenceDiagram participant O as originator participant C as cse-name O->>C: mgmtObj create request (memory) C-->>O: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="483 1697 1270 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

<p>Example with RCN=0</p>	<p>HTTP_API/MEM/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "mem_mgo1", "lbl": ["memory"], "mgd": 1003, "mma": 10, "mmt": 100 } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p>
	<p>HTTP_API/MEM/CRE/001</p> <p>HTTP_API/MEM/CRE/001_RCN1</p>

**Example
with
no RCN or
RCN=1**

HTTP Request:

POST /cse-name/node-name?rcn=1 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: /CAE56302832/AE16026458665
Content-Type: application/json; ty=13
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a

```
{  
  "m2m:mgo": {  
    "rn": "mem_mgo1",  
    "lbl": ["memory"],  
    "mgd": 1003,  
    "mma": 10,  
    "mmt": 100  
  }  
}
```

HTTP Response:

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

```
{  
  "m2m:mgo": {  
    "mma": 10,  
    "ct": "20201009T140840",
```

	<pre> "mmt": 100, "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-490c06a6479cd0d33", "lbl": ["memory"], "it": "20201009T140840", "pi": "/vnpt/nod-82f95af9b859e8c5", "mgd": 1003, "rn": "mem_mgo1", "et": "20301009T140840" } } </pre>
<p>Example with RCN=2</p>	<p>HTTP_API/MEM/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre> { "m2m:mgo": { "rn": "mem_mgo1", "lbl": ["memory"], "mgd": 1003, "mma": 10, </pre>

	<pre> "mmt": 100 } } HTTP Response: 201 Created Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1" } </pre>
<p>Example with RCN=3</p>	<p>HTTP_API/MEM/CRE/001_RCN3</p> <p>HTTP Request:</p> <pre> POST /cse-name/node-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:mgo": { "rn": "mem_mgo1", "lbl": ["memory"], "mgd": 1003, "mma": 10, </pre>

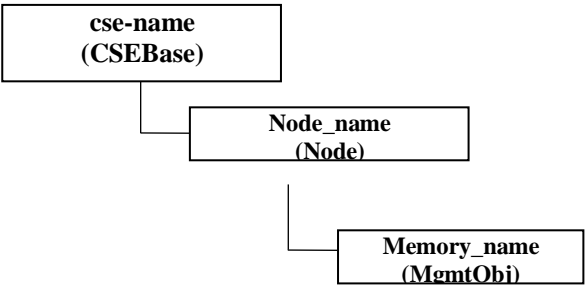
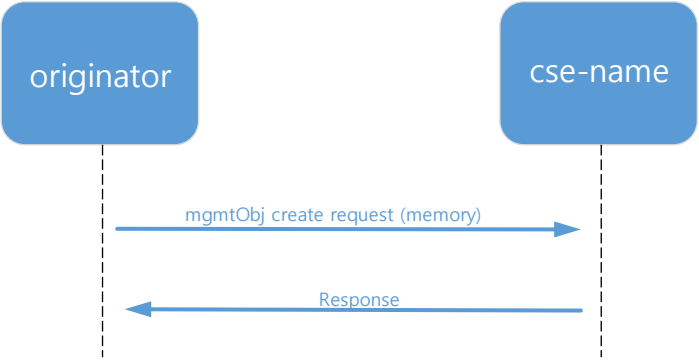

```
"mmt": 100
}
}

HTTP Response:

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

{
  "m2m:mgo": {
    "mma": 10,
    "ct": "20201009T140840",
    "mmt": 100,
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-490c06a6479cd0d33",
    "lbl": [
      "memory"
    ],
    "it": "20201009T140840",
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "mgd": 1003,
    "rn": "mem_mgo1",
    "et": "20301009T140840"
  },
  "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1"
}
```

Giao thức MQTT:

API Id	MQTT_API/ MEM /CRE/001 MQTT_API/ MEM /CRE/001_RCN0 MQTT_API/ MEM /CRE/001_RCN1 MQTT_API/ MEM /CRE/001_RCN2 MQTT_API/ MEM /CRE/001_RCN3
API Name	<memory> resource CREATE
Target Resource	< memory >
Description	API tạo resource < memory > qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	<p>MQTT_API/MEM/CRE/001_RCN0</p> <p>MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin",</pre>

	<pre> "operation": 1, "resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "rn": "mem_mgo1", "lbl": ["memory"], "mgd": 1003, "mma": 10, "mmt": 100 } } </pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre> { "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" } </pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/MEM/CRE/001</p> <p>MQTT_API/MEM/CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt/json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 1, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", </pre>

```
"resourceType": 13,  
"content": {  
  "m2m:mgo": {  
    "rn": "mem_mgo1",  
    "lbl": ["memory"],  
    "mgd": 1003,  
    "mma": 10,  
    "mmt": 100  
  }  
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{  
  "responseStatusCode":2001,  
  "requestIdentifier":"12345554",  
  "originatingTimestamp":"1602213939097",  
  "content":{  
    "m2m:mgo":{  
      "mma":10,  
      "ct":"20201009T140840",  
      "mmt":100,  
      "acpi":[  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri":"/vnpt/mgo-490c06a6479cd0d33",  
      "lbl":[  
        "memory"  
      ],  
      "lt":"20201009T140840",  
      "pi":"/vnpt/nod-82f95af9b859e8c5",  
      "mgd":1003,  
      "rn":"mem_mgo1",
```

	<pre>"et": "20301009T140840" } } }</pre>
<p>Example with RCN=2</p>	<p>MQTT_API/NOD/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "m": "mem_mgo1", "bl": ["memory"], "mgd": 1003, "mma": 10, "mmt": 100 } } }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": {</pre>

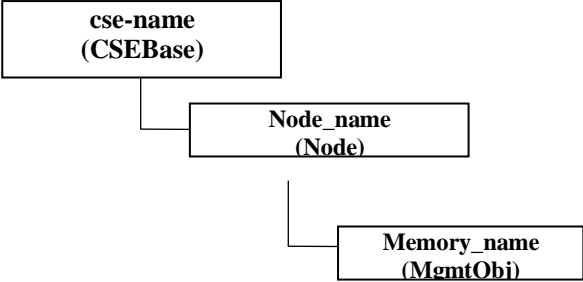
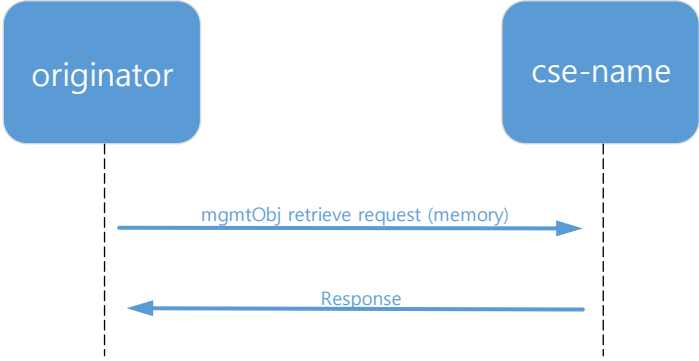
	<pre>"m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/NOD/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "rn": "mem_mgo1", "lb": ["memory"], "mgd": 1003, "mma": 10, "mmt": 100 } } }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": {</pre>



	<pre>"m2m:mgo":{ "mma":10, "ct":"20201009T140840", "mmt":100, "acpi":["/vnpt/acp-00952a1c7bd3322d"], "ri":"/vnpt/mgo-490c06a6479cd0d33", "lb":["memory"], "lt":"20201009T140840", "pi":"/vnpt/nod-82f95af9b859e8c5", "mgd":1003, "m":"mem_mgo1", "et":"20301009T140840" }, "m2m:uri":"/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1" } }</pre>
--	--

Truy vấn thông tin resource MgmtObj Memory

Giao thức HTTP:

API Id	HTTP_API/MEM/RET/001 HTTP_API/ MEM /RET/001_RCN0 HTTP_API/ MEM / RET /001_RCN1 HTTP_API/ MEM / RET /001_RCN2 HTTP_API/ MEM / RET /001_RCN3										
API Name	<memory> resource RETRIEVE										
Target Resource	<memory >										
Description	API truy vấn thông tin <memorys > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Mgmt[Memory_name (MgmtObj)] </pre>										
Call Flow	 <pre> sequenceDiagram participant O as originator participant C as cse-name O->>C: mgmtObj retrieve request (memory) C-->>O: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1697 1270 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

Example
with
RCN=1

HTTP_API/MEM/ RET/001_RCNO

HTTP Request:

GET /cse-name/node-name/resource_name?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2000

```
{
  "m2m:mgo": {
    "mma": 10,
    "ct": "20201009T140840",
    "mmt": 100,
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-490c06a6479cd0d33",
    "lbl": [
      "memory"
    ],
    "lt": "20201009T140840",
```



	<pre>"pi": "/vnpt/nod-82f95af9b859e8c5", "mgd": 1003, "rn": "mem_mgo1", "et": "20301009T140840" } }</pre>
<p>Example with RCN=2</p>	<p>HTTP_API/MEM/ RET /001_RCN2</p> <p>HTTP Request:</p> <p>GET /cse-name/node-name/resource_name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 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:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1" }</pre>
	<p>HTTP_API/MEM/ RET /001_RCN3</p>

Example
with
RCN=3

HTTP Request:

```
GET /cse-name/node-name/resource_name?rcn=3 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: /CAE56302832/AE16026458665
Content-Type: application/json; ty=13
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

HTTP Response:

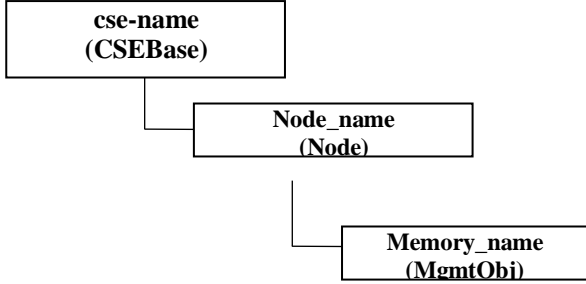
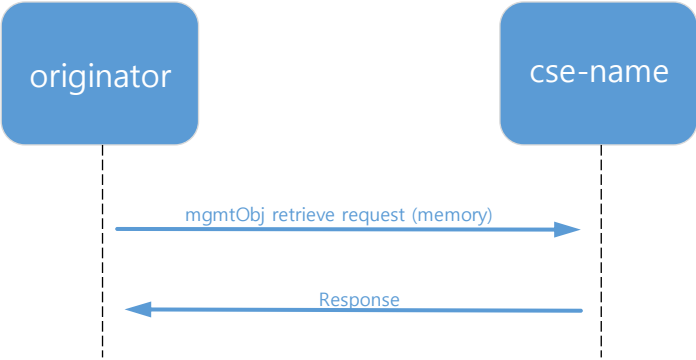
```
200 Ok
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2000

{
  "m2m:mgo": {
    "mma": 10,
    "ct": "20201009T140840",
    "mmt": 100,
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-490c06a6479cd0d33",
    "lbl": [
      "memory"
    ],
    "lt": "20201009T140840",
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "mgd": 1003,
    "rn": "mem_mgo1",
```



	<pre>"et": "20301009T140840" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1" }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/MEM/ RET /001 MQTT _API/ MEM / RET /001_RCN0 MQTT _API/ MEM / RET /001_RCN1 MQTT _API/ MEM / RET /001_RCN2 MQTT _API/ MEM / RET /001_RCN3
API Name	<memory> resource RETRIEVE
Target Resource	<memoryss>
Description	API tạo resource <memory> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or	<p>MQTT_API/MEM/ RET /001</p> <p>MQTT_API/ MEM / RET /001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{</pre>



RCN=1	<pre>"from": "acp_admin", "operation": 2, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2000, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606", "content":{ "m2m:mgo": { "mma": 10, "ct": "20201009T140840", "mmt": 100, "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-490c06a6479cd0d33", "lbl": ["memory"], "lt": "20201009T140840", "pi": "/vnpt/nod-82f95af9b859e8c5", "mgd": 1003, "rn": "mem_mgo1", "et": "20301009T140840" } } }</pre>

<p>Example with RCN=2</p>	<p>MQTT_API/MEM/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 2, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1", "resourceType": 13 }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/MEM/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 2, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ mem_mgo1", "resourceType": 13 }</pre>

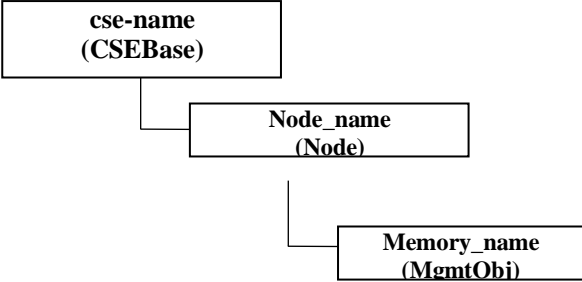
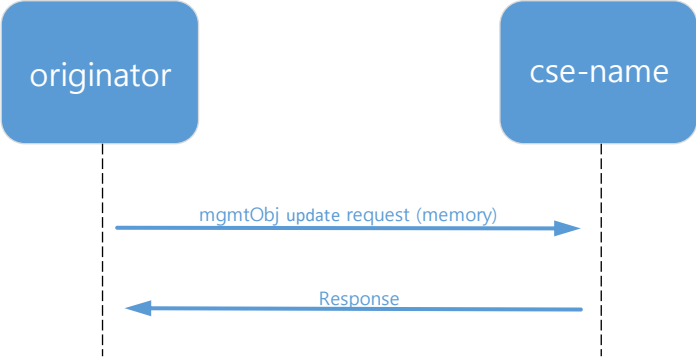
MQTT Response Topic: /oneM2M/resp[key được cấp]/json

MQTT Response Payload

```
{
  "responseStatusCode":2001,
  "requestIdentifier":"12345554",
  "originatingTimestamp":"1602213939097",
  "content":{
    "m2m:mgo":{
      "mma":10,
      "ct":"20201009T140840",
      "mmt":100,
      "acpi":[
        "/vnpt/acp-00952a1c7bd3322d"
      ],
      "ri":"/vnpt/mgo-490c06a6479cd0d33",
      "bl":[
        "memory"
      ],
      "lt":"20201009T140840",
      "pi":"/vnpt/nod-82f95af9b859e8c5",
      "mgd":1003,
      "rn":"mem_mgo1",
      "et":"20301009T140840"
    },
    "m2m:uri":"/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1"
  }
}
```

Sửa resource MgmtObj Memory

Giao thức HTTP:

API Id	HTTP_API/MEM/ UPD /001 HTTP_API/ MEM / UPD /001_RCNO HTTP_API/ MEM / UPD /001_RC�1 HTTP_API/ MEM / UPD /001_RC�2 HTTP_API/ MEM / UPD /001_RC�3										
API Name	<memory> resource UPDATE										
Target Resource	<memory >										
Description	API sửa thuộc tính resource <memory > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Mem[Memory_name (MgmtObj)] </pre>										
Call Flow	 <pre> sequenceDiagram participant Originator as originator participant CSE as cse-name Originator->>CSE: mgmtObj update request (memory) CSE-->>Originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1697 1270 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

<p>Example with RCN=0</p>	<p>HTTP_API/MEM/ UPD /001_RCN0</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "mem_mgo1", "lbl": ["memory"], "mgd": 1003, "mma": 10, "mmt": 100 } }</pre> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
	<p>HTTP_API/ MEM / UPD /001</p> <p>HTTP_API/ MEM / UPD /001_RCN1</p>



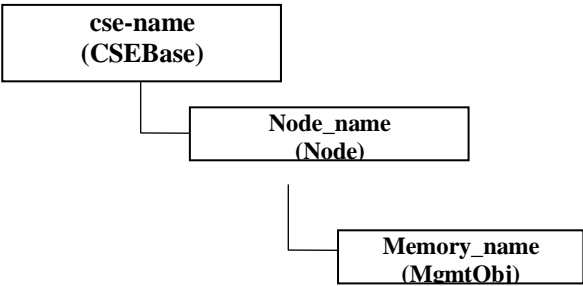
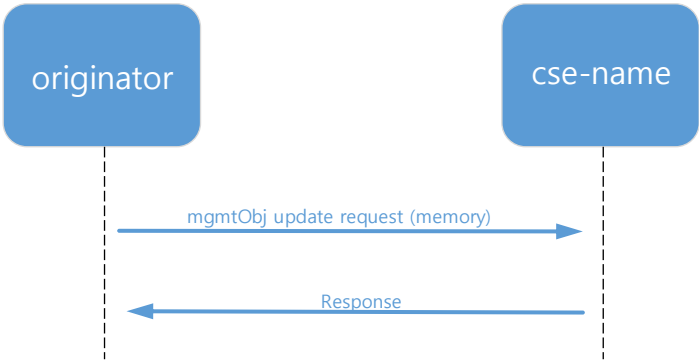
<p><i>Example with no RCN or RCN=1</i></p>	<p>HTTP Request:</p> <p>HTTP Request:</p> <pre>PUT /cse-name/node-name/resource-name?rcn=1 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</pre> <pre>{ "m2m:mgo": { "rn": "mem_mgo1", "lbl": ["memory"], "mgd": 1003, "mma": 10, "mmt": 100 } }</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:mgo": {</pre>
--	---

	<pre> "mma": 10, "ct": "20201009T140840", "mmt": 100, "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-490c06a6479cd0d33", "lbl": ["memory"], "it": "20201009T140840", "pi": "/vnpt/nod-82f95af9b859e8c5", "mgd": 1003, "rn": "mem_mgo1", "et": "20301009T140840" } </pre>
<p>Example with RCN=2</p>	<p>HTTP_API/MEM/ UPD /001_RCN2</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre> { "m2m:mgo": { "rn": "mem_mgo1", "lbl": ["memory"], </pre>

	<pre> "mgd": 1003, "mma": 10, "mmt": 100 } } HTTP Response: 200 Ok Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004 { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1" } </pre>
<p>Example with RCN=3</p>	<p>HTTP_API/MEM/ UPD /001_RCN3</p> <p>HTTP Request:</p> <pre> PUT /cse-name/node-name/resource-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:mgo": { "rn": "mem_mgo1", "lbl": ["memory"], "mgd": 1003, </pre>

```
"mma": 10,  
  "mmt": 100  
}  
}  
HTTP Response:  
  
200 Ok  
Content-Type: application/json  
X-M2M-RI: 1234  
X-M2M-RVI: 2a  
X-M2M-RSC: 2004  
  
{  
  "m2m:mgo": {  
    "mma": 10,  
    "ct": "20201009T140840",  
    "mmt": 100,  
    "acpi": [  
      "/vnpt/acp-00952a1c7bd3322d"  
    ],  
    "ri": "/vnpt/mgo-490c06a6479cd0d33",  
    "lbl": [  
      "memory"  
    ],  
    "it": "20201009T140840",  
    "pi": "/vnpt/nod-82f95af9b859e8c5",  
    "mgd": 1003,  
    "rn": "mem_mgo1",  
    "et": "20301009T140840"  
  },  
  "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1"  
}
```

Giao thức MQTT:

API Id	MQTT_API/MEM/UPD/001 MQTT_API/MEM/UPD/001_RCNO MQTT_API/MEM/UPD/001_RCNI MQTT_API/MEM/UPD/001_RCNI MQTT_API/MEM/UPD/001_RCNI
API Name	<memory> resource UPDATE
Target Resource	<memory>
Description	API sửa thuộc tính resource <memory> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	MQTT_API/MEM/UPD/001_RCNO MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json MQTT Request Payload <pre>{ "from": "acp_admin",</pre>



	<pre>"operation":3, "resultContent":0, "requestIdentifier":"12345554", "to":"/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1 ", "resourceType":13, "content":{ "m2m:mgo":{ "rn":"mem_mgo1", "lbl":["memory"], "mgd":1003, "mma":10, "mmt":100 } } }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/MEM/UPD/001</p> <p>MQTT_API/ MEM /UPD/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from":"acp_admin", "operation":3,</pre>


```
"resultContent":1,  
"requestIdentifier":"12345554",  
"to":"/vnpt/icc/nod_6a9a90fc920d6e2f38/ mem_mgo1",  
"resourceType":13,  
"content":{  
  "m2m:mgo":{  
    "rn":"mem_mgo1",  
    "lbl":[  
      "memory"  
    ],  
    "mgd":1003,  
    "mma":10,  
    "mmt":100  
  }  
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{  
  "responseStatusCode":2004,  
  "requestIdentifier":"12345554",  
  "originatingTimestamp":"1602213939097",  
  "content":{  
    "m2m:mgo":{  
      "mma":10,  
      "ct":"20201009T140840",  
      "mmt":100,  
      "acpi":[  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri":"/vnpt/mgo-490c06a6479cd0d33",  
      "lbl":[  
        "memory"  
      ],  
    }  
  }  
}
```



	<pre>"lt":"20201009T140840", "pi":"/vnpt/nod-82f95af9b859e8c5", "mgd":1003, "rn":"mem_mgo1", "et":"20301009T140840" } } }</pre>
<p>Example with RCN=2</p>	<p>MQTT_API/MEM/UPD/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from":"acp_admin", "operation":3, "resultContent":2, "requestIdentifier":"12345554", "to":"/vnpt/icc/nod_6a9a90fc920d6e2f38/ mem_mgo1", "resourceType":13, "content":{ "m2m:mgo":{ "rn":"mem_mgo1", "lbl":["memory"], "mgd":1003, "mma":10, "mmt":100 } } }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{</pre>

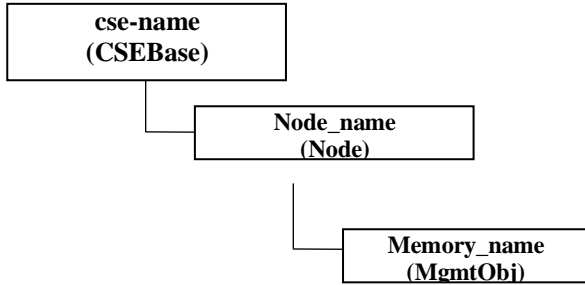
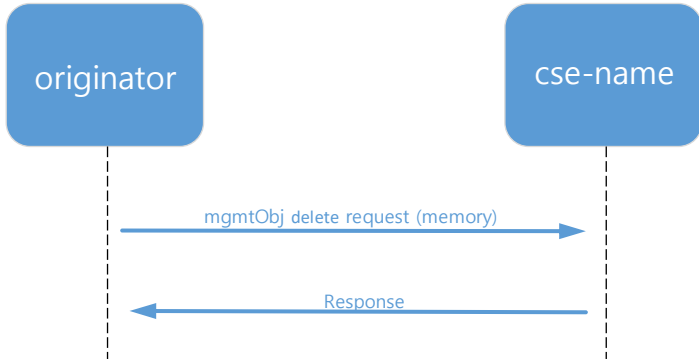
	<pre>"responseStatusCode": 2004, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/MEM/UPD/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ mem_mgo1", "resourceType": 13, "content": { "m2m:mgo": { "m": "mem_mgo1", "lb": ["memory"], "mgd": 1003, "mma": 10, "mmt": 100 } } }</pre> <p>}MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2004,</pre>



	<pre>"requestIdentifier":"12345554", "originatingTimestamp":"1602213939097", "content":{ "m2m:mgo":{ "mma":10, "ct":"20201009T140840", "mmt":100, "acpi":["/vnpt/acp-00952a1c7bd3322d"], "ri":"/vnpt/mgo-490c06a6479cd0d33", "lb":["memory"], "lt":"20201009T140840", "pi":"/vnpt/nod-82f95af9b859e8c5", "mgd":1003, "rn":"mem_mgo1", "et":"20301009T140840" }, "m2m:uri":"/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1" }</pre>
--	---

Xóa resource memory

Giao thức HTTP:

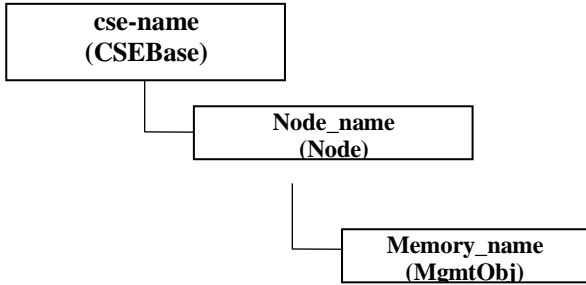
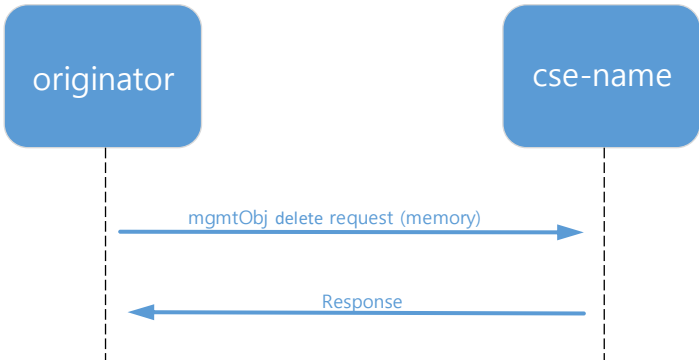
API Id	HTTP_API/MEM/DEL/001 HTTP_API/ MEM/ DEL /001_RCNO HTTP_API/ MEM / DEL /001_RCNI										
API Name	<memory> resource DELETE										
Target Resource	<memory >										
Description	API xóa <memory > qua HTTP										
Resource Structure before Sending Request											
Call Flow											
HTTP Header Information	<table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										
	HTTP_API/MEM/ DEL/001_RCNO										

<p>Example with RCN=0</p>	<p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2002</p>
<p>Example with RCN=1</p>	<p>HTTP_API/FWR/ DEL /001_RCN1</p> <p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p>

```
200 Ok
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2002

{
  "m2m:mgo": {
    "mma": 10,
    "ct": "20201009T140840",
    "mmt": 100,
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-490c06a6479cd0d33",
    "lbl": [
      "memory"
    ],
    "lt": "20201009T140840",
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "mgd": 1003,
    "rn": "mem_mgo1",
    "et": "20301009T140840"
  }
}
```

Giao thức MQTT:

API Id	MQTT_API/MEM/ RET /001 MQTT _API/ MEM/ RET /001_RCNO MQTT _API/ MEM/ RET /001_RCNI
API Name	<memory> resource DELETE
Target Resource	<memory>
Description	API xóa resource <memory> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or RCN=0	<p>MQTT_API/MEM/ DEL /001 MQTT_API/ MEM / DEL /001_RCNI</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4,</pre>

	<pre>"resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2002, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606" }</pre>
<p>Example with RCN=1</p>	<p>MQTT_API/FWR/CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/mem_mgo1", "resourceType": 13 }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2002, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:mgo": { "mma": 10,</pre>

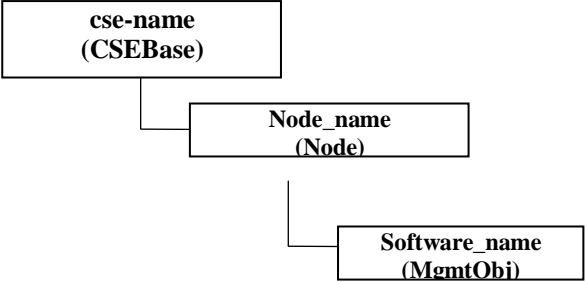
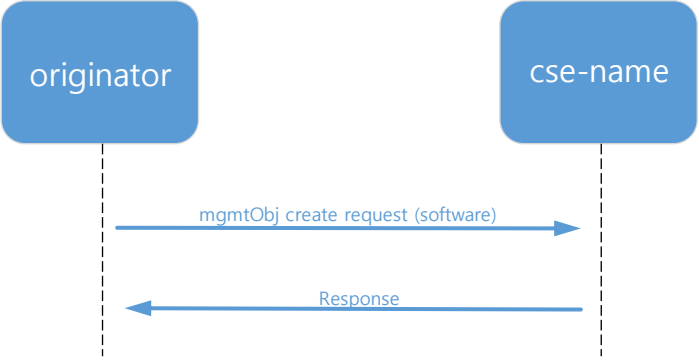


	<pre>"ct": "20201009T140840", "mmt": 100, "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-490c06a6479cd0d33", "lbl": ["memory"], "lt": "20201009T140840", "pi": "/vnpt/nod-82f95af9b859e8c5", "mgd": 1003, "rn": "mem_mgo1", "et": "20301009T140840" } } }</pre>
--	---

MgmtObj Software

Tạo resource software

Giao thức HTTP:

API Id	HTTP_API/ SWR /CRE/001 HTTP_API/ SWR /CRE/001_RCN0 HTTP_API/ SWR /CRE/001_RCN1 HTTP_API/ SWR /CRE/001_RCN2 HTTP_API/ SWR /CRE/001_RCN3										
API Name	<software> resource CREATE										
Target Resource	<software >										
Description	API tạo resource <software > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["Software_name (MgmtObj)"] </pre>										
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: mgmtObj create request (software) cse-name-->>originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1697 1272 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

<p>Example with RCN=0</p>	<p>HTTP_API/SWR/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "swr_test", "lbl": ["key1"], "mgd": 1002, "vr": "1.0.0", "swn": "test", "url": "http://203.253.128.151:7579/software" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p>
	<p>HTTP_API/SWR/CRE/001</p> <p>HTTP_API/SWR/CRE/001_RCN1</p>

**Example
with
no RCN or
RCN=1**

HTTP Request:

```
POST /cse-name/node-name?rcn=1 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: /CAE56302832/AE16026458665
Content-Type: application/json; ty=13
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

```
{
  "m2m:mgo": {
    "rn": "swr_test",
    "lbl": ["key1"],
    "mgd": 1002,
    "vr": "1.0.0",
    "swn": "test",
    "url": "http://203.253.128.151:7579/software"
  }
}
```

HTTP Response:

```
201 Created
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2001
```

```
{
  "m2m:mgo": {
    "ct": "20201009T144211",
```

	<pre> "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-c7620f42b561a10d", "lbl": ["key1"], "it": "20201009T144211", "pi": "/vnpt/nod-82f95af9b859e8c5", "swn": "test", "mgd": 1002, "vr": "1.0.0", "rn": "swr_test", "url": "http://203.253.128.151:7579/software", "et": "20301009T144211" } </pre>
<p>Example with RCN=2</p>	<p>HTTP_API/SWR/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre> { "m2m:mgo": { "rn": "swr_test", "lbl": ["key1"], </pre>

	<pre>"mgd": 1002, "vr": "1.0.0", "swn": "test", "url": "http://203.253.128.151:7579/software" } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</p> <pre>{ "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test" }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API/GRP/CRE/001_RCN3</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "swr_test",</pre>

```
"lbl": ["key1"],  
"mgd": 1002,  
"vr": "1.0.0",  
"swn": "test",  
"url": "http://203.253.128.151:7579/software"  
}  
}
```

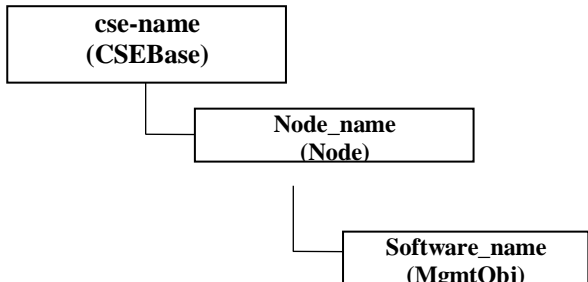
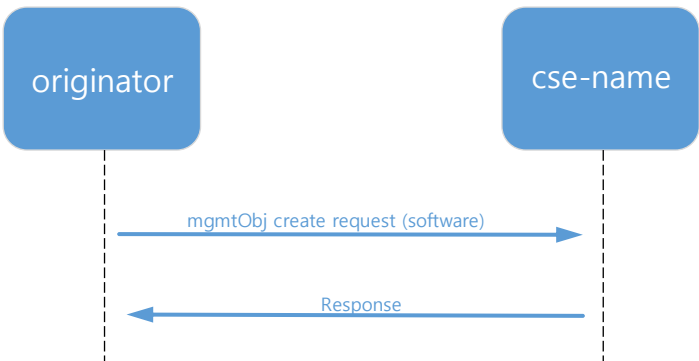
HTTP Response:

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

```
{  
  "m2m:mgo": {  
    "ct": "20201009T144211",  
    "acpi": [  
      "/vnpt/acp-00952a1c7bd3322d"  
    ],  
    "ri": "/vnpt/mgo-c7620f42b561a10d",  
    "lbl": [  
      "key1"  
    ],  
    "it": "20201009T144211",  
    "pi": "/vnpt/nod-82f95af9b859e8c5",  
    "swn": "test",  
    "mgd": 1002,  
    "vr": "1.0.0",  
    "rn": "swr_test",  
    "url": "http://203.253.128.151:7579/software",  
    "et": "20301009T144211"
```


	<pre> }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test" } </pre>
--	--

Giao thức MQTT:

API Id	MQTT_API/SWR/CRE/001 MQTT_API/SWR/CRE/001_RCN0 MQTT_API/SWR/CRE/001_RCN1 MQTT_API/SWR/CRE/001_RCN2 MQTT_API/SWR/CRE/001_RCN3
API Name	<software> resource CREATE
Target Resource	<software>
Description	API tạo resource <software> qua MQTT
Resource Structure before Sending Request	
Call Flow	

<p>Example with RCN=0</p>	<p>MQTT_API/SWR/CRE/001_RCN0</p> <p>MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "m": "swr_test", "lbl": ["key1"], "mgd": 1002, "vr": "1.0.0", "swn": "test", "url": "http://203.253.128.151:7579/software" } } }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" }</pre>
	<p>MQTT_API/SWR/CRE/001</p> <p>MQTT_API/SWR/CRE/001_RCN1</p>

**Example
with
no RCN or
RCN=1**

MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json

MQTT Request Payload

```
{
  "from": "acp_admin",
  "operation": 1,
  "resultContent": 1,
  "requestIdentifier": "12345554",
  "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38",
  "resourceType": 13,
  "content": {
    "m2m:mgo": {
      "rn": "swr_test",
      "lbl": [
        "key1"
      ],
      "mgd": 1002,
      "vr": "1.0.0",
      "swn": "test",
      "url": "http://203.253.128.151:7579/software"
    }
  }
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{
  "responseStatusCode": 2001,
  "requestIdentifier": "12345554",
  "originatingTimestamp": "1602213939097",
  "content": {
    "m2m:mgo": {
      "ct": "20201009T144211",
      "acpi": [

```

	<pre> "/vnpt/acp-00952a1c7bd3322d"], "ri":"/vnpt/mgo-c7620f42b561a10d", "lbl":["key1"], "lt":"20201009T144211", "pi":"/vnpt/nod-82f95af9b859e8c5", "swn":"test", "mgd":1002, "vr":"1.0.0", "rn":"swr_test", "url":"http://203.253.128.151:7579/software", "et":"20301009T144211" } } } </pre>
<p>Example with RCN=2</p>	<p>MQTT_API/SWR/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from":"acp_admin", "operation":1, "resultContent":2, "requestIdentifier":"12345554", "to":"/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType":13, "content":{ "m2m:mgo":{ "m":"swr_test", "lbl":["key1"], </pre>

	<pre> "mgd":1002, "vr":"1.0.0", "swn":"test", "url":"http://203.253.128.151:7579/software" } } } </pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre> { "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test" } } </pre>
<p>Example with RCN=3</p>	<p>MQTT_API/SWR/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from":"acp_admin", "operation":1, "resultContent":3, "requestIdentifier":"12345554", "to":"/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType":13, "content":{ "m2m:mgo":{ "rn":"swr_test", "lbl":["key1" </pre>

```
],  
  "mgd":1002,  
  "vr":"1.0.0",  
  "swn":"test",  
  "url":"http://203.253.128.151:7579/software"  
}  
}  
}
```

MQTT Response Topic: /oneM2M/resp[key được cấp]/json

MQTT Response Payload

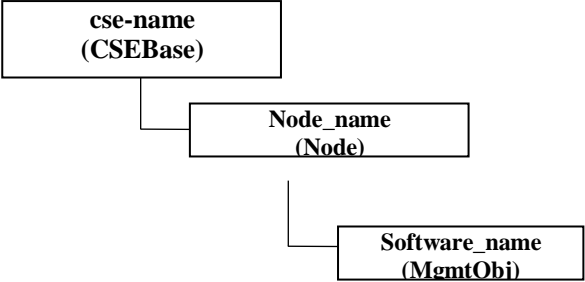
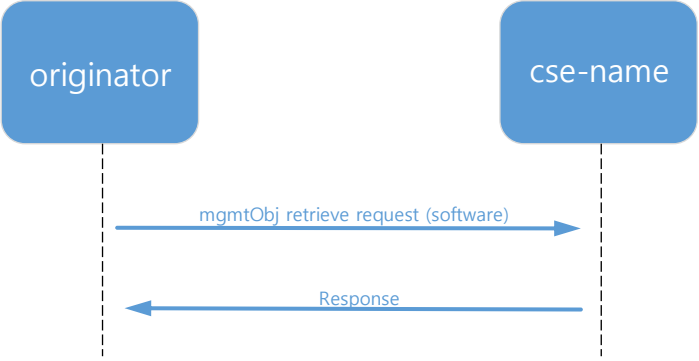
```
{  
  "responseStatusCode":2001,  
  "requestIdentifier":"12345554",  
  "originatingTimestamp":"1602213939097",  
  "content":{  
    "m2m:mgo": {  
      "ct": "20201009T144211",  
      "acpi": [  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri": "/vnpt/mgo-c7620f42b561a10d",  
      "lbl": [  
        "key1"  
      ],  
      "it": "20201009T144211",  
      "pi": "/vnpt/nod-82f95af9b859e8c5",  
      "swn": "test",  
      "mgd": 1002,  
      "vr": "1.0.0",  
      "rn": "swr_test",  
      "url": "http://203.253.128.151:7579/software",  
      "et": "20301009T144211"  
    },  
    "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test"
```



	<pre>} }</pre>
--	--------------------

Truy vấn thông tin resource software

Giao thức HTTP:

API Id	HTTP_API/SWR/RET/001 HTTP_API/ SWR/RET/001_RCN0 HTTP_API/ SWR / RET /001_RCN1 HTTP_API/ SWR / RET /001_RCN2 HTTP_API/ SWR / RET /001_RCN3										
API Name	<software> resource RETRIEVE										
Target Resource	<software >										
Description	API truy vấn thông tin <software > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["Software_name (MgmtObj)"] </pre>										
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: mgmtObj retrieve request (software) cse-name-->>originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1697 1272 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

Example
with
RCN=1

HTTP_API/SWR/ RET/001_RCN0

HTTP Request:

GET /cse-name/node-name/resource_name?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2000

```
{
  "m2m:mgo": {
    "ct": "20201009T144211",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-c7620f42b561a10d",
    "lbl": [
      "key1"
    ],
    "it": "20201009T144211",
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "swm": "test",
```



	<pre>"mgd": 1002, "vr": "1.0.0", "rn": "swr_test", "uri": "http://203.253.128.151:7579/software", "et": "20301009T144211" } }</pre>
Example with RCN=2	<p>HTTP_API/SWR/ RET /001_RCN2</p> <p>HTTP Request:</p> <pre>GET /cse-name/node-name/resource_name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 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: 2000 { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test" }</pre>
	<p>HTTP_API/SWR/ RET /001_RCN3</p>

Example
with
RCN=3

HTTP Request:

GET /cse-name/node-name/resource_name?rcn=3 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

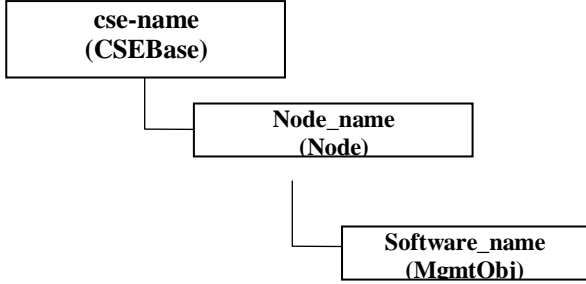
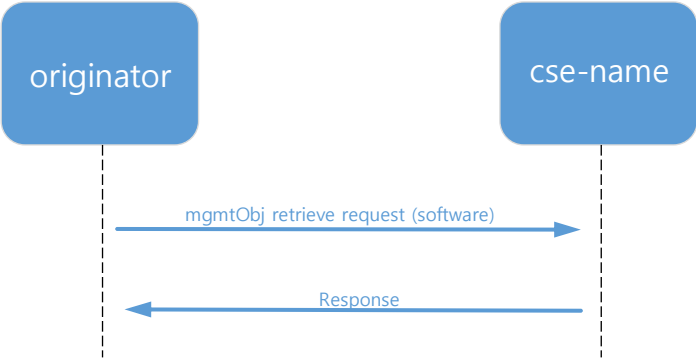
X-M2M-RSC: 2000

```
{
  "m2m:mgo": {
    "ct": "20201009T144211",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-c7620f42b561a10d",
    "lbl": [
      "key1"
    ],
    "it": "20201009T144211",
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "swn": "test",
    "mgd": 1002,
    "vr": "1.0.0",
```



	<pre>"rn": "swr_test", "uri": "http://203.253.128.151:7579/software", "et": "20301009T144211" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test" }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/SWR/ RET /001 MQTT _API/ SWR/ RET /001_RCNO MQTT _API/ SWR/ RET /001_RC�1 MQTT _API/ SWR/ RET /001_RC�2 MQTT _API/ SWR/ RET /001_RC�3
API Name	<software> resource RETRIEVE
Target Resource	<software>
Description	API tạo resource <software> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or	<p>MQTT_API/SWR/ RET /001</p> <p>MQTT_API/ SWR / RET /001_RC�1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{</pre>

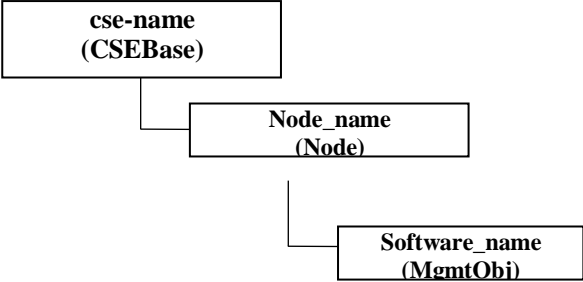
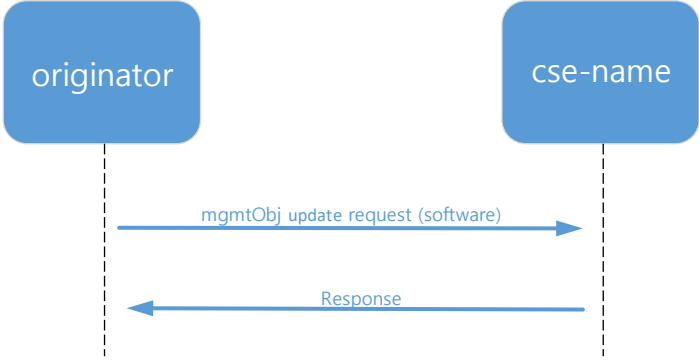
RCN=1	<pre> "from": "acp_admin", "operation": 2, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ swr_test ", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2000, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606", "content":{ "m2m:mgo": { "ct": "20201009T144211", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-c7620f42b561a10d", "lbl": ["key1"], "lt": "20201009T144211", "pi": "/vnpt/nod-82f95af9b859e8c5", "swn": "test", "mgd": 1002, "vr": "1.0.0", "rn": "swr_test", "url": "http://203.253.128.151:7579/software", "et": "20301009T144211" } } } </pre>
-------	--

<p>Example with RCN=2</p>	<p>MQTT_API/FWR/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 2, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ swr_test ", "resourceType": 13 }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/FWR/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 2, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ swr_test ", }</pre>

```
"resourceType": 13
}
MQTT Response Topic: /oneM2M/resp[key được cấp]/json
MQTT Response Payload
{
  "responseStatusCode":2000,
  "requestIdentifier":"12345554",
  "originatingTimestamp":"1602213939097",
  "content":{
    "m2m:mgo": {
      "ct": "20201009T144211",
      "acpi": [
        "/vnpt/acp-00952a1c7bd3322d"
      ],
      "ri": "/vnpt/mgo-c7620f42b561a10d",
      "lbl": [
        "key1"
      ],
      "lt": "20201009T144211",
      "pi": "/vnpt/nod-82f95af9b859e8c5",
      "swn": "test",
      "mgd": 1002,
      "vr": "1.0.0",
      "rn": "swr_test",
      "url": "http://203.253.128.151:7579/software",
      "et": "20301009T144211"
    },
    "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test"
  }
}
```

Sửa thuộc tính resource software

Giao thức HTTP:

API Id	HTTP_API/SWR/ UPD /001 HTTP_API/ SWR / UPD /001_RCN0 HTTP_API/ SWR / UPD /001_RCN1 HTTP_API/ SWR / UPD /001_RCN2 HTTP_API/ SWR / UPD /001_RCN3										
API Name	<software> resource UPDATE										
Target Resource	<software >										
Description	API sửa thuộc tính resource <software > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["Software_name (MgmtObj)"] </pre>										
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: mgmtObj update request (software) cse-name-->>originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1697 1270 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

<p>Example with RCN=0</p>	<p>HTTP_API/SWR/ UPD /001_RCNO</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "swr_test", "lbl": ["key1"], "mgd": 1002, "vr": "1.0.0", "swn": "test", "url": "http://203.253.128.151:7579/software" } }</pre> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
	<p>HTTP_API/ SWR / UPD /001</p> <p>HTTP_API/ SWR / UPD /001_RCNI</p>

Example
with
no RCN or
RCN=1

HTTP Request:

HTTP Request:

PUT /cse-name/node-name/resource-name?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

```
{  
  "m2m:mgo": {  
    "rn": "swr_test",  
    "lbl": ["key1"],  
    "mgd": 1002,  
    "vr": "1.0.0",  
    "swn": "test",  
    "url": "http://203.253.128.151:7579/software"  
  }  
}
```

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2004

```
{
```

	<pre> "m2m:mgo": { "ct": "20201009T144211", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-c7620f42b561a10d", "lbl": ["key1"], "lt": "20201009T144211", "pi": "/vnpt/nod-82f95af9b859e8c5", "swn": "test", "mgd": 1002, "vr": "1.0.0", "rn": "swr_test", "url": "http://203.253.128.151:7579/software", "et": "20301009T144211" } </pre>
<p>Example with RCN=2</p>	<p>HTTP_API/SWR/ UPD /001_RCN2</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre> { "m2m:mgo": { </pre>

	<pre> "rn": "swr_test", "lbl": ["key1"], "mgd": 1002, "vr": "1.0.0", "swn": "test", "url": "http://203.253.128.151:7579/software" } } HTTP Response: 200 Ok Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004 { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test" } </pre>
<p>Example with RCN=3</p>	<p>HTTP_API/SWR/ UPD /001_RCN3</p> <p>HTTP Request:</p> <pre> PUT /cse-name/node-name/resource-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:mgo": { </pre>

```
"rn": "swr_test",  
"lbl": ["key1"],  
"mgd": 1002,  
"vr": "1.0.0",  
"swn": "test",  
"url": "http://203.253.128.151:7579/software"  
}  
}
```

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

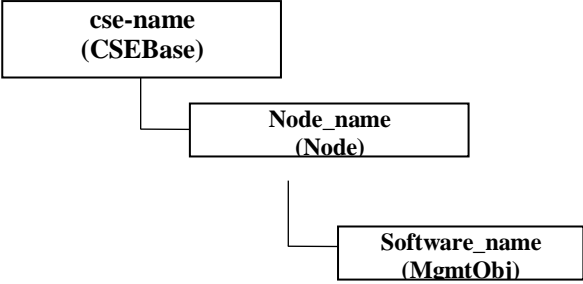
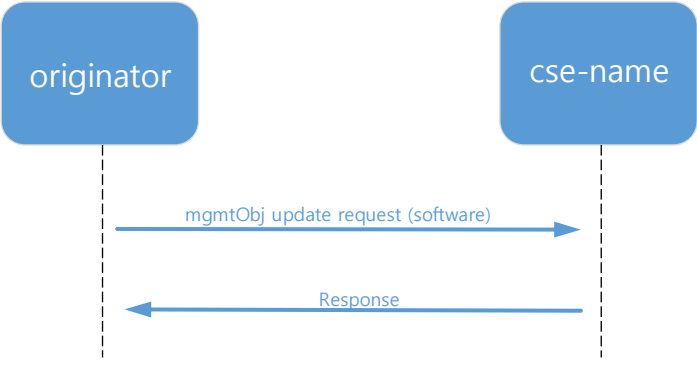
X-M2M-RSC: 2004

```
{  
  "m2m:mgo": {  
    "ct": "20201009T144211",  
    "acpi": [  
      "/vnpt/acp-00952a1c7bd3322d"  
    ],  
    "ri": "/vnpt/mgo-c7620f42b561a10d",  
    "lbl": [  
      "key1"  
    ],  
    "it": "20201009T144211",  
    "pi": "/vnpt/nod-82f95af9b859e8c5",  
    "swn": "test",  
    "mgd": 1002,  
    "vr": "1.0.0",  
    "rn": "swr_test",  
    "url": "http://203.253.128.151:7579/software",  
  }  
}
```



	<pre>"et": "20301009T144211" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test" }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/SWR/UPD/001 MQTT_API/SWR/UPD/001_RCN0 MQTT_API/SWR/UPD/001_RCN1 MQTT_API/SWR/UPD/001_RCN2 MQTT_API/SWR/UPD/001_RCN3
API Name	<software> resource UPDATE
Target Resource	<software>
Description	API sửa thuộc tính resource <software> qua MQTT
Resource Structure before Sending Request	 <pre> graph TD CSE["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["Software_name (MgmtObj)"] </pre>
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: mgmtObj update request (software) cse-name-->>originator: Response </pre>
Example with RCN=0	MQTT_API/SWR/UPD/001_RCN0 MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json MQTT Request Payload <pre> { "from": "acp_admin", "operation": 3, </pre>



	<pre>"resultContent":0, "requestIdentifier":"12345554", "to":"/vnpt/icc/nod_6a9a90fc920d6e2f38/ swr_test ", "resourceType":13, "content":{ "m2m:mgo":{ "rn":"swr_test", "lbl":["key1"], "mgd":1002, "vr":"1.0.0", "swn":"test", "url":"http://203.253.128.151:7579/software" } } }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/SWR/UPD/001</p> <p>MQTT_API/ SWR /UPD/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from":"acp_admin", "operation":3,</pre>

```
"resultContent":1,  
"requestIdentifier":"12345554",  
"to-":"/vnpt/icc/nod_6a9a90fc920d6e2f38/ swr_test ",  
"resourceType":13,  
"content":{  
  "m2m:mgo":{  
    "rn":"swr_test",  
    "lbl":[  
      "key1"  
    ],  
    "mgd":1002,  
    "vr":"1.0.0",  
    "swn":"test",  
    "url":"http://203.253.128.151:7579/software"  
  }  
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{  
  "responseStatusCode": 2004,  
  "requestIdentifier": "12345554",  
  "originatingTimestamp": "1602213939097",  
  "content": {  
    "m2m:mgo": {  
      "ct": "20201009T144211",  
      "acpi": [  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri": "/vnpt/mgo-c7620f42b561a10d",  
      "lbl": [  
        "key1"  
      ]  
    }  
  }  
}
```



	<pre>], "it": "20201009T144211", "pi": "/vnpt/nod-82f95af9b859e8c5", "swn": "test", "mgd": 1002, "vr": "1.0.0", "rn": "swr_test", "url": "http://203.253.128.151:7579/software", "et": "20301009T144211" } } }</pre>
<p>Example with RCN=2</p>	<p>MQTT_API/SWR/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ swr_test ", "resourceType": 13, "content": { "m2m:mgo": { "rn": "swr_test", "lbl": ["key1"], "mgd": 1002, "vr": "1.0.0", "swn": "test", "url": "http://203.253.128.151:7579/software" } } }</pre>

	<pre> } } MQTT Response Topic: /oneM2M/resp[key được cấp]/json MQTT Response Payload { "responseStatusCode": 2004, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test" } } </pre>
<p>Example with RCN=3</p>	<p>MQTT_API/SWR/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 3, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ swr_test ", "resourceType": 13, "content": { "m2m:mgo": { "rn": "swr_test", "lb": ["key1"], "mgd": 1002, "vr": "1.0.0", "swn": "test", </pre>

```
"url":"http://203.253.128.151:7579/software"
```

```
}
```

```
}
```

```
}
```

MQTT Response Topic: /oneM2M/resp[key được cấp]/json

MQTT Response Payload

```
{
```

```
"responseStatusCode":2004,
```

```
"requestIdentifier":"12345554",
```

```
"originatingTimestamp":"1602213939097",
```

```
"content":{
```

```
"m2m:mgo": {
```

```
"ct": "20201009T144211",
```

```
"acpi": [
```

```
"/vnpt/acp-00952a1c7bd3322d"
```

```
],
```

```
"ri": "/vnpt/mgo-c7620f42b561a10d",
```

```
"lbl": [
```

```
"key1"
```

```
],
```

```
"lt": "20201009T144211",
```

```
"pi": "/vnpt/nod-82f95af9b859e8c5",
```

```
"swn": "test",
```

```
"mgd": 1002,
```

```
"vr": "1.0.0",
```

```
"rn": "swr_test",
```

```
"url": "http://203.253.128.151:7579/software",
```

```
"et": "20301009T144211"
```

```
},
```

```
"m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test"
```

```
}
```

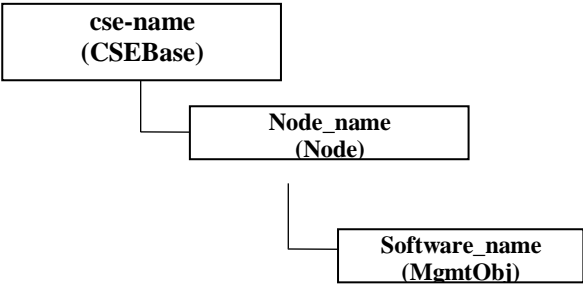
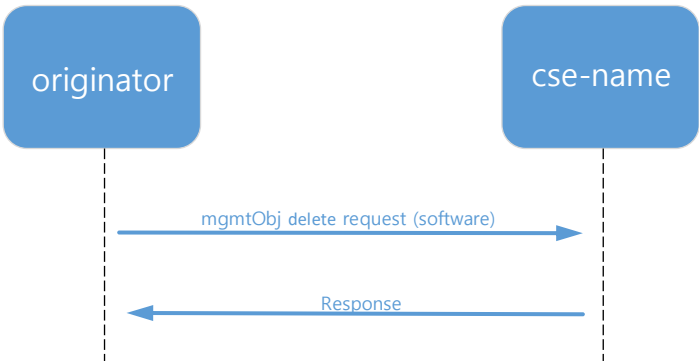
```
}
```



TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
CÔNG TY CÔNG NGHỆ THÔNG TIN VNPT

Xóa resource firmware

Giao thức HTTP:

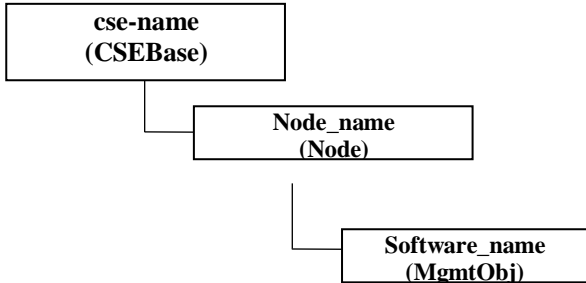
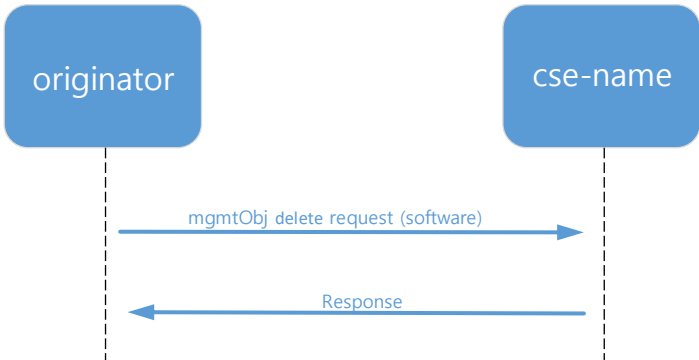
API Id	HTTP_API/SWR/DEL/001 HTTP_API/ SWR/ DEL /001_RCNO HTTP_API/ SWR / DEL /001_RCN1										
API Name	<software> resource DELETE										
Target Resource	<software >										
Description	API xóa <software > qua HTTP										
Resource Structure before Sending Request											
Call Flow											
HTTP Header Information	<table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										
	HTTP_API/SWR/ DEL/001_RCNO										

<p>Example with RCN=0</p>	<p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2002</p>
<p>Example with RCN=1</p>	<p>HTTP_API/SWR/ DEL /001_RCN1</p> <p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p>


```
200 Ok
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2002

{
  "m2m:mgo": {
    "ct": "20201009T144211",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-c7620f42b561a10d",
    "lbl": [
      "key1"
    ],
    "it": "20201009T144211",
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "swn": "test",
    "mgd": 1002,
    "vr": "1.0.0",
    "rn": "swr_test",
    "url": "http://203.253.128.151:7579/software",
    "et": "20301009T144211"
  }
}
```

Giao thức MQTT:

API Id	MQTT_API/SWR/ RET /001 MQTT _API/ SWR/ RET /001_RCNO MQTT _API/ SWR/ RET /001_RCN1
API Name	<software> resource RETRIEVE
Target Resource	<software>
Description	API xóa resource <software> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or RCN=0	<p>MQTT_API/SWR/ DEL /001 MQTT_API/ SWR / DEL /001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4,</pre>

	<pre>"resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2002, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606" }</pre>
<p>Example with RCN=1</p>	<p>MQTT_API/FWR/CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/swr_test", "resourceType": 13 }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2002, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "m2m:mgo": { "ct": "20201009T144211", "acpi": [</pre>

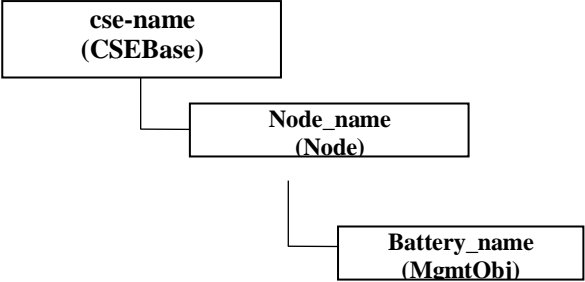
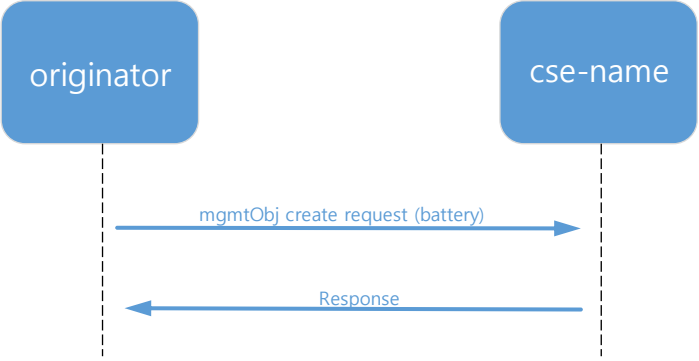


	<pre>"/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-c7620f42b561a10d", "lbl": ["key1"], "it": "20201009T144211", "pi": "/vnpt/nod-82f95af9b859e8c5", "swn": "test", "mgd": 1002, "vr": "1.0.0", "rn": "swr_test", "url": "http://203.253.128.151:7579/software", "et": "20301009T144211" } } }</pre>
--	--

MgmtObj Battery

Tạo resource battery

Giao thức HTTP:

API Id	HTTP_API/BAT/CRE/001 HTTP_API/ BAT /CRE/001_RCN0 HTTP_API/ BAT /CRE/001_RCN1 HTTP_API/ BAT /CRE/001_RCN2 HTTP_API/ BAT /CRE/001_RCN3										
API Name	<battery> resource CREATE										
Target Resource	< battery >										
Description	API tạo resource < battery > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD A[cse-name (CSEBase)] --- B[Node_name (Node)] B --- C[Battery_name (MgmtObj)] </pre>										
Call Flow	 <pre> sequenceDiagram participant Originator as originator participant CSE as cse-name Originator->>CSE: mgmtObj create request (battery) CSE-->>Originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1697 1272 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

<p>Example with RCN=0</p>	<p>HTTP_API/BAT/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "bat_mgo3", "lbl": ["battery"], "mgd": 1006, "btI": 99, "bts": 1 } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p>
	<p>HTTP_API/ BAT /CRE/001</p> <p>HTTP_API/ BAT /CRE/001_RCN1</p>

**Example
with
no RCN or
RCN=1**

HTTP Request:

```
POST /cse-name/node-name?rcn=1 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: /CAE56302832/AE16026458665
Content-Type: application/json; ty=13
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

```
{
  "m2m:mgo": {
    "rn": "bat_mgo3",
    "lbl": ["battery"],
    "mgd": 1006,
    "btI": 99,
    "bts": 1
  }
}
```

HTTP Response:

```
201 Created
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2001
```

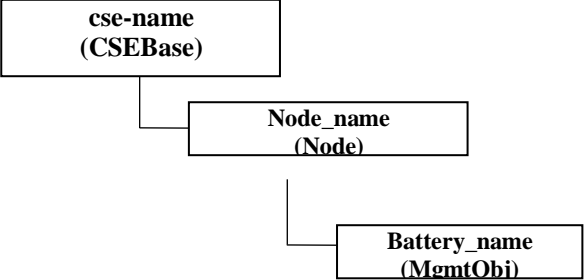
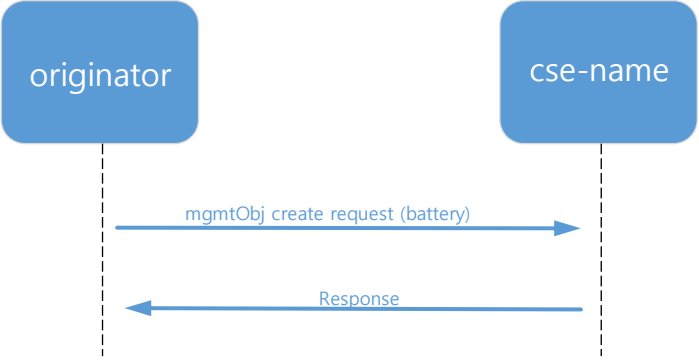
```
{
  "m2m:mgo": {
    "bts": 1,
```

	<pre> "ct": "20201009T152039", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-51eb1bf6c8cde4ed", "lbl": ["battery"], "lt": "20201009T152039", "pi": "/vnpt/nod-82f95af9b859e8c5", "bti": 99, "mgd": 1006, "rn": "bat_mgo3", "et": "20301009T152039" } } </pre>
<p>Example with RCN=2</p>	<p>HTTP_API/BAT/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre> { "m2m:mgo": { "rn": "bat_mgo3", "lbl": ["battery"], "mgd": 1006, </pre>

	<pre> "bt": 99, "bts": 1 } } HTTP Response: 201 Created Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001 { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3" } </pre>
<p>Example with RCN=3</p>	<p>HTTP_API/BAT/CRE/001_RCN3</p> <p>HTTP Request:</p> <pre> POST /cse-name/node-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:mgo": { "rn": "bat_mgo3", "lbl": ["battery"], "mgd": 1006, </pre>

```
"btl": 99,  
  "bts": 1  
}  
}  
  
HTTP Response:  
  
201 Created  
Content-Type: application/json  
X-M2M-RI: 1234  
X-M2M-RVI: 2a  
X-M2M-RSC: 2001  
  
{  
  "m2m:mgo": {  
    "bts": 1,  
    "ct": "20201009T152039",  
    "acpi": [  
      "/vnpt/acp-00952a1c7bd3322d"  
    ],  
    "ri": "/vnpt/mgo-51eb1bf6c8cde4ed",  
    "lbl": [  
      "battery"  
    ],  
    "it": "20201009T152039",  
    "pi": "/vnpt/nod-82f95af9b859e8c5",  
    "btl": 99,  
    "mgd": 1006,  
    "rn": "bat_mgo3",  
    "et": "20301009T152039"  
  },  
  "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3"  
}
```

Giao thức MQTT:

API Id	MQTT_API/BAT/CRE/001 MQTT_API/ BAT /CRE/001_RCN0 MQTT_API/ BAT /CRE/001_RCN1 MQTT_API/ BAT /CRE/001_RCN2 MQTT_API/ BAT /CRE/001_RCN3
API Name	<battery> resource CREATE
Target Resource	< battery >
Description	API tạo resource < battery > qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	MQTT_API/BAT/CRE/001_RCN0 MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json MQTT Request Payload <pre>{</pre>



	<pre>"from": "acp_admin", "operation": 1, "resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "rn": "bat_mgo3", "lbl": ["battery"], "mgd": 1006, "btI": 99, "bts": 1 } } }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/ BAT /CRE/001</p> <p>MQTT_API/ BAT /CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 1,</pre>

```
"requestIdentifier": "12345554",  
"to": "/vnpt/icc/nod_6a9a90fc920d6e2f38",  
"resourceType": 13,  
"content": {  
  "m2m:mgo": {  
    "rn": "bat_mgo3",  
    "lbl": ["battery"],  
    "mgd": 1006,  
    "bti": 99,  
    "bts": 1  
  }  
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "12345554",  
  "originatingTimestamp": "1602213939097",  
  "content": {  
    "m2m:mgo": {  
      "bts": 1,  
      "ct": "20201009T152039",  
      "acpi": [  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri": "/vnpt/mgo-51eb1bf6c8cde4ed",  
      "lbl": [  
        "battery"  
      ],  
      "it": "20201009T152039",  
      "pi": "/vnpt/nod-82f95af9b859e8c5",  
      "bti": 99,  
    }  
  }  
}
```

	<pre>"mgd": 1006, "rn": "bat_mgo3", "et": "20301009T152039" } } }</pre>
<p>Example with RCN=2</p>	<p>MQTT_API/ BAT /CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "rn": "bat_mgo3", "lbl": ["battery"], "mgd": 1006, "bt": 99, "bts": 1 } } }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": {</pre>

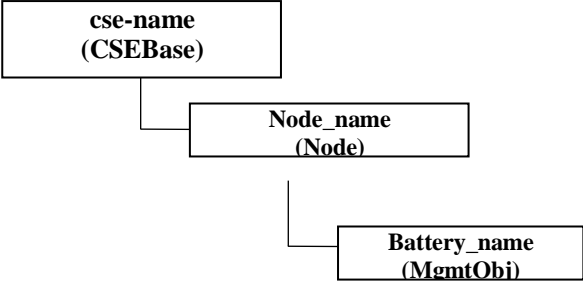
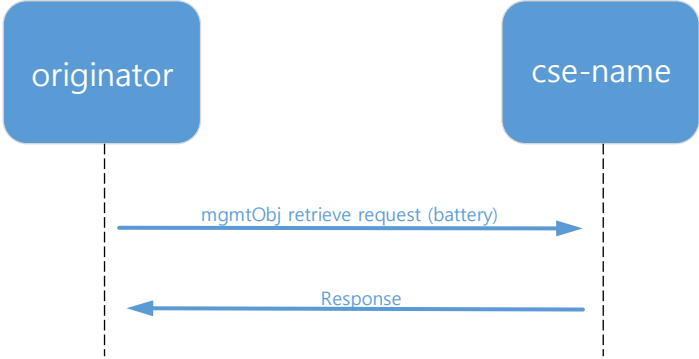
	<pre>"m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/ BAT /CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "rn": "bat_mgo3", "lbl": ["battery"], "mgd": 1006, "bt": 99, "bts": 1 } } }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode":2001, "requestIdentifier":"12345554", "originatingTimestamp":"1602213939097", "content":{ "m2m:mgo": { "bts": 1,</pre>



	<pre>"ct": "20201009T152039", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-51eb1bf6c8cde4ed", "lbl": ["battery"], "lt": "20201009T152039", "pi": "/vnpt/nod-82f95af9b859e8c5", "bti": 99, "mgd": 1006, "rn": "bat_mgo3", "et": "20301009T152039" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3" } }</pre>
--	--

Truy vấn thông tin resource battery

Giao thức HTTP:

API Id	HTTP_API/BAT/RET/001 HTTP_API/ BAT /RET/001_RCN0 HTTP_API/ BAT / RET /001_RCN1 HTTP_API/ BAT / RET /001_RCN2 HTTP_API/ BAT / RET /001_RCN3										
API Name	<battery> resource RETRIEVE										
Target Resource	< battery >										
Description	API truy vấn thông tin < battery > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["Battery_name (MgmtObj)"] </pre>										
Call Flow	 <pre> sequenceDiagram participant O as originator participant C as cse-name O->>C: mgmtObj retrieve request (battery) C-->>O: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1697 1270 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

Example
with
RCN=1

HTTP_API/BAT/ RET/001_RCNO

HTTP Request:

GET /cse-name/node-name/resource_name?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2000

```
{
  "m2m:mgo": {
    "bts": 1,
    "ct": "20201009T152039",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-51eb1bf6c8cde4ed",
    "lbl": [
      "battery"
    ],
    "lt": "20201009T152039",
    "pi": "/vnpt/nod-82f95af9b859e8c5",
```



	<pre>"btI": 99, "mgd": 1006, "rn": "bat_mgo3", "et": "20301009T152039" } }</pre>
<p>Example with RCN=2</p>	<p>HTTP_API/ BAT / RET /001_RCN2</p> <p>HTTP Request:</p> <p>GET /cse-name/node-name/resource_name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 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:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3" }</pre>
	<p>HTTP_API/ BAT / RET /001_RCN3</p>

Example
with
RCN=3

HTTP Request:

GET /cse-name/node-name/resource_name?rcn=3 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

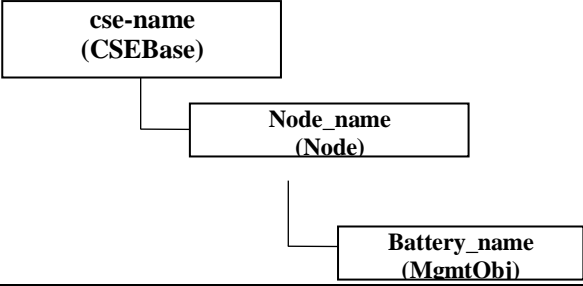
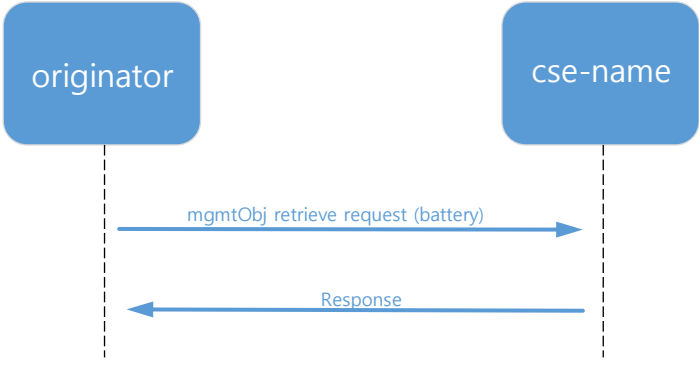
X-M2M-RSC: 2000

```
{
  "m2m:mgo": {
    "bts": 1,
    "ct": "20201009T152039",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-51eb1bf6c8cde4ed",
    "lbl": [
      "battery"
    ],
    "lt": "20201009T152039",
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "bti": 99,
    "mgd": 1006,
  }
}
```



	<pre>"rn": "bat_mgo3", "et": "20301009T152039" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3" }</pre>
--	--

Giao thức MQTT:

API Id	MQTT_API/BAT/ RET /001 MQTT _API/ BAT / RET /001_RCN0 MQTT _API/ BAT / RET /001_RCN1 MQTT _API/ BAT / RET /001_RCN2 MQTT _API/ BAT / RET /001_RCN3
API Name	<battery> resource RETRIEVE
Target Resource	< battery >
Description	API tạo resource <battery> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or	<p>MQTT_API/BAT/ RET /001</p> <p>MQTT_API/ BAT / RET /001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{</pre>

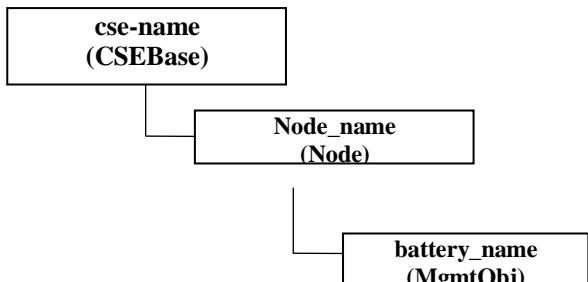
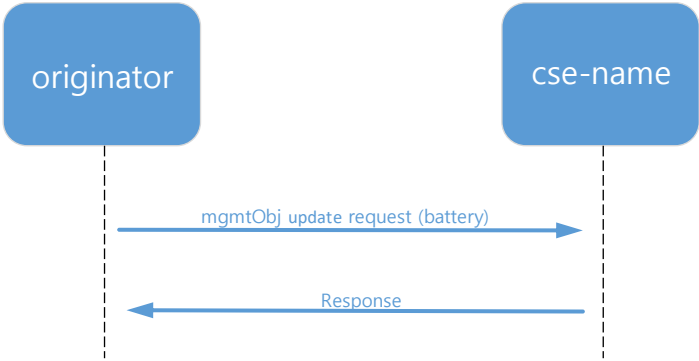
RCN=1	<pre> "from": "acp_admin", "operation": 2, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ bat_mgo3 ", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2000, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606", "content":{ "m2m:mgo": { "bts": 1, "ct": "20201009T152039", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-51eb1bf6c8cde4ed", "lbl": ["battery"], "it": "20201009T152039", "pi": "/vnpt/nod-82f95af9b859e8c5", "btl": 99, "mgd": 1006, "rn": "bat_mgo3", "et": "20301009T152039" } } } </pre>

<p>Example with RCN=2</p>	<p>MQTT_API/ BAT /CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 2, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ bat_mgo3 ", "resourceType": 13 }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/ BAT /CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 2, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ bat_mgo3 ", "resourceType": 13 }</pre>


```
}  
MQTT Response Topic: /oneM2M/resp[key được cấp]/json  
MQTT Response Payload  
{  
  "responseStatusCode":2000,  
  "requestIdentifier":"12345554",  
  "originatingTimestamp":"1602213939097",  
  "content":{  
    "m2m:mgo": {  
      "bts": 1,  
      "ct": "20201009T152039",  
      "acpi": [  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri": "/vnpt/mgo-51eb1bf6c8cde4ed",  
      "lbl": [  
        "battery"  
      ],  
      "lt": "20201009T152039",  
      "pi": "/vnpt/nod-82f95af9b859e8c5",  
      "btl": 99,  
      "mgd": 1006,  
      "rn": "bat_mgo3",  
      "et": "20301009T152039"  
    },  
    "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3"  
  }  
}
```

Sửa thuộc tính resource battery

Giao thức HTTP:

API Id	HTTP_API/BAT/ UPD /001 HTTP_API/ BAT / UPD /001_RCN0 HTTP_API/ BAT / UPD /001_RCN1 HTTP_API/ BAT / UPD /001_RCN2 HTTP_API/ BAT / UPD /001_RCN3										
API Name	<battery> resource UPDATE										
Target Resource	< battery >										
Description	API sửa thuộc tính resource <firmware > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Battery[battery_name (MgmtObj)] </pre>										
Call Flow	 <pre> sequenceDiagram participant Originator as originator participant CSE as cse-name Originator->>CSE: mgmtObj update request (battery) CSE-->>Originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="478 1691 1268 1960"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

<p>Example with RCN=0</p>	<p>HTTP_API/BAT/ UPD /001_RCN0</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "bat_mgo3", "lbl": ["battery"], "mgd": 1006, "btI": 99, "bts": 1 } }</pre> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
	<p>HTTP_API/ BAT / UPD /001</p> <p>HTTP_API/ BAT / UPD /001_RCN1</p>

*Example
with
no RCN or
RCN=1*

HTTP Request:

HTTP Request:

PUT /cse-name/node-name/resource-name?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

```
{  
  "m2m:mgo": {  
    "rn": "bat_mgo3",  
    "lbl": ["battery"],  
    "mgd": 1006,  
    "btl": 99,  
    "bts": 1  
  }  
}
```

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2004

```
{
```

	<pre> "m2m:mgo": { "bts": 1, "ct": "20201009T152039", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-51eb1bf6c8cde4ed", "lbl": ["battery"], "it": "20201009T152039", "pi": "/vnpt/nod-82f95af9b859e8c5", "btl": 99, "mgd": 1006, "rn": "bat_mgo3", "et": "20301009T152039" } } </pre>
<p>Example with RCN=2</p>	<p>HTTP_API/ BAT / UPD /001_RCN2</p> <p>HTTP Request:</p> <pre> PUT /cse-name/node-name/resource-name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:mgo": { "rn": "bat_mgo3", </pre>



	<pre>"lbl": ["battery"], "mgd": 1006, "bt": 99, "bts": 1 } }</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:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3" }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API/ BAT / UPD /001_RCN3</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "rn": "bat_mgo3",</pre>

```
"lbl": ["battery"],  
"mgd": 1006,  
"btI": 99,  
"bts": 1  
}  
}
```

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

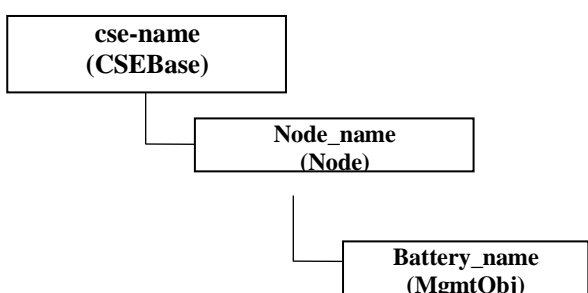
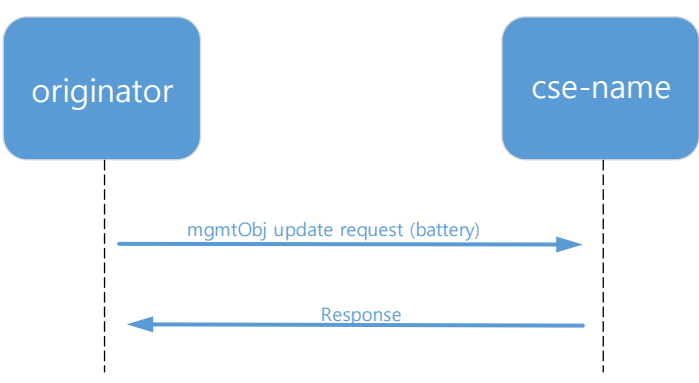
X-M2M-RSC: 2004

```
{  
  "m2m:mgo": {  
    "bts": 1,  
    "ct": "20201009T152039",  
    "acpi": [  
      "/vnpt/acp-00952a1c7bd3322d"  
    ],  
    "ri": "/vnpt/mgo-51eb1bf6c8cde4ed",  
    "lbl": [  
      "battery"  
    ],  
    "it": "20201009T152039",  
    "pi": "/vnpt/nod-82f95af9b859e8c5",  
    "btI": 99,  
    "mgd": 1006,  
    "rn": "bat_mgo3",  
    "et": "20301009T152039"  
  },  
  "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3"
```

```
}

```

Giao thức MQTT:

API Id	MQTT_API/BAT/UPD/001 MQTT_API/ BAT / UPD /001_RCNO MQTT_API/ BAT / UPD /001_RCNI MQTT_API/ BAT / UPD /001_RCNI MQTT_API/ BAT / UPD /001_RCNI MQTT_API/ BAT / UPD /001_RCNI
API Name	<battery> resource UPDATE
Target Resource	<battery>
Description	API sửa thuộc tính resource <battery> qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example	MQTT_API/BAT/UPD/001_RCNO MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json



<p>with RCN=0</p>	<p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1 ", "resourceType": 13, "content": { "m2m:mgo": { "rn": "bat_mgo3", "lbl": ["battery"], "mgd": 1006, "btI": 99, "bts": 1 } } }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" }</pre>
<p>Example with no RCN or</p>	<p>MQTT_API/ BAT /UPD/001</p> <p>MQTT_API/ BAT /UPD/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{</pre>

RCN=1

```
"from": "acp_admin",  
"operation": 3,  
"resultContent": 1,  
"requestIdentifier": "12345554",  
"to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1",  
"resourceType": 13,  
"content": {  
  "m2m:mgo": {  
    "rn": "bat_mgo3",  
    "lbl": ["battery"],  
    "mgd": 1006,  
    "btI": 99,  
    "bts": 1  
  }  
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{  
  "responseStatusCode": 2004,  
  "requestIdentifier": "12345554",  
  "originatingTimestamp": "1602213939097",  
  "content": {  
    "m2m:mgo": {  
      "bts": 1,  
      "ct": "20201009T152039",  
      "acpi": [  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri": "/vnpt/mgo-51eb1bf6c8cde4ed",  
      "lbl": [  
        "battery"  
      ],  
    }  
  }  
}
```

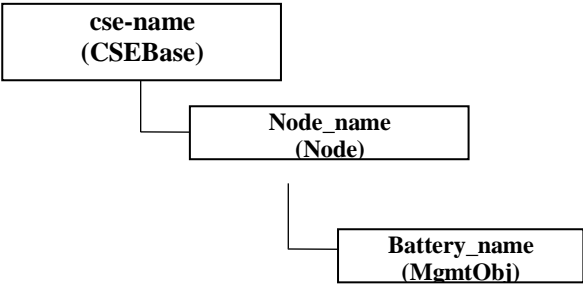
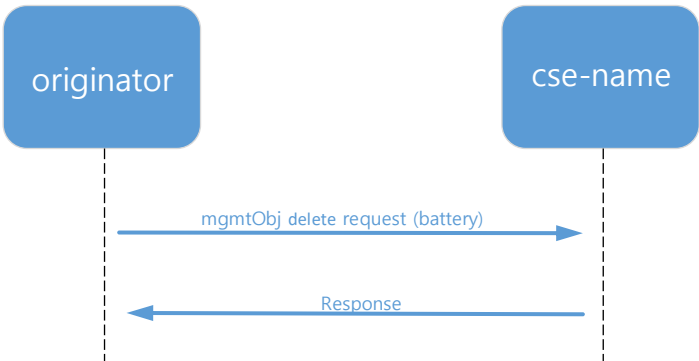
	<pre> "lt": "20201009T152039", "pi": "/vnpt/nod-82f95af9b859e8c5", "btI": 99, "mgd": 1006, "rn": "bat_mgo3", "et": "20301009T152039" } } } </pre>
<p>Example with RCN=2</p>	<p>MQTT_API/ BAT /CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 3, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1", "resourceType": 13, "content": { "m2m:mgo": { "rn": "bat_mgo3", "bl": ["battery"], "mgd": 1006, "btI": 99, "bts": 1 } } } </pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre> { "responseStatusCode": 2004, </pre>

	<pre>"requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/ BAT /CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 3, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/fwr_mgo1", "resourceType": 13, "content": { "m2m:mgo": { "rn": "bat_mgo3", "lbl": ["battery"], "mgd": 1006, "btI": 99, "bts": 1 } } }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode":2004, "requestIdentifier":"12345554", "originatingTimestamp":"1602213939097",</pre>

```
"content":{  
  "m2m:mgo": {  
    "bts": 1,  
    "ct": "20201009T152039",  
    "acpi": [  
      "/vnpt/acp-00952a1c7bd3322d"  
    ],  
    "ri": "/vnpt/mgo-51eb1bf6c8cde4ed",  
    "lbl": [  
      "battery"  
    ],  
    "tt": "20201009T152039",  
    "pi": "/vnpt/nod-82f95af9b859e8c5",  
    "btl": 99,  
    "mgd": 1006,  
    "rn": "bat_mgo3",  
    "et": "20301009T152039"  
  },  
  "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/bat_mgo3"  
}
```

Xóa resource battery

Giao thức HTTP:

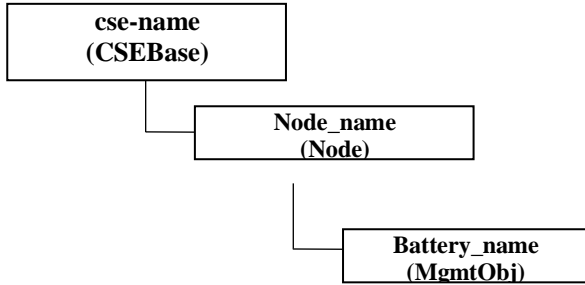
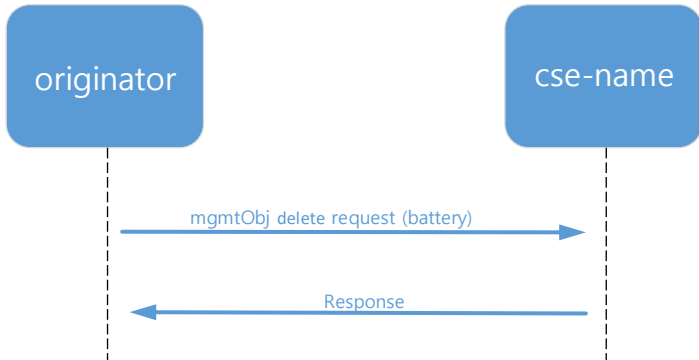
API Id	HTTP_API/BAT/DEL/001 HTTP_API/ BAT / DEL /001_RCNO HTTP_API/ BAT / DEL /001_RCN1										
API Name	<battery> resource DELETE										
Target Resource	<battery >										
Description	API xóa <battery > qua HTTP										
Resource Structure before Sending Request											
Call Flow											
HTTP Header Information	<table border="1"> <thead> <tr> <th>Header</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										
	HTTP_API/BAT/ DEL/001_RCNO										

<p>Example with RCN=0</p>	<p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2002</p>
<p>Example with RCN=1</p>	<p>HTTP_API / BAT / DEL /001_RCN1</p> <p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p>

```
200 Ok
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2002

{
  "m2m:mgo": {
    "bts": 1,
    "ct": "20201009T152039",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-51eb1bf6c8cde4ed",
    "lbl": [
      "battery"
    ],
    "lt": "20201009T152039",
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "bti": 99,
    "mgd": 1006,
    "rn": "bat_mgo3",
    "et": "20301009T152039"
  }
}
```

Giao thức MQTT:

API Id	MQTT_API/BAT/ RET /001 MQTT _API/ BAT / RET /001_RCN0 MQTT _API/ BAT / RET /001_RCN1
API Name	<battery> resource RETRIEVE
Target Resource	< battery >
Description	API xóa resource < battery > qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or RCN=0	<p>MQTT_API/BAT/ DEL /001 MQTT_API/ BAT / DEL /001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4,</pre>

	<pre>"resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ bat_mgo3 ", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2002, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606" }</pre>
<p>Example with RCN=1</p>	<p>MQTT_API/ BAT /CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ bat_mgo3 ", "resourceType": 13 }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2002, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:mgo": { "bts": 1,</pre>

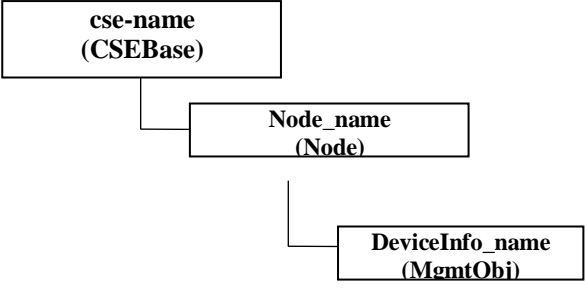
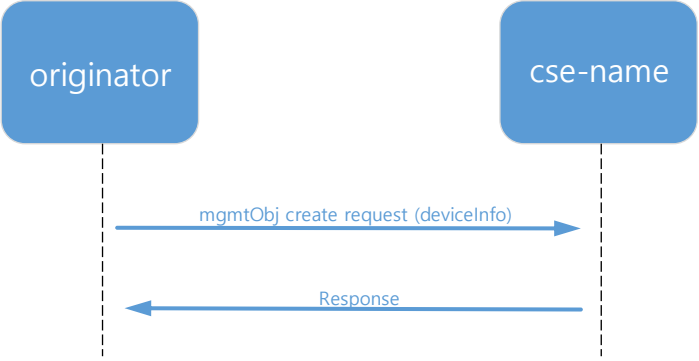


	<pre>"ct": "20201009T152039", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-51eb1bf6c8cde4ed", "lbl": ["battery"], "lt": "20201009T152039", "pi": "/vnpt/nod-82f95af9b859e8c5", "btl": 99, "mgd": 1006, "rn": "bat_mgo3", "et": "20301009T152039" } } }</pre>
--	--

MgmtObj DeviceInfo

Tạo resource deviceInfo

Giao thức HTTP:

API Id	HTTP_API/DVI/CRE/001 HTTP_API/ DVI /CRE/001_RCN0 HTTP_API/ DVI /CRE/001_RCN1 HTTP_API/ DVI /CRE/001_RCN2 HTTP_API/ DVI /CRE/001_RCN3										
API Name	<deviceInfo> resource CREATE										
Target Resource	< deviceInfo >										
Description	API tạo resource < deviceInfo > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["DeviceInfo_name (MgmtObj)"] </pre>										
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: mgmtObj create request (deviceInfo) cse-name-->>originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1697 1273 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

Example
with
RCN=0

HTTP_API/DVI/CRE/001_RCN0

HTTP Request:

```
POST /cse-name/node-name?rcn=0 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: /CAE56302832/AE16026458665
Content-Type: application/json; ty=13
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

```
{
  "m2m:mgo": {
    "dlb": "test",
    "rn": "dvi_mgo1",
    "lbl": ["key2"],
    "mgd": 1007,
    "dbl": "test dvi",
    "man": "keti",
    "mod": "aqua",
    "dty": "aqua system",
    "fwv": "1.0.0",
    "swv": "1.0.0",
    "hww": "1.0.0"
  }
}
```

HTTP Response:

```
201 Created
Content-Type: application/json
X-M2M-RI: 1234
```

	<p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p>
<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/DVI/CRE/001</p> <p>HTTP_API/DVI/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hww": "1.0.0" } }</pre>

HTTP Response:

201 Created

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2001

```
{
  "m2m:mgo": {
    "mod": "aqua",
    "fwv": "1.0.0",
    "hwv": "1.0.0",
    "dty": "aqua system",
    "it": "20201009T154337",
    "mgd": 1007,
    "et": "20301009T154337",
    "ct": "20201009T154337",
    "swv": "1.0.0",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-d9fc4f6250cf1b40e",
    "lbl": [
      "key2"
    ],
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "dlb": "test",
    "man": "keti",
    "rn": "dvi_mgo1"
  }
}
```

<p>Example with RCN=2</p>	<p>HTTP_API/DVI/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hwv": "1.0.0" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p>
----------------------------------	---

	<p>X-M2M-RSC: 2001</p> <pre>{ "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API/DVI/CRE/001_RCN3</p> <p>HTTP Request:</p> <p>POST /cse-name/node-name?rcn=3 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hwv": "1.0.0" } }</pre>

HTTP Response:

201 Created

Content-Type: application/json

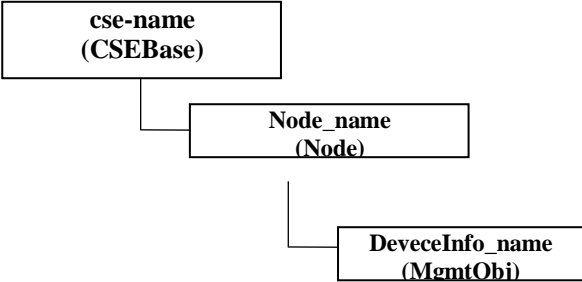
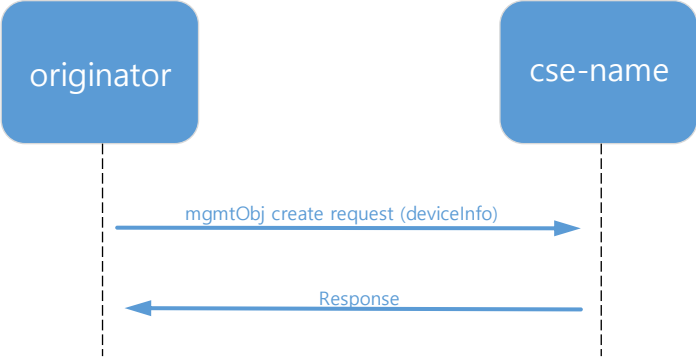
X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2001

```
{
  "m2m:mgo": {
    "mod": "aqua",
    "fwv": "1.0.0",
    "hwv": "1.0.0",
    "dty": "aqua system",
    "lt": "20201009T154337",
    "mgd": 1007,
    "et": "20301009T154337",
    "ct": "20201009T154337",
    "swv": "1.0.0",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-d9fc4f6250cf1b40e",
    "lbl": [
      "key2"
    ],
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "dlb": "test",
    "man": "keti",
    "rn": "dvi_mgo1"
  },
  "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1"
}
```

Giao thức MQTT:

API Id	MQTT_API/DVI/CRE/001 MQTT_API/DVI/CRE/001_RCN0 MQTT_API/DVI/CRE/001_RCN1 MQTT_API/DVI/CRE/001_RCN2 MQTT_API/DVI/CRE/001_RCN3
API Name	<deviceInfo> resource CREATE
Target Resource	< deviceInfo >
Description	API tạo resource < deviceInfo > qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	MQTT_API/DVI/CRE/001_RCN0 MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json MQTT Request Payload <pre>{</pre>



	<pre>"from": "acp_admin", "operation": 1, "resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, "content": { "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hww": "1.0.0" } } }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" }</pre>
	<p>MQTT_API/ DVI/CRE/001</p> <p>MQTT_API/ DVI/CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p>

**Example
with
no RCN or
RCN=1**

MQTT Request Payload

```
{
  "from": "acp_admin",
  "operation": 1,
  "resultContent": 1,
  "requestIdentifier": "12345554",
  "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38",
  "resourceType": 13,
  "content": {
    "m2m:mgo": {
      "dlb": "test",
      "rn": "dvi_mgo1",
      "lbl": ["key2"],
      "mgd": 1007,
      "dbl": "test dvi",
      "man": "keti",
      "mod": "aqua",
      "dty": "aqua system",
      "fwv": "1.0.0",
      "swv": "1.0.0",
      "hwv": "1.0.0"
    }
  }
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{
  "responseStatusCode": 2001,
  "requestIdentifier": "12345554",
  "originatingTimestamp": "1602213939097",
  "content": {
    "m2m:mgo": {
```

	<pre> "mod": "aqua", "fwv": "1.0.0", "hwv": "1.0.0", "dty": "aqua system", "lt": "20201009T154337", "mgd": 1007, "et": "20301009T154337", "ct": "20201009T154337", "swv": "1.0.0", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-d9fc4f6250cf1b40e", "lbl": ["key2"], "pi": "/vnpt/nod-82f95af9b859e8c5", "dlb": "test", "man": "keti", "rn": "dvi_mgo1" } } } </pre>
<p>Example with RCN=2</p>	<p>MQTT_API/ DVI /CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 1, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38", "resourceType": 13, </pre>

	<pre> "content": { "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hwv": "1.0.0" } } </pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre> { "responseStatusCode": 2001, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" } } </pre>
<p>Example with RCN=3</p>	<p>MQTT_API/ DVI/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 1, </pre>

```
"resultContent": 3,  
"requestIdentifier": "12345554",  
"to": "/vnpt/icc/nod_6a9a90fc920d6e2f38",  
"resourceType": 13,  
"content": {  
  "m2m:mgo": {  
    "dlb": "test",  
    "rn": "dvi_mgo1",  
    "lbl": ["key2"],  
    "mgd": 1007,  
    "dbl": "test dvi",  
    "man": "keti",  
    "mod": "aqua",  
    "dty": "aqua system",  
    "fwv": "1.0.0",  
    "swv": "1.0.0",  
    "hwv": "1.0.0"  
  }  
}
```

MQTT Response Topic: /oneM2M/resp[key được cấp]/json

MQTT Response Payload

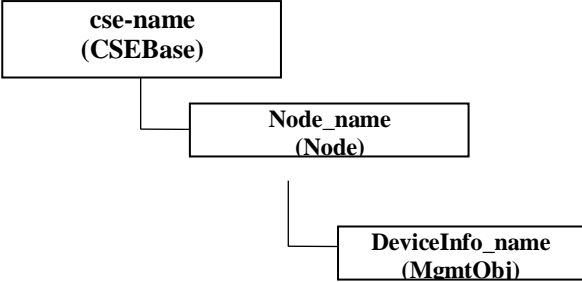
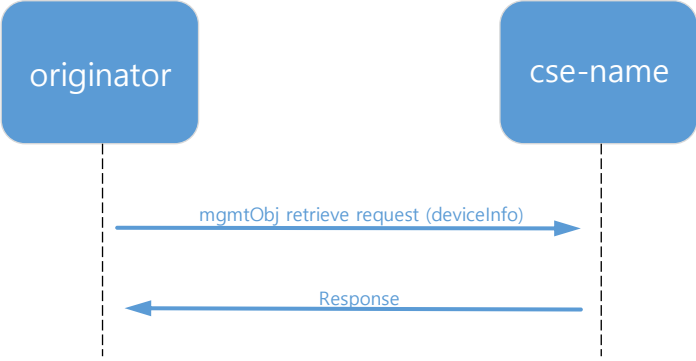
```
{  
  "responseStatusCode":2001,  
  "requestIdentifier":"12345554",  
  "originatingTimestamp":"1602213939097",  
  "content":{  
    "m2m:mgo": {  
      "mod": "aqua",  
      "fwv": "1.0.0",  
      "hwv": "1.0.0",  
      "dty": "aqua system",  
      "lt": "20201009T154337",  
      "mgd": 1007,  
    }  
  }  
}
```




	<pre>"et": "20301009T154337", "ct": "20201009T154337", "swv": "1.0.0", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-d9fc4f6250cf1b40e", "lbl": ["key2"], "pi": "/vnpt/nod-82f95af9b859e8c5", "dlb": "test", "man": "keti", "rn": "dvi_mgo1" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" } }</pre>
--	---

Truy vấn thông tin resource deviceInfo

Giao thức HTTP:

API Id	HTTP_API/DVI/RET/001 HTTP_API/ DVI /RET/001_RCN0 HTTP_API/ DVI / RET /001_RCN1 HTTP_API/ DVI / RET /001_RCN2 HTTP_API/ DVI / RET /001_RCN3										
API Name	<deviceInfo> resource RETRIEVE										
Target Resource	< deviceInfo >										
Description	API truy vấn thông tin < deviceInfo > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSEBase["cse-name (CSEBase)"] --- Node["Node_name (Node)"] Node --- MgmtObj["DeviceInfo_name (MgmtObj)"] </pre>										
Call Flow											
HTTP Header Information	<table border="1" data-bbox="485 1697 1270 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

Example
with
RCN=1

HTTP_API/DVI/ RET/001_RCNO

HTTP Request:

GET /cse-name/node-name/resource_name?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2000

```
{
  "m2m:mgo": {
    "mod": "aqua",
    "fwv": "1.0.0",
    "hwv": "1.0.0",
    "dty": "aqua system",
    "it": "20201009T154337",
    "mgd": 1007,
    "et": "20301009T154337",
    "ct": "20201009T154337",
    "swv": "1.0.0",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ]
  }
}
```

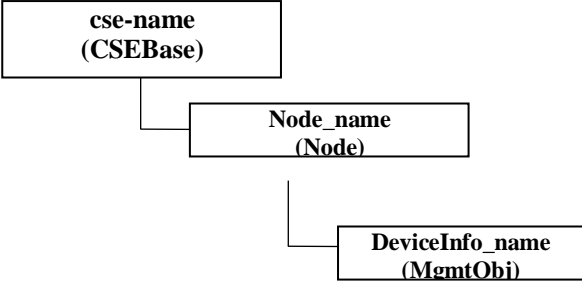
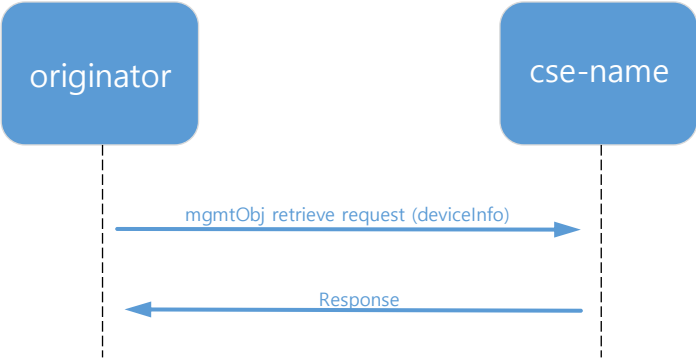
	<pre>], "ri": "/vnpt/mgo-d9fc4f6250cf1b40e", "lbl": ["key2"], "pi": "/vnpt/nod-82f95af9b859e8c5", "dlb": "test", "man": "keti", "rn": "dvi_mgo1" } } </pre>
<p>Example with RCN=2</p>	<p>HTTP_API/ DVI / RET /001_RCN2</p> <p>HTTP Request:</p> <p>GET /cse-name/node-name/resource_name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 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:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API/ DVI / RET /001_RCN3</p> <p>HTTP Request:</p> <p>GET /cse-name/node-name/resource_name?rcn=3 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2000</p> <pre>{ "m2m:mgo": { "mod": "aqua", "fwv": "1.0.0", "hwv": "1.0.0", "dty": "aqua system", "lt": "20201009T154337", "mgd": 1007, "et": "20301009T154337", "ct": "20201009T154337", } }</pre>



	<pre>"swv": "1.0.0", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-d9fc4f6250cf1b40e", "lbl": ["key2"], "pi": "/vnpt/nod-82f95af9b859e8c5", "dlb": "test", "man": "keti", "rn": "dvi_mgo1" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/DVI/RET/001 MQTT_API/DVI/RET/001_RCN0 MQTT_API/DVI/RET/001_RCN1 MQTT_API/DVI/RET/001_RCN2 MQTT_API/DVI/RET/001_RCN3
API Name	<deviceInfo> resource RETRIEVE
Target Resource	< deviceInfo >
Description	API tạo resource < deviceInfo > qua MQTT
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Device[DeviceInfo_name (MgmtObj)] </pre>
Call Flow	 <pre> sequenceDiagram participant originator participant cse-name originator->>cse-name: mgmtObj retrieve request (deviceInfo) cse-name-->>originator: Response </pre>
Example with no RCN or	<p>MQTT_API/DVI/RET/001</p> <p>MQTT_API/DVI/RET/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt/json</p> <p>MQTT Request Payload</p> <pre>{</pre>

RCN=1	<pre>"from": "acp_admin", "operation": 2, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1 ", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2000, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606", "content":{ "m2m:mgo": { "mod": "aqua", "fwv": "1.0.0", "hwv": "1.0.0", "dty": "aqua system", "it": "20201009T154337", "mgd": 1007, "et": "20301009T154337", "ct": "20201009T154337", "swv": "1.0.0", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-d9fc4f6250cf1b40e", "lbl": ["key2"], "pi": "/vnpt/nod-82f95af9b859e8c5", "dlb": "test", "man": "keti",</pre>
-------	---



	<pre>"rn": "dvi_mgo1" } } }</pre>
<p>Example with RCN=2</p>	<p>MQTT_API/ DVI/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 2, "resultContent": 2, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ dvi_mgo1 ", "resourceType": 13 }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2000, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" } }</pre>
<p>Example with RCN=3</p>	<p>MQTT_API/ DVI/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin",</pre>

```
"operation": 2,  
"resultContent": 3,  
"requestIdentifier": "12345554",  
"to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ dvi_mgo1 ",  
"resourceType": 13  
}
```

MQTT Response Topic: /oneM2M/resp[key được cấp]/json

MQTT Response Payload

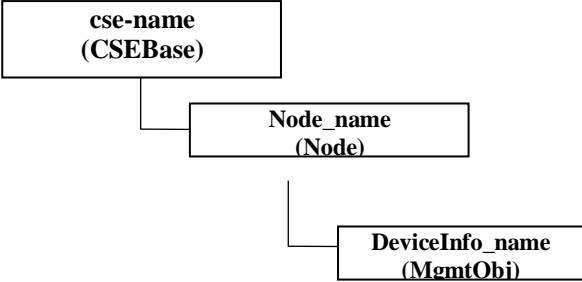
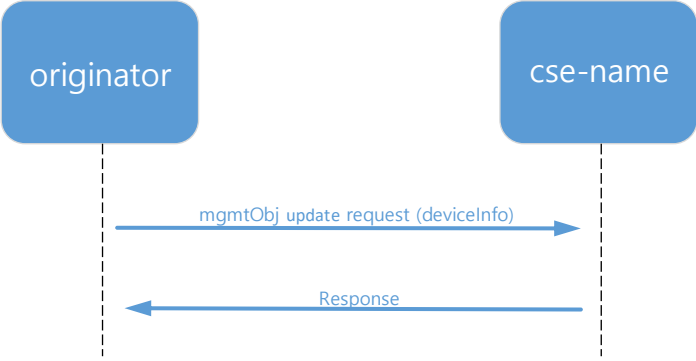
```
{  
  "responseStatusCode":2000,  
  "requestIdentifier":"12345554",  
  "originatingTimestamp":"1602213939097",  
  "content":{  
    "m2m:mgo": {  
      "mod": "aqua",  
      "fwv": "1.0.0",  
      "hwv": "1.0.0",  
      "dty": "aqua system",  
      "lt": "20201009T154337",  
      "mgd": 1007,  
      "et": "20301009T154337",  
      "ct": "20201009T154337",  
      "swv": "1.0.0",  
      "acpi": [  
        "/vnpt/acp-00952a1c7bd3322d"  
      ],  
      "ri": "/vnpt/mgo-d9fc4f6250cf1b40e",  
      "lbl": [  
        "key2"  
      ],  
      "pi": "/vnpt/nod-82f95af9b859e8c5",  
      "dlb": "test",  
      "man": "keti",  
      "rn": "dvi_mgo1"  
    }  
  }  
}
```



	<pre>}, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" } }</pre>
--	--

Sửa thuộc tính resource deviceInfo

Giao thức HTTP:

API Id	HTTP_API/DVI/ UPD /001 HTTP_API/ DVI / UPD /001_RCN0 HTTP_API/ DVI / UPD /001_RCN1 HTTP_API/ DVI / UPD /001_RCN2 HTTP_API/ DVI / UPD /001_RCN3										
API Name	<deviceInfo> resource UPDATE										
Target Resource	< deviceInfo >										
Description	API sửa thuộc tính resource < deviceInfo > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Device[DeviceInfo_name (MgmtObj)] </pre>										
Call Flow	 <pre> sequenceDiagram participant Originator as originator participant CSE as cse-name Originator->>CSE: mgmtObj update request (deviceInfo) CSE-->>Originator: Response </pre>										
HTTP Header Information	<table border="1" data-bbox="485 1697 1270 1962"> <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=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										

Example
with
RCN=0

HTTP_API/DVI/ UPD /001_RCNO

HTTP Request:

PUT /cse-name/node-name/resource-name?rcn=0 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: /CAE56302832/AE16026458665

Content-Type: application/json; ty=13

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

```
{  
  "m2m:mgo": {  
    "dlb": "test",  
    "rn": "dvi_mgo1",  
    "lbl": ["key2"],  
    "mgd": 1007,  
    "dbl": "test dvi",  
    "man": "keti",  
    "mod": "aqua",  
    "dty": "aqua system",  
    "fwv": "1.0.0",  
    "swv": "1.0.0",  
    "hwv": "1.0.0"  
  }  
}
```

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

	<p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
<p><i>Example with no RCN or RCN=1</i></p>	<p>HTTP_API/ DVI / UPD /001</p> <p>HTTP_API/ DVI / UPD /001_RCN1</p> <p>HTTP Request:</p> <p>HTTP Request:</p> <p>PUT /cse-name/node-name/resource-name?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hwv": "1.0.0" } }</pre>

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2004

```
{
  "m2m:mgo": {
    "mod": "aqua",
    "fwv": "1.0.0",
    "hwv": "1.0.0",
    "dty": "aqua system",
    "lt": "20201009T154337",
    "mgd": 1007,
    "et": "20301009T154337",
    "ct": "20201009T154337",
    "swv": "1.0.0",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-d9fc4f6250cf1b40e",
    "lbl": [
      "key2"
    ],
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "dlb": "test",
    "man": "keti",
    "rn": "dvi_mgo1"
  }
}
```

<p>Example with RCN=2</p>	<pre>} HTTP_API/DVI/UPD/001_RCN2 HTTP Request: PUT /cse-name/node-name/resource-name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hwv": "1.0.0" } } HTTP Response: 200 Ok Content-Type: application/json</pre>
----------------------------------	--

	<pre>X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004 { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API / DVI / UPD /001_RCN3</p> <p>HTTP Request:</p> <pre>PUT /cse-name/node-name/resource-name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: /CAE56302832/AE16026458665 Content-Type: application/json; ty=13 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hvv": "1.0.0" } }</pre>

```
}
```

HTTP Response:

200 Ok

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

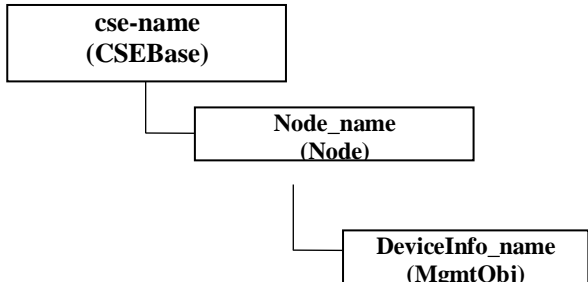
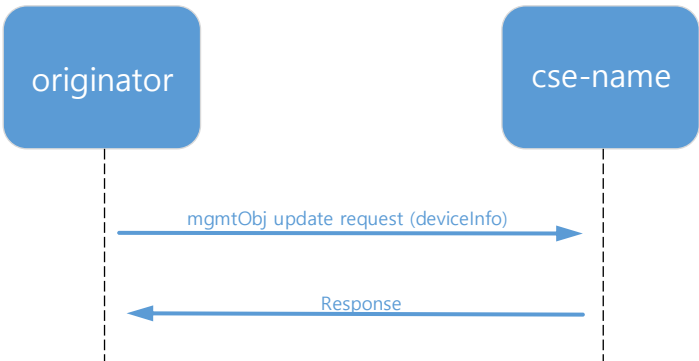
X-M2M-RSC: 2004

```
{  
  "m2m:mgo": {  
    "mod": "aqua",  
    "fwv": "1.0.0",  
    "hwv": "1.0.0",  
    "dty": "aqua system",  
    "lt": "20201009T154337",  
    "mgd": 1007,  
    "et": "20301009T154337",  
    "ct": "20201009T154337",  
    "swv": "1.0.0",  
    "acpi": [  
      "/vnpt/acp-00952a1c7bd3322d"  
    ],  
    "ri": "/vnpt/mgo-d9fc4f6250cf1b40e",  
    "lbl": [  
      "key2"  
    ],  
    "pi": "/vnpt/nod-82f95af9b859e8c5",  
    "dlb": "test",  
    "man": "keti",  
    "rn": "dvi_mgo1"  
  },  
  "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1"  
}
```

```
}

```

Giao thức MQTT:

API Id	MQTT_API/DVI/UPD/001 MQTT_API/DVI/UPD/001_RCNO MQTT_API/DVI/UPD/001_RCNI MQTT_API/DVI/UPD/001_RCNI MQTT_API/DVI/UPD/001_RCNI MQTT_API/DVI/UPD/001_RCNI
API Name	<deviceInfo> resource UPDATE
Target Resource	< deviceInfo >
Description	API sửa thuộc tính resource < deviceInfo > qua MQTT
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Device[DeviceInfo_name (MgmtObj)] </pre>
Call Flow	 <pre> sequenceDiagram participant O as originator participant C as cse-name O->>C: mgmtObj update request (deviceInfo) C-->>O: Response </pre>
Example	<p>MQTT_API/DVI/UPD/001_RCNO</p> <p>MQTT Request Topic: /oneM2M/req/CAE4002010076b902dc3b03/vnpt/json</p>

<p>with RCN=0</p>	<p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ dvi_mgo1 ", "resourceType": 13, "content": { "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hwv": "1.0.0" } } }</pre> <p>MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "12345554", "originatingTimestamp": "1602214602146" }</pre>
	<p>MQTT_API/ DVI /UPD/001</p>

**Example
with
no RCN or
RCN=1**

MQTT_API/ DVI /UPD/001_RCN1

MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json

MQTT Request Payload

```
{  
  "from": "acp_admin",  
  "operation": 3,  
  "resultContent": 1,  
  "requestIdentifier": "12345554",  
  "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ dvi_mgo1 ",  
  "resourceType": 13,  
  "content": {  
    "m2m:mgo": {  
      "dlb": "test",  
      "rn": "dvi_mgo1",  
      "lbl": ["key2"],  
      "mgd": 1007,  
      "dbl": "test dvi",  
      "man": "keti",  
      "mod": "aqua",  
      "dty": "aqua system",  
      "fwv": "1.0.0",  
      "swv": "1.0.0",  
      "hww": "1.0.0"  
    }  
  }  
}
```

MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json

MQTT Response Payload

```
{  
  "responseStatusCode": 2004,  
  "requestIdentifier": "12345554",
```

	<pre>"originatingTimestamp": "1602213939097", "content": { "m2m:mgo": { "mod": "aqua", "fwv": "1.0.0", "hwv": "1.0.0", "dty": "aqua system", "lt": "20201009T154337", "mgd": 1007, "et": "20301009T154337", "ct": "20201009T154337", "swv": "1.0.0", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-d9fc4f6250cf1b40e", "lbl": ["key2"], "pi": "/vnpt/nod-82f95af9b859e8c5", "dlb": "test", "man": "keti", "rn": "dvi_mgo1" } }</pre>
<p>Example with RCN=2</p>	<p>MQTT_API/ DVI/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 2,</pre>

	<pre> "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38 dvi_mgo1 ", "resourceType": 13, "content": { "m2m:mgo": { "dlb": "test", "rn": "dvi_mgo1", "lbl": ["key2"], "mgd": 1007, "dbl": "test dvi", "man": "keti", "mod": "aqua", "dty": "aqua system", "fwv": "1.0.0", "swv": "1.0.0", "hwv": "1.0.0" } } } } MQTT Response Topic: /oneM2M/resp[key được cấp]/json MQTT Response Payload { "responseStatusCode": 2004, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" } } </pre>
<p>Example with</p>	<p>MQTT_API/ DVI/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p>

RCN=3

```
{
  "from": "acp_admin",
  "operation": 3,
  "resultContent": 3,
  "requestIdentifier": "12345554",
  "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ dvi_mgo1 ",
  "resourceType": 13,
  "content": {
    "m2m:mgo": {
      "dlb": "test",
      "rn": "dvi_mgo1",
      "lbl": ["key2"],
      "mgd": 1007,
      "dbl": "test dvi",
      "man": "keti",
      "mod": "aqua",
      "dty": "aqua system",
      "fwv": "1.0.0",
      "swv": "1.0.0",
      "hwv": "1.0.0"
    }
  }
}
```

MQTT Response Topic: /oneM2M/resp[key được cấp]/json

MQTT Response Payload

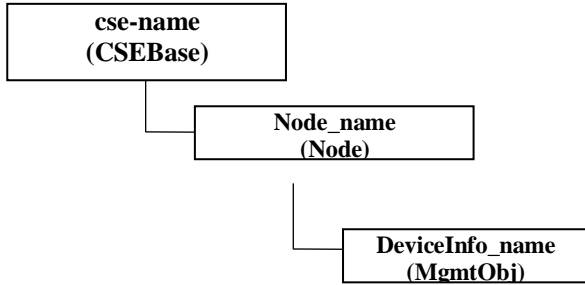
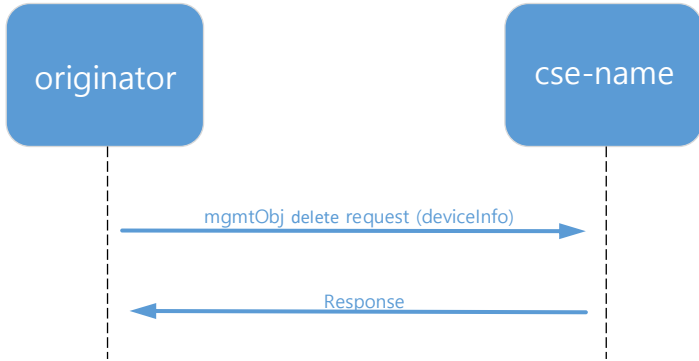
```
{
  "responseStatusCode":2004,
  "requestIdentifier":"12345554",
  "originatingTimestamp":"1602213939097",
  "content":{
    "m2m:mgo": {
      "mod": "aqua",
      "fwv": "1.0.0",
      "hwv": "1.0.0",
```




	<pre>"dty": "aqua system", "it": "20201009T154337", "mgd": 1007, "et": "20301009T154337", "ct": "20201009T154337", "swv": "1.0.0", "acpi": ["/vnpt/acp-00952a1c7bd3322d"], "ri": "/vnpt/mgo-d9fc4f6250cf1b40e", "lbl": ["key2"], "pi": "/vnpt/nod-82f95af9b859e8c5", "dlb": "test", "man": "keti", "rn": "dvi_mgo1" }, "m2m:uri": "/vnpt/icc/nod_6a9a90fc920d6e2f38/dvi_mgo1" } }</pre>
--	---

Xóa resource deviceInfo

Giao thức HTTP:

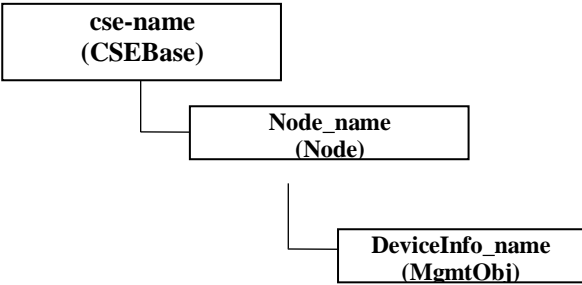
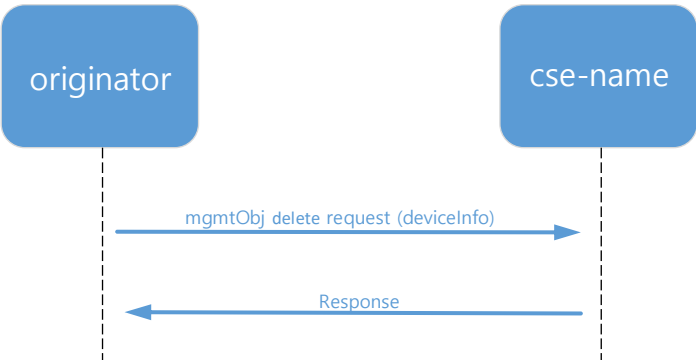
API Id	HTTP_API/DVI/DEL/001 HTTP_API/ DVI / DEL /001_RCN0 HTTP_API/ DVI / DEL /001_RCN1										
API Name	<deviceInfo> resource DELETE										
Target Resource	< deviceInfo >										
Description	API xóa < deviceInfo > qua HTTP										
Resource Structure before Sending Request	 <pre> graph TD CSE[cse-name (CSEBase)] --- Node[Node_name (Node)] Node --- Device[DeviceInfo_name (MgmtObj)] </pre>										
Call Flow	 <pre> sequenceDiagram participant O as originator participant C as cse-name O->>C: mgmtObj delete request (deviceInfo) C-->>O: 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 Originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json; ty=13</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=13
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=13										
	HTTP_API/DVI/ DEL/001_RCN0										

<p>Example with RCN=0</p>	<p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 Ok</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2002</p>
<p>Example with RCN=1</p>	<p>HTTP_API/DVI/DEL/001_RCN1</p> <p>HTTP Request:</p> <p>DELETE /cse-name/node-name/resource_name?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: /CAE56302832/AE16026458665</p> <p>Content-Type: application/json; ty=13</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p>

```
200 Ok
Content-Type: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
X-M2M-RSC: 2002

{
  "m2m:mgo": {
    "mod": "aqua",
    "fwv": "1.0.0",
    "hwv": "1.0.0",
    "dty": "aqua system",
    "lt": "20201009T154337",
    "mgd": 1007,
    "et": "20301009T154337",
    "ct": "20201009T154337",
    "swv": "1.0.0",
    "acpi": [
      "/vnpt/acp-00952a1c7bd3322d"
    ],
    "ri": "/vnpt/mgo-d9fc4f6250cf1b40e",
    "lbl": [
      "key2"
    ],
    "pi": "/vnpt/nod-82f95af9b859e8c5",
    "dlb": "test",
    "man": "keti",
    "rn": "dvi_mgo1"
  }
}
```

Giao thức MQTT:

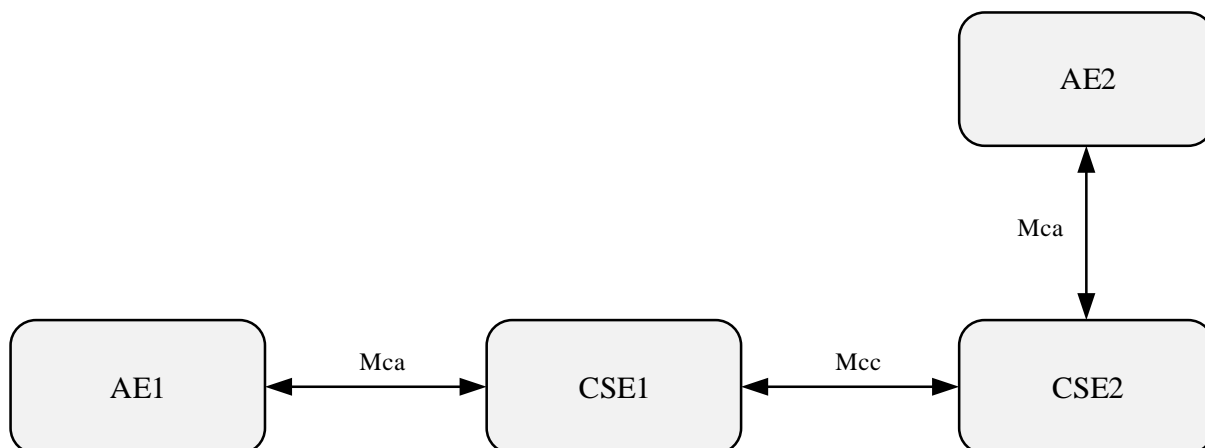
API Id	MQTT_API/DVI/RET /001 MQTT _API/ DVI / RET /001_RCN0 MQTT _API/ DVI / RET /001_RCN1
API Name	<deviceInfo> resource RETRIEVE
Target Resource	< deviceInfo >
Description	API xóa resource < deviceInfo > qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or RCN=0	<p>MQTT_API/DVI/DEL /001 MQTT_API/ DVI / DEL /001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4,</pre>

	<pre>"resultContent": 0, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ dvi_mgo1 ", "resourceType": 13 } MQTT Response Topic: /oneM2M/resp/vnpt/CAE4002010076b902dc3b03/json MQTT Response Payload { "responseStatusCode":2002, "requestIdentifier":"12345554", "originatingTimestamp":"1602224855606" }</pre>
<p>Example with RCN=1</p>	<p>MQTT_API/ DVI /CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp/CAE4002010076b902dc3b03/vnpt /json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4, "resultContent": 1, "requestIdentifier": "12345554", "to": "/vnpt/icc/nod_6a9a90fc920d6e2f38/ dvi_mgo1 ", "resourceType": 13 }</pre> <p>MQTT Response Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Response Payload</p> <pre>{ "responseStatusCode": 2002, "requestIdentifier": "12345554", "originatingTimestamp": "1602213939097", "content": { "m2m:mgo": { "mod": "aqua",</pre>

```
"fwv": "1.0.0",  
"hwv": "1.0.0",  
"dty": "aqua system",  
"lt": "20201009T154337",  
"mgd": 1007,  
"et": "20301009T154337",  
"ct": "20201009T154337",  
"swv": "1.0.0",  
"acpi": [  
    "/vnpt/acp-00952a1c7bd3322d"  
],  
"ri": "/vnpt/mgo-d9fc4f6250cf1b40e",  
"lbl": [  
    "key2"  
],  
"pi": "/vnpt/nod-82f95af9b859e8c5",  
"dlb": "test",  
"man": "keti",  
"rn": "dvi_mgo1"  
}  
}  
}
```

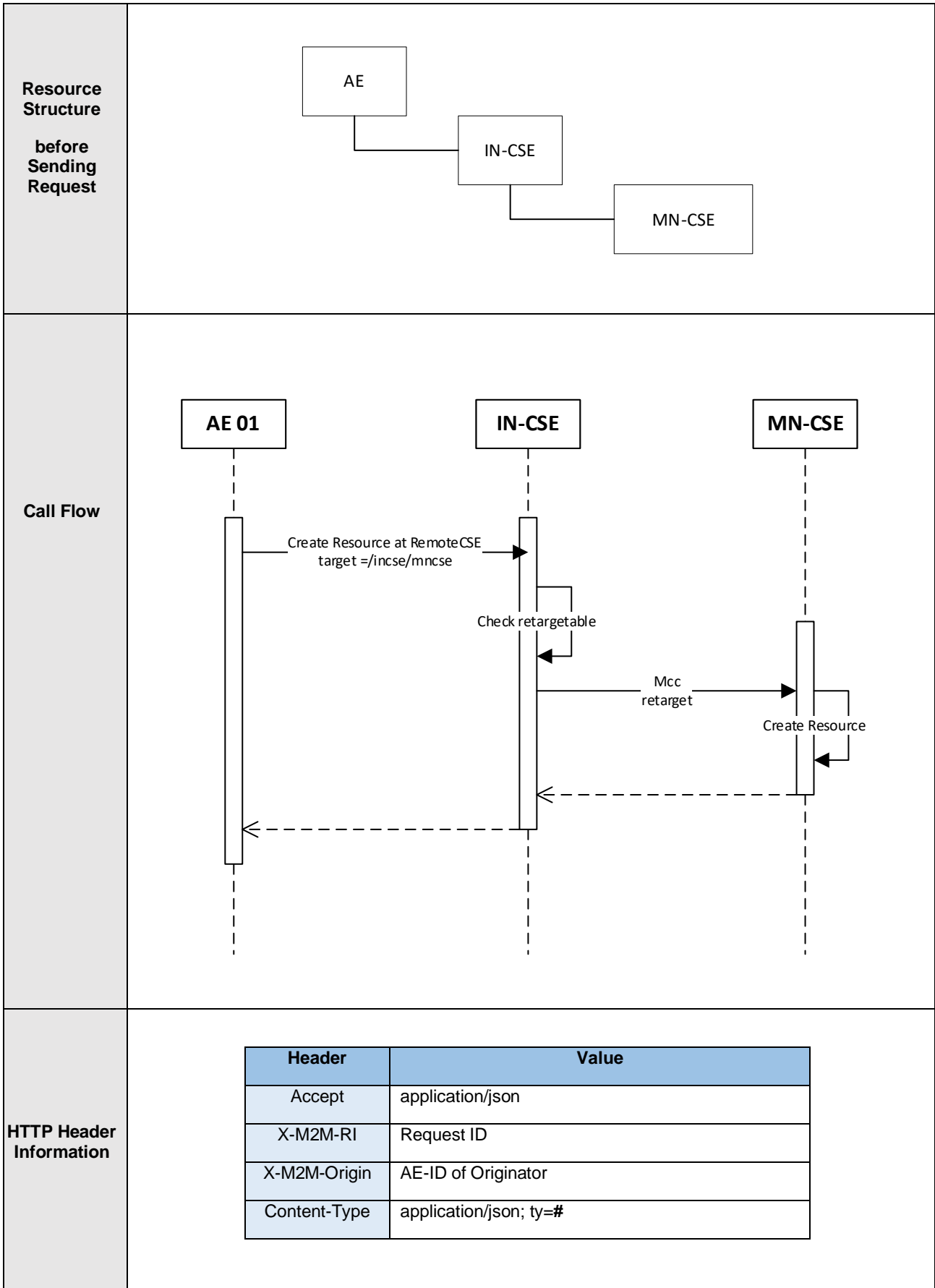
IV.1.7. Communication Management and Delivery Handling

Chức năng Retargeting dùng trong trường hợp có nhiều hơn 01 CSE triển khai, theo mô tả dưới đây:



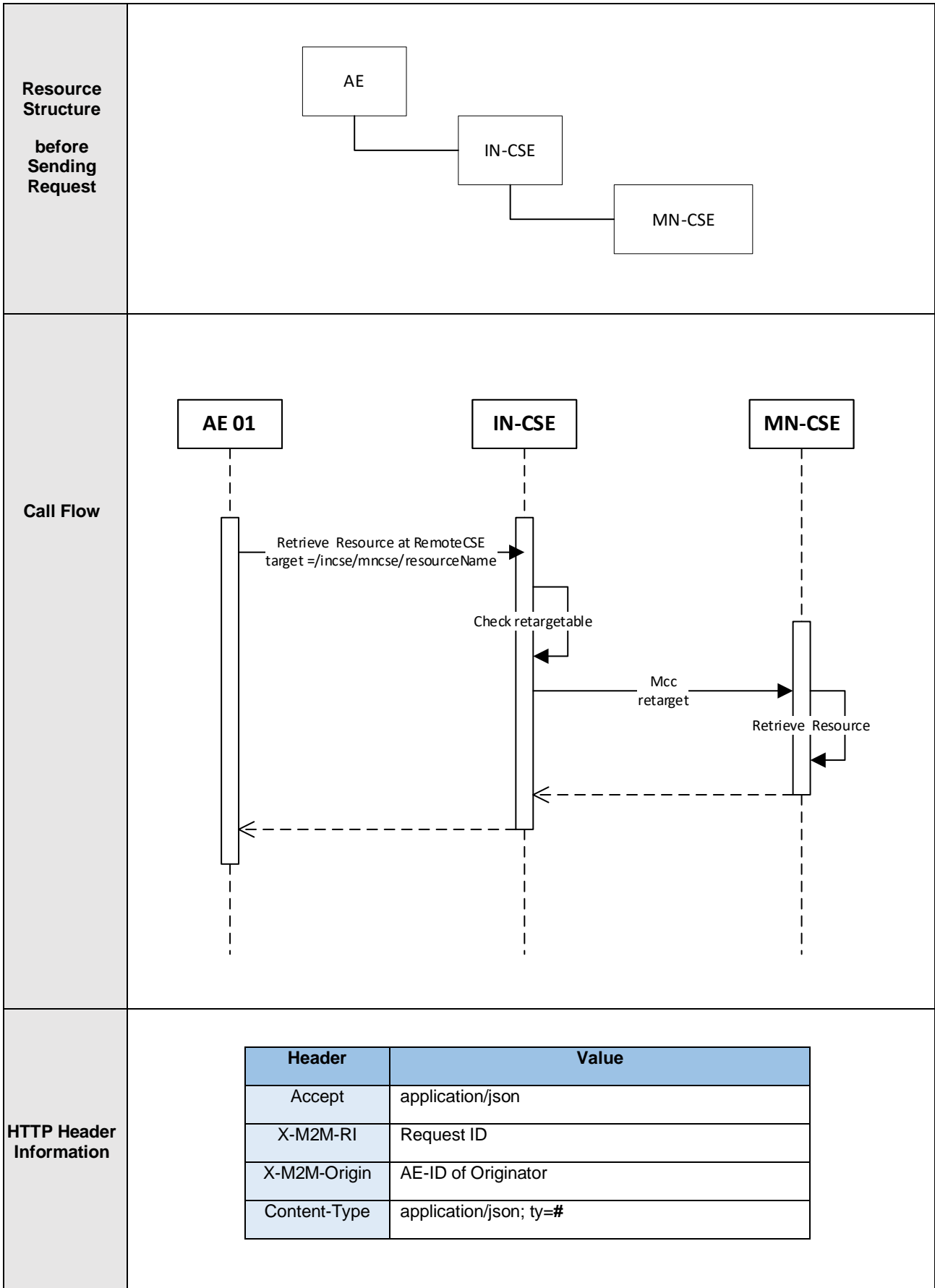
Chức năng này dùng để thao tác đến resource tại remote CSE ,CSE tại hiện trường (IoT gateway), qua IN-CSE (VNPT IoT Platform). Một số resource type có thể tạo tại hiện trường qua việc retarget của IN-CSE như: Container, ContentInstance, Subscription, accessControlPolicy, Group ...

Chức năng Retargeting / tạo resource tại remote Node



<p>Example</p>	<p>HTTP Request:</p> <p>POST /in-cse/in-name/remotecse-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: AE-ID of Originator</p> <p>Content-Type: application/json; ty=3</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:cnt": { "rn": "my_container" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p>
-----------------------	---

Chức năng Retargeting / xem resource tại remote Node

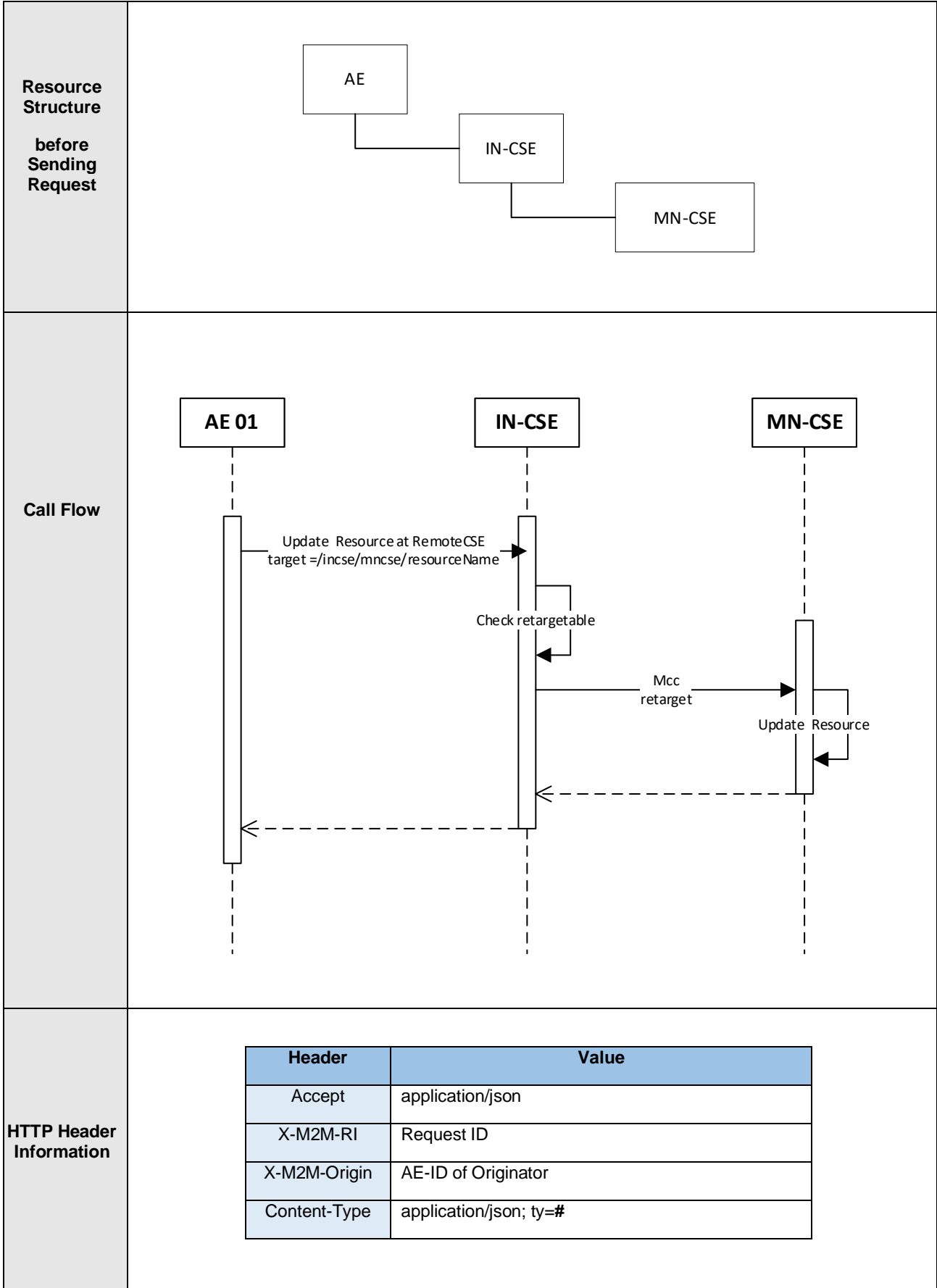


<p>Example</p>	<p>HTTP Request:</p> <p>GET /in-cse/in-name/remotecse-name/my_container?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: AE-ID of Originator</p> <p>Content-Type: application/json; ty=3</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2000</p> <pre>{ "m2m:cnt": { "st": 0, "ty": 3, "it": "1578543788351", "mni": 100, "ct": "1578543788351", "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol", "ri": "/vnpt/cnt-46cdb032b0fcbe76d8", "lbl": [], "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "cont_temp9",</pre>
-----------------------	---



	<pre>"mbs": 100000, "cni": 0, "latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la" } }</pre>
--	--

Chức năng Retargeting / sửa resource tại remote Node



<p>Example</p>	<p>HTTP Request:</p> <p>PUT /in-cse/in-name/remotecse-name/my_container?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: AE-ID of Originator</p> <p>Content-Type: application/json; ty=3</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p> <pre>{ "m2m:cnt": { "st": 0, "ty": 3, "it": "1578543788351", "mni": 100, "ct": "1578543788351", "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol", "ri": "/vnpt/cnt-46cdb032b0fcbe76d8", "lbl": [], "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "cont_temp9",</pre>
-----------------------	---



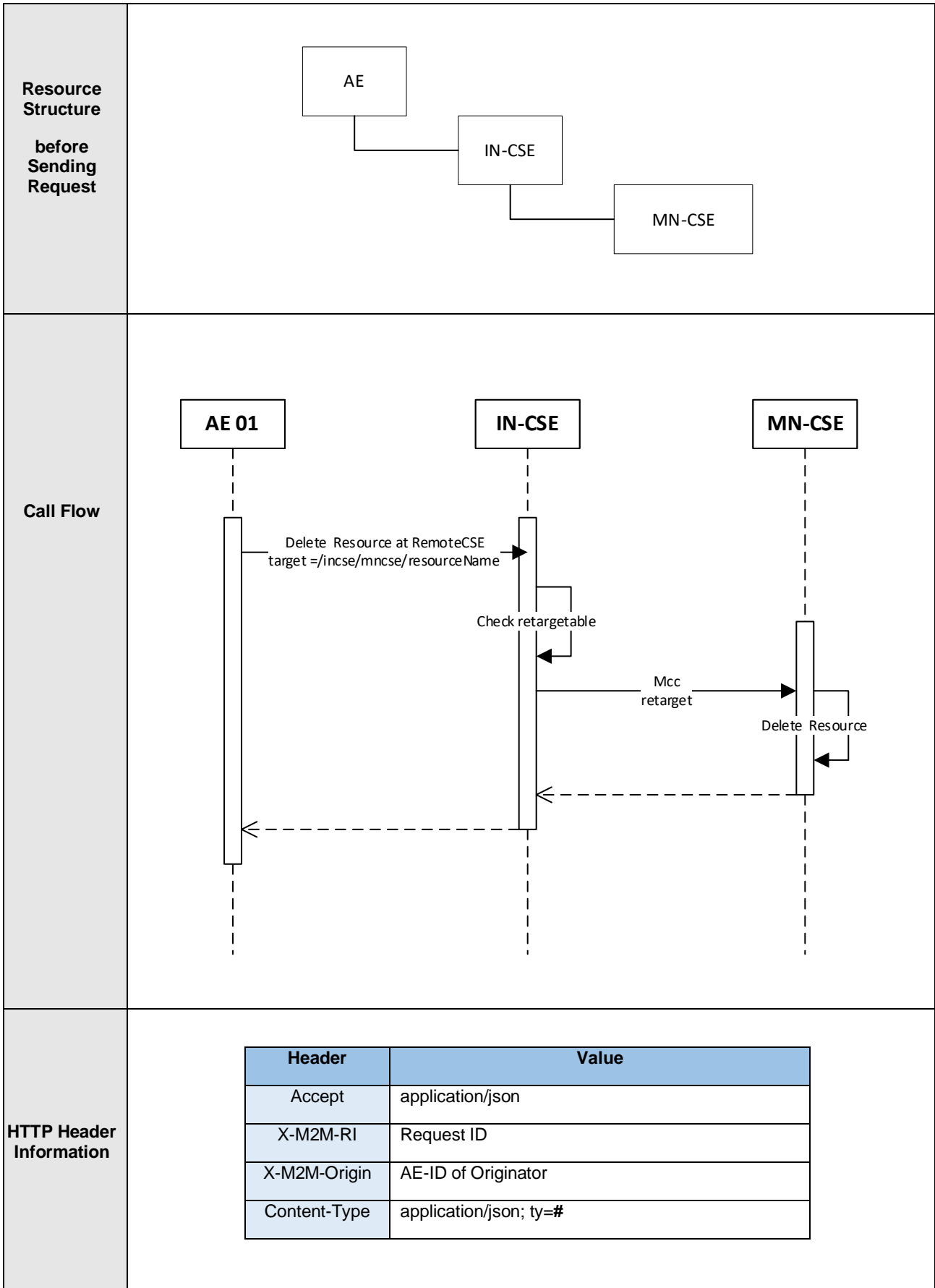
VNPT

**TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
CÔNG TY CÔNG NGHỆ THÔNG TIN VNPT**

```
"mbs": 100000,  
"cni": 0,  
"latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la"  
}  
}
```




Chức năng Retargeting / xóa resource tại remote Node

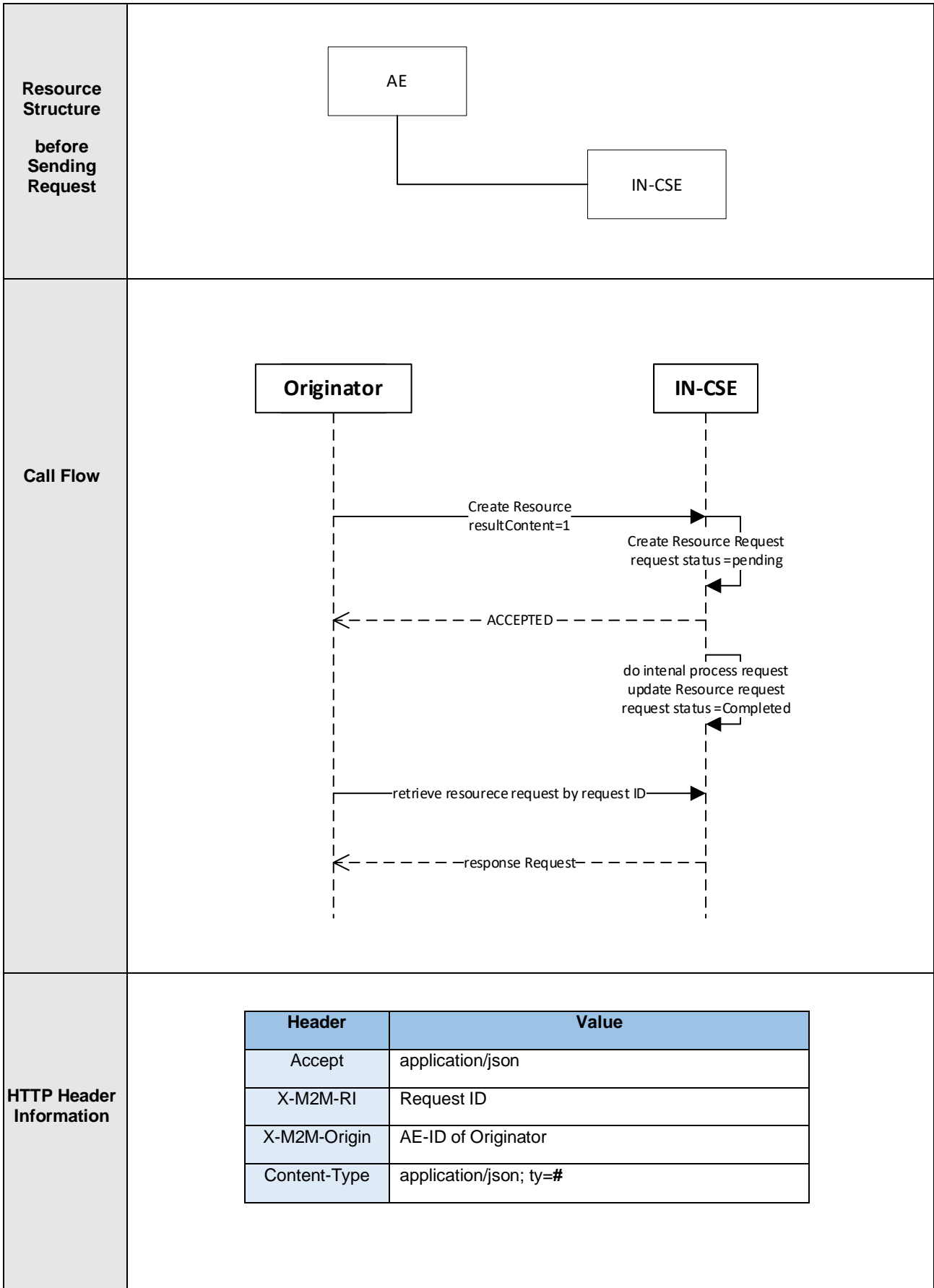


<p>Example</p>	<p>HTTP Request:</p> <p>DELETE /in-cse/in-name/remotecse-name/my_container?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: AE-ID of Originator</p> <p>Content-Type: application/json; ty=3</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2002</p> <pre>{ "m2m:cnt": { "st": 0, "ty": 3, "it": "1578543788351", "mni": 100, "ct": "1578543788351", "oldest": "/vnpt/vnpt/ae_light_04/cont_temp9/ol", "ri": "/vnpt/cnt-46cdb032b0fcbe76d8", "lbl": [], "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "cont_temp9",</pre>
-----------------------	--



	<pre>"mbs": 100000, "cni": 0, "latest": "/vnpt/vnpt/ae_light_04/cont_temp9/la" } }</pre>
--	--

Chức năng non-blocking synchronous request / tạo tài nguyên tại ICC với cơ chế đồng bộ



Example

HTTP Request:

POST /in-cse/in-name?rcn=0 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: AE-ID of Originator

Content-Type: application/json; ty=3

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 OK

Content-Type: application/json

X-M2M-RI: 12345678

X-M2M-RVI: 2a

X-M2M-RSC: 1000

HTTP Request:

GET /in-cse/req_requestID?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: AE-ID of Originator

Content-Type: application/json

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

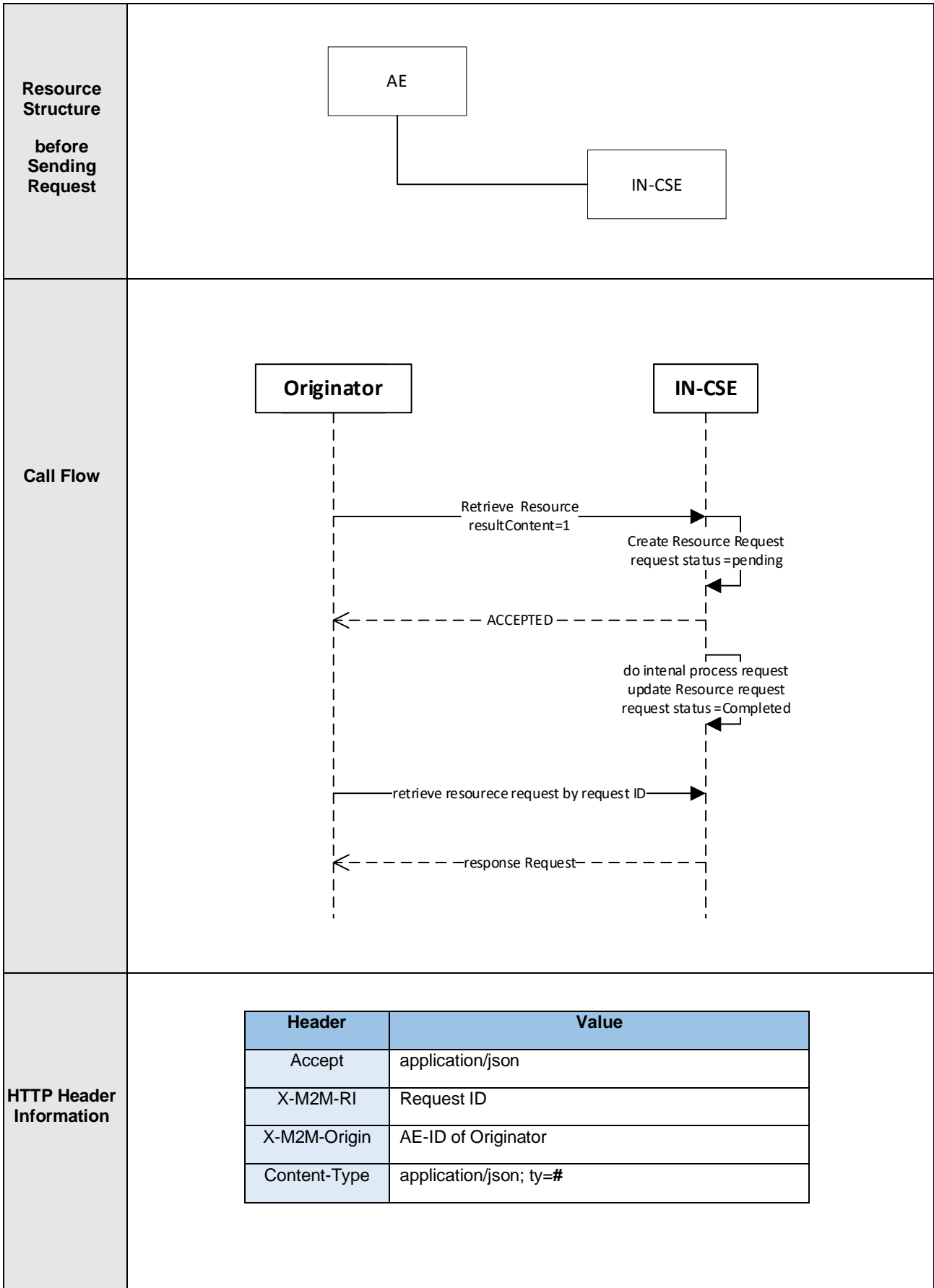
HTTP Response:

```
{
  "m2m:req": {
    "st": 0,
    "op": 1,
    "rs": 1,
    "org": "5bc1f522df3ab65f08b8ae7e05059e8b0a2cee7b6e0d01f0f0a98fde03751318",
    "ty": 17,
    "lt": "20200917T172619",
    "rid": "6c2dfe105090270976d",
    "ors": {
      "rsc": 2001,
      "pc": {
        "m2m:ae": {
          "rr": true,
          "poa": [
            "mqtt://14.225.13.88:1883"
          ],
          "api": "R.app.id.demo.of.any.vietnam.vn",
          "rn": "ae_11111"
        }
      },
      "ot": "1600338379939",
      "rqi": "{{ri}}"
    },
    "ct": "20200917T172619",
    "tg": "/vnpt/icc",
    "pc": {
      "m2m:ae": {
        "rr": true,
        "poa": [
          "mqtt://14.225.13.88:1883"
        ],
        "api": "R.app.id.demo.of.any.vietnam.vn",
        "rn": "ae_11111"
      }
    }
  }
}
```



	<pre> } }, "ri": "/vnpt/req-6c2dfe105090270976d", "pi": "/vnpt", "mi": { "rt": { "rtv": 1 }, "ty": 2 }, "rn": "req_6c2dfe105090270976d" } }</pre>
--	--

Chức năng non-blocking synchronous request / xem tài nguyên tại ICC với cơ chế đồng bộ



Example

HTTP Request:

GET /in-cse/in-name?rcn=0 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: AE-ID of Originator

Content-Type: application/json; ty=3

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 OK

Content-Type: application/json

X-M2M-RI: 12345678

X-M2M-RVI: 2a

X-M2M-RSC: 1000

HTTP Request:

GET /in-cse/req_requestID?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: AE-ID of Originator

Content-Type: application/json

Accept: application/json

X-M2M-RI: 1234

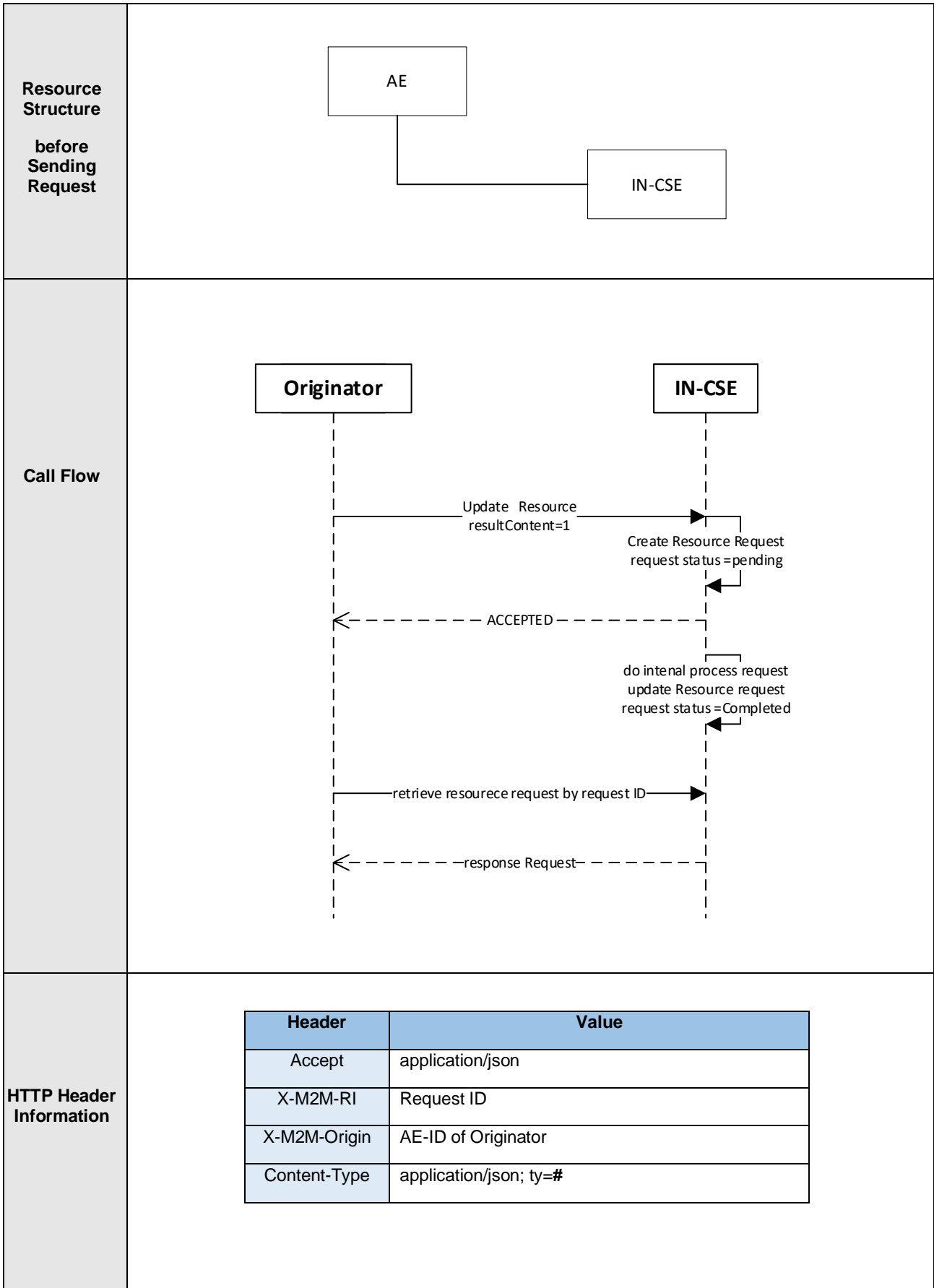
X-M2M-RVI: 2a

HTTP Response:

```
{
  "m2m:req": {
    "st": 0,
    "op": 1,
    "rs": 1,
    "org": "5bc1f522df3ab65f08b8ae7e05059e8b0a2cee7b6e0d01f0f0a98fde03751318",
    "ty": 17,
    "lt": "20200917T172619",
    "rid": "6c2dfe105090270976d",
    "ors": {
      "rsc": 2001,
      "pc": {
        "m2m:ae": {
          "rr": true,
          "poa": [
            "mqtt://14.225.13.88:1883"
          ],
          "api": "R.app.id.demo.of.any.vietnam.vn",
          "rn": "ae_11111"
        }
      },
      "ot": "1600338379939",
      "rqi": "{{ri}}"
    },
    "ct": "20200917T172619",
    "tg": "/vnpt/icc",
    "pc": {
      "m2m:ae": {
        "rr": true,
        "poa": [
          "mqtt://14.225.13.88:1883"
        ],
        "api": "R.app.id.demo.of.any.vietnam.vn",
        "rn": "ae_11111"
      }
    }
  }
}
```

```
    }  
  },  
  "ri": "/vnpt/req-6c2dfe105090270976d",  
  "pi": "/vnpt",  
  "mi": {  
    "rt": {  
      "rtv": 1  
    },  
    "ty": 2  
  },  
  "rn": "req_6c2dfe105090270976d"  
}  
}
```

Chức năng non-blocking synchronous request / sửa tài nguyên tại ICC với cơ chế đồng bộ



Example

HTTP Request:

PUT /in-cse/in-name?rcn=0 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: AE-ID of Originator

Content-Type: application/json; ty=3

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 OK

Content-Type: application/json

X-M2M-RI: 12345678

X-M2M-RVI: 2a

X-M2M-RSC: 1000

HTTP Request:

GET /in-cse/req_requestID?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: AE-ID of Originator

Content-Type: application/json

Accept: application/json

X-M2M-RI: 1234

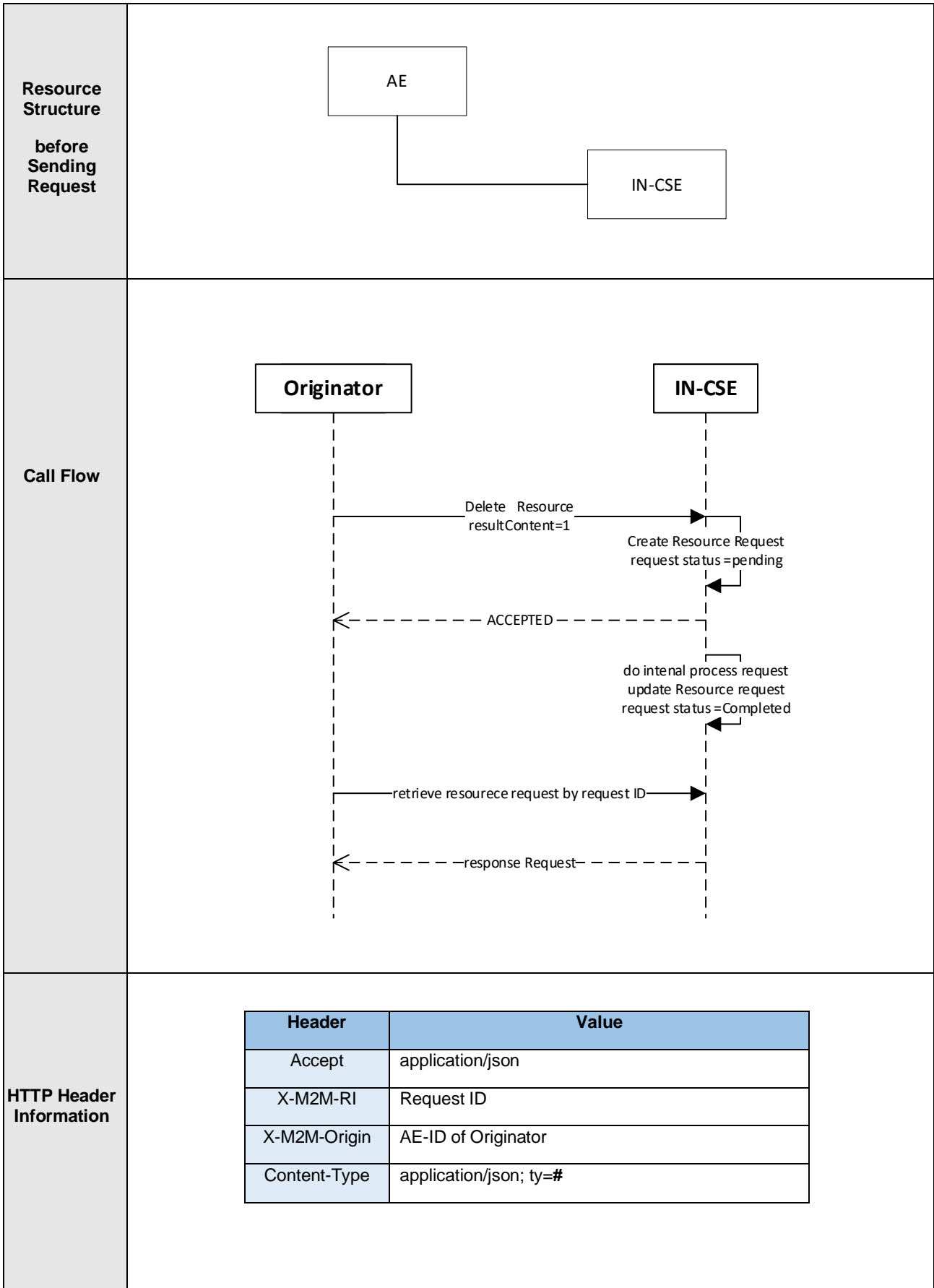
X-M2M-RVI: 2a

HTTP Response:

```
{
  "m2m:req": {
    "st": 0,
    "op": 1,
    "rs": 1,
    "org": "5bc1f522df3ab65f08b8ae7e05059e8b0a2cee7b6e0d01f0f0a98fde03751318",
    "ty": 17,
    "lt": "20200917T172619",
    "rid": "6c2dfe105090270976d",
    "ors": {
      "rsc": 2001,
      "pc": {
        "m2m:ae": {
          "rr": true,
          "poa": [
            "mqtt://14.225.13.88:1883"
          ],
          "api": "R.app.id.demo.of.any.vietnam.vn",
          "rn": "ae_11111"
        }
      },
      "ot": "1600338379939",
      "rqi": "{{ri}}"
    },
    "ct": "20200917T172619",
    "tg": "/vnpt/icc",
    "pc": {
      "m2m:ae": {
        "rr": true,
        "poa": [
          "mqtt://14.225.13.88:1883"
        ],
        "api": "R.app.id.demo.of.any.vietnam.vn",
        "rn": "ae_11111"
      }
    }
  }
}
```

```
    }  
  },  
  "ri": "/vnpt/req-6c2dfe105090270976d",  
  "pi": "/vnpt",  
  "mi": {  
    "rt": {  
      "rtv": 1  
    },  
    "ty": 2  
  },  
  "rn": "req_6c2dfe105090270976d"  
}  
}
```

Chức năng non-blocking synchronous request / xóa tài nguyên tại ICC với cơ chế đồng bộ



Example

HTTP Request:

DELETE /in-cse/in-name?rcn=0 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: AE-ID of Originator

Content-Type: application/json; ty=3

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 OK

Content-Type: application/json

X-M2M-RI: 12345678

X-M2M-RVI: 2a

X-M2M-RSC: 1000

HTTP Request:

GET /in-cse/req_requestID?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: AE-ID of Originator

Content-Type: application/json

Accept: application/json

X-M2M-RI: 1234

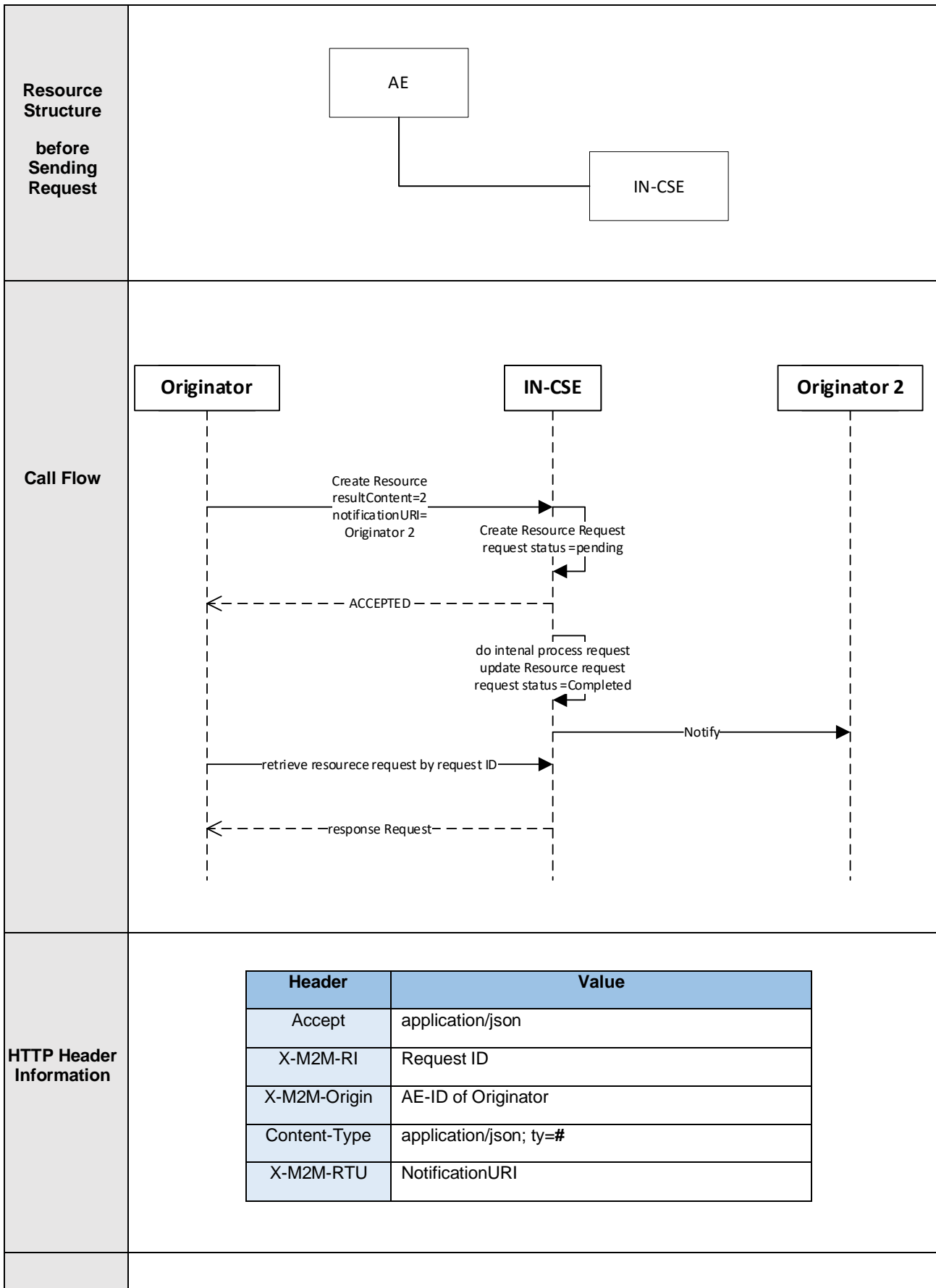
X-M2M-RVI: 2a

HTTP Response:

```
{
  "m2m:req": {
    "st": 0,
    "op": 1,
    "rs": 1,
    "org": "5bc1f522df3ab65f08b8ae7e05059e8b0a2cee7b6e0d01f0f0a98fde03751318",
    "ty": 17,
    "lt": "20200917T172619",
    "rid": "6c2dfe105090270976d",
    "ors": {
      "rsc": 2001,
      "pc": {
        "m2m:ae": {
          "rr": true,
          "poa": [
            "mqtt://14.225.13.88:1883"
          ],
          "api": "R.app.id.demo.of.any.vietnam.vn",
          "rn": "ae_11111"
        }
      },
      "ot": "1600338379939",
      "rqi": "{{ri}}"
    },
    "ct": "20200917T172619",
    "tg": "/vnpt/icc",
    "pc": {
      "m2m:ae": {
        "rr": true,
        "poa": [
          "mqtt://14.225.13.88:1883"
        ],
        "api": "R.app.id.demo.of.any.vietnam.vn",
        "rn": "ae_11111"
      }
    }
  }
}
```

```
    }  
  },  
  "ri": "/vnpt/req-6c2dfe105090270976d",  
  "pi": "/vnpt",  
  "mi": {  
    "rt": {  
      "rtv": 1  
    },  
    "ty": 2  
  },  
  "rn": "req_6c2dfe105090270976d"  
}  
}
```

Chức năng non-blocking Asynchronous request / tạo tài nguyên tại ICC với cơ chế bất đồng bộ



Example

HTTP Request:

```
POST /in-cse/in-name?rt=2=0 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: AE-ID of Originator
Content-Type: application/json; ty=3
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

HTTP Response:

```
200 OK
Content-Type: application/json
X-M2M-RI: 12345678
X-M2M-RVI: 2a
X-M2M-RSC: 1000
```

HTTP Request:

```
GET /in-cse/req_requestID?rcn=1 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: AE-ID of Originator
Content-Type: application/json
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

HTTP Response:

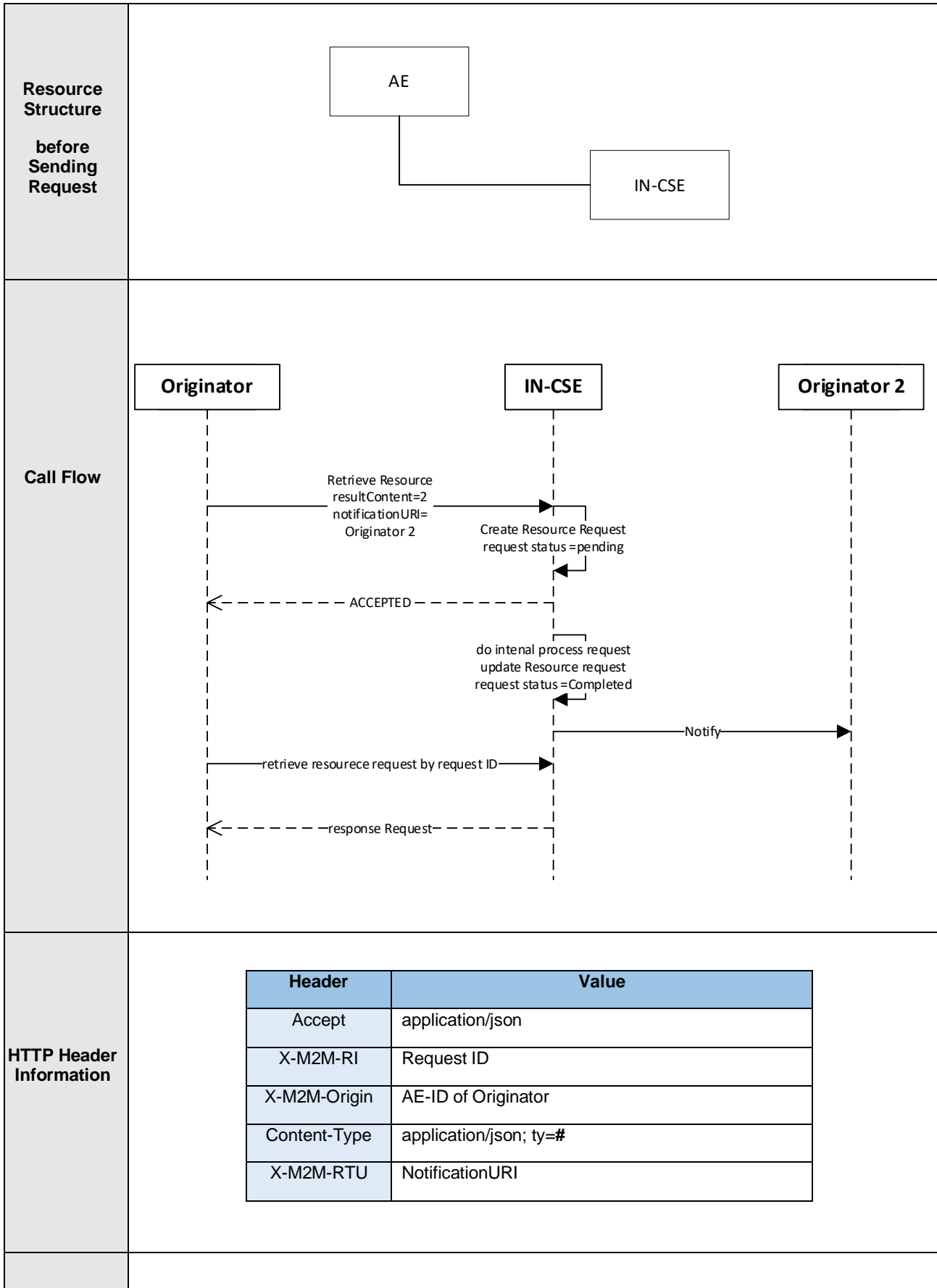
```
{
```

```
"m2m:req": {  
  "st": 0,  
  "op": 1,  
  "rs": 1,  
  "org": "5bc1f522df3ab65f08b8ae7e05059e8b0a2cee7b6e0d01f0f0a98fde03751318",  
  "ty": 17,  
  "lt": "20200917T172619",  
  "rid": "6c2dfe105090270976d",  
  "ors": {  
    "rsc": 2001,  
    "pc": {  
      "m2m:ae": {  
        "rr": true,  
        "poa": [  
          "mqtt://14.225.13.88:1883"  
        ],  
        "api": "R.app.id.demo.of.any.vietnam.vn",  
        "rn": "ae_11111"  
      }  
    },  
    "ot": "1600338379939",  
    "rqi": "{{ri}}"  
  },  
  "ct": "20200917T172619",  
  "tg": "/vnpt/icc",  
  "pc": {  
    "m2m:ae": {  
      "rr": true,  
      "poa": [  
        "mqtt://14.225.13.88:1883"  
      ],  
      "api": "R.app.id.demo.of.any.vietnam.vn",  
      "rn": "ae_11111"  
    }  
  }
```



	<pre>}, "ri": "/vnpt/req-6c2dfe105090270976d", "pi": "/vnpt", "mi": { "rt": { "rtv": 1 }, "ty": 2 }, "rn": "req_6c2dfe105090270976d" } }</pre>
--	--

Chức năng non-blocking Asynchronous request / xem tài nguyên tại ICC với cơ chế bất đồng bộ



Example

HTTP Request:

```
GET /in-cse/in-name?rt=2 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: AE-ID of Originator
Content-Type: application/json; ty=3
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

HTTP Response:

```
200 OK
Content-Type: application/json
X-M2M-RI: 12345678
X-M2M-RVI: 2a
X-M2M-RSC: 1000
```

HTTP Request:

```
GET /in-cse/req_requestID?rcn=1 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: AE-ID of Originator
Content-Type: application/json
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

HTTP Response:

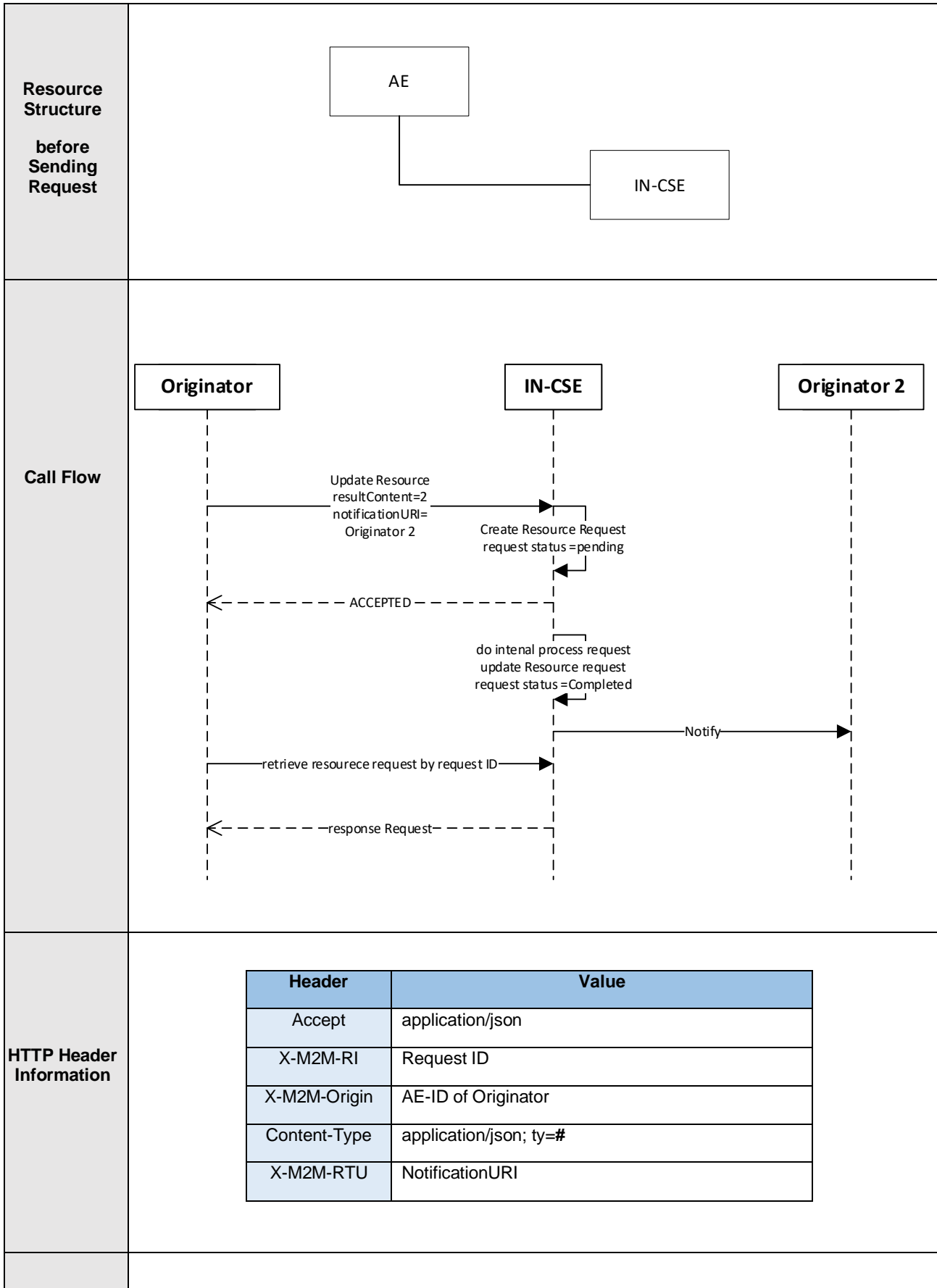
```
{
```

```
"m2m:req": {  
  "st": 0,  
  "op": 1,  
  "rs": 1,  
  "org": "5bc1f522df3ab65f08b8ae7e05059e8b0a2cee7b6e0d01f0f0a98fde03751318",  
  "ty": 17,  
  "lt": "20200917T172619",  
  "rid": "6c2dfe105090270976d",  
  "ors": {  
    "rsc": 2001,  
    "pc": {  
      "m2m:ae": {  
        "rr": true,  
        "poa": [  
          "mqtt://14.225.13.88:1883"  
        ],  
        "api": "R.app.id.demo.of.any.vietnam.vn",  
        "rn": "ae_11111"  
      }  
    },  
    "ot": "1600338379939",  
    "rqi": "{{ri}}"  
  },  
  "ct": "20200917T172619",  
  "tg": "/vnpt/icc",  
  "pc": {  
    "m2m:ae": {  
      "rr": true,  
      "poa": [  
        "mqtt://14.225.13.88:1883"  
      ],  
      "api": "R.app.id.demo.of.any.vietnam.vn",  
      "rn": "ae_11111"  
    }  
  }
```



```
},  
"ri": "/vnpt/req-6c2dfe105090270976d",  
"pi": "/vnpt",  
"mi": {  
  "rt": {  
    "rtv": 1  
  },  
  "ty": 2  
},  
"rn": "req_6c2dfe105090270976d"  
}  
}
```

Chức năng non-blocking Asynchronous request / sửa tài nguyên tại ICC với cơ chế bất đồng bộ



Example

HTTP Request:

```
PUT /in-cse/in-name?rt=2=0 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: AE-ID of Originator
Content-Type: application/json; ty=3
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

HTTP Response:

```
200 OK
Content-Type: application/json
X-M2M-RI: 12345678
X-M2M-RVI: 2a
X-M2M-RSC: 1000
```

HTTP Request:

```
GET /in-cse/req_requestID?rcn=1 HTTP/1.1
Host: 192.168.0.10:8282
X-M2M-Origin: AE-ID of Originator
Content-Type: application/json
Accept: application/json
X-M2M-RI: 1234
X-M2M-RVI: 2a
```

HTTP Response:

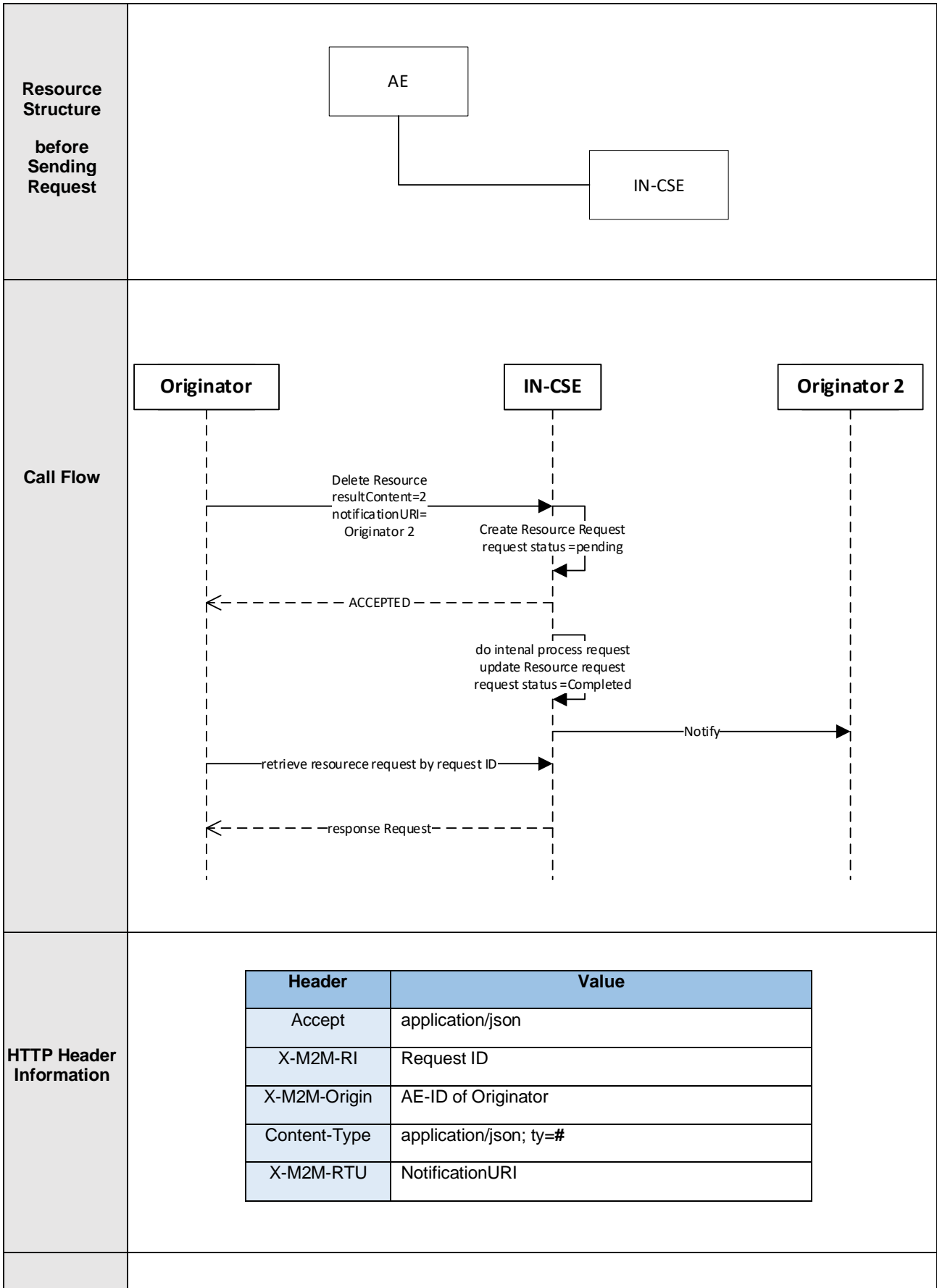
```
{
```

```
"m2m:req": {
  "st": 0,
  "op": 1,
  "rs": 1,
  "org": "5bc1f522df3ab65f08b8ae7e05059e8b0a2cee7b6e0d01f0f0a98fde03751318",
  "ty": 17,
  "lt": "20200917T172619",
  "rid": "6c2dfe105090270976d",
  "ors": {
    "rsc": 2001,
    "pc": {
      "m2m:ae": {
        "rr": true,
        "poa": [
          "mqtt://14.225.13.88:1883"
        ],
        "api": "R.app.id.demo.of.any.vietnam.vn",
        "rn": "ae_11111"
      }
    },
    "ot": "1600338379939",
    "rqi": "{{ri}}"
  },
  "ct": "20200917T172619",
  "tg": "/vnpt/icc",
  "pc": {
    "m2m:ae": {
      "rr": true,
      "poa": [
        "mqtt://14.225.13.88:1883"
      ],
      "api": "R.app.id.demo.of.any.vietnam.vn",
      "rn": "ae_11111"
    }
  }
}
```



	<pre>}, "ri": "/vnpt/req-6c2dfe105090270976d", "pi": "/vnpt", "mi": { "rt": { "rtv": 1 }, "ty": 2 }, "rn": "req_6c2dfe105090270976d" } }</pre>
--	--

Chức năng non-blocking Asynchronous request / xóa tài nguyên tại ICC với cơ chế bất đồng bộ



Example

HTTP Request:

```
DELETE /in-cse/in-name?rt=2=0 HTTP/1.1  
Host: 192.168.0.10:8282  
X-M2M-Origin: AE-ID of Originator  
Content-Type: application/json; ty=3  
Accept: application/json  
X-M2M-RI: 1234  
X-M2M-RVI: 2a
```

HTTP Response:

```
200 OK  
Content-Type: application/json  
X-M2M-RI: 12345678  
X-M2M-RVI: 2a  
X-M2M-RSC: 1000
```

HTTP Request:

```
GET /in-cse/req_requestID?rcn=1 HTTP/1.1  
Host: 192.168.0.10:8282  
X-M2M-Origin: AE-ID of Originator  
Content-Type: application/json  
Accept: application/json  
X-M2M-RI: 1234  
X-M2M-RVI: 2a
```

HTTP Response:

```
{
```

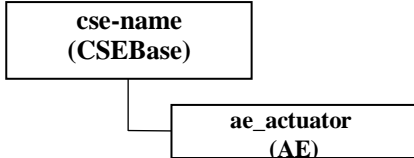
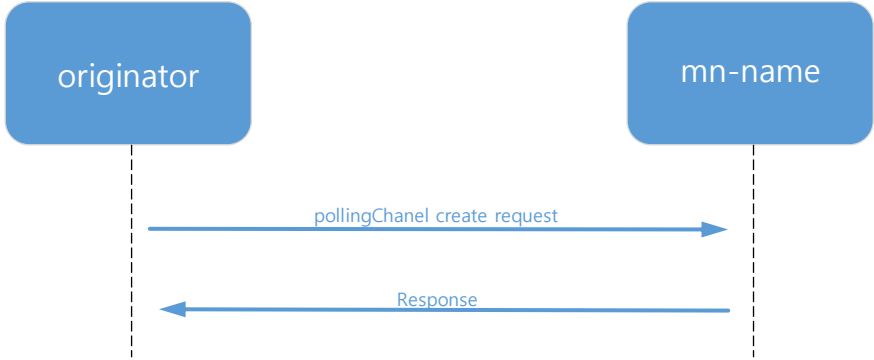
```
"m2m:req": {  
  "st": 0,  
  "op": 1,  
  "rs": 1,  
  "org": "5bc1f522df3ab65f08b8ae7e05059e8b0a2cee7b6e0d01f0f0a98fde03751318",  
  "ty": 17,  
  "lt": "20200917T172619",  
  "rid": "6c2dfe105090270976d",  
  "ors": {  
    "rsc": 2001,  
    "pc": {  
      "m2m:ae": {  
        "rr": true,  
        "poa": [  
          "mqtt://14.225.13.88:1883"  
        ],  
        "api": "R.app.id.demo.of.any.vietnam.vn",  
        "rn": "ae_11111"  
      }  
    },  
    "ot": "1600338379939",  
    "rqi": "{{ri}}"  
  },  
  "ct": "20200917T172619",  
  "tg": "/vnpt/icc",  
  "pc": {  
    "m2m:ae": {  
      "rr": true,  
      "poa": [  
        "mqtt://14.225.13.88:1883"  
      ],  
      "api": "R.app.id.demo.of.any.vietnam.vn",  
      "rn": "ae_11111"  
    }  
  }
```



```
},  
"ri": "/vnpt/req-6c2dfe105090270976d",  
"pi": "/vnpt",  
"mi": {  
  "rt": {  
    "rtv": 1  
  },  
  "ty": 2  
},  
"rn": "req_6c2dfe105090270976d"  
}  
}
```

Tạo resource type <pollingChannel> (AE creates a <pollingChannel> resource in registrar CSE via a Create Request)

Giao thức HTTP:

API Id	<p>HTTP_API/PCH/CRE/001</p> <p>HTTP_API/PCH//CRE/001_RCN0</p> <p>HTTP_API/PCH//CRE/001_RCN1</p> <p>HTTP_API/PCH//CRE/001_RCN2</p> <p>HTTP_API/PCH//CRE/001_RCN3</p>								
API Name	<pollingChannel> resource CREATE								
Target Resource	<pollingChannel>								
Description	API tạo resource pollingChannel qua HTTP								
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>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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of Originator
Header	Value								
Accept	application/json								
X-M2M-RI	Request ID								
X-M2M-Origin	AE-ID of Originator								



	<table border="1"><tr><td>Content-Type</td><td>application/json; ty=15</td></tr></table>	Content-Type	application/json; ty=15
Content-Type	application/json; ty=15		
Example with RCN=0	<p>HTTP_API/PCH/CRE/001_RCNO</p> <p>HTTP Request:</p> <p>POST /cse-name/ae-name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json; ty=15</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:pch": { "rn": "my_poll_04" } }</pre> <p>HTTP Response:</p> <p>201 Created</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p>		
	<p>HTTP_API/PCH/CRE/001</p> <p>HTTP_API/PCH/CRE/001_RCNO</p>		

**Example
with
no RCN or
RCN=1**

HTTP Request:

```
POST /cse-name/ae_name?rcn=1 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:pch": {
    "rn": "my_poll_03"
  }
}
```

HTTP Response:

```
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:pch": {
    "ct": "1580462909227",
    "pcu": "/vnpt/pch-ce4910101ab04f8355",
    "ty": 15,
    "ri": "/vnpt/pch-73207b3c216038c39",
    "lbl": [],
    "it": "1580462909227",
```



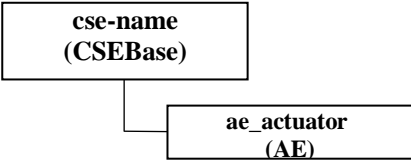
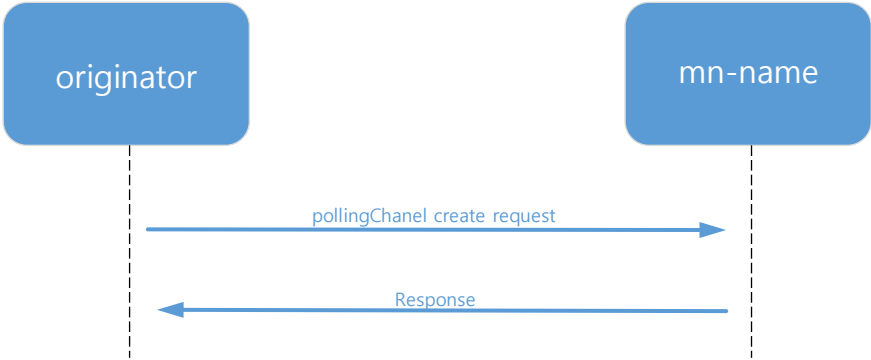
	<pre>"pi": "/vnpt/Cba6c0e0f0a872695", "rn": "my_poll_03" } }</pre>
Example with RCN=2	<p>HTTP_API/GRP/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /cse-name/ae_name?rcn=2 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json; ty=9 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a</p> <pre>{ "m2m:pch": { "rn": "my_poll_05" } }</pre> <p>HTTP Response:</p> <p>201 Created Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2001</p> <pre>{ "m2m:uri": "/vnpt/vnpt/ae_light_04/my_poll_05"</pre>

<p>Example with RCN=3</p>	<pre> } HTTP_API/PCH/CRE/001_RCN3 HTTP Request: POST /mn-name/ae_name?rcn=3 HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: CAE5630283216026458665 Content-Type: application/json; ty=15 Accept: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:pch": { "rn": "my_poll_06" } } HTTP Response: 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:pch": { "ct": "1580463234922", "pcu": "/vnpt/pch-da10d1067a4cfc8b5", </pre>
----------------------------------	--



	<pre>"ty": 15, "ri": "/vnpt/pch-86a3d4c7cdeb842e", "bl": [], "lt": "1580463234922", "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "my_poll_06" }, "m2m:uri": "/vnpt/vnpt/ae_light_04/my_poll_06" }</pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/PCH/CRE/001 MQTT_API/PCH//CRE/001_RCNO MQTT_API/PCH//CRE/001_RCNI MQTT_API/PCH//CRE/001_RCNI MQTT_API/PCH//CRE/001_RCNI MQTT_API/PCH//CRE/001_RCNI
API Name	<pollingChannel> resource CREATE
Target Resource	<pollingChannel>
Description	API tạo resource pollingChannel qua MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	MQTT_API/PCH/CRE/001_RCNO MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload <pre>{ "from": "acp_admin", "operation": 1,</pre>

	<pre>"resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 15, "content": { "m2m:pch": { "rn": "my_poll_000" } } }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1580463534179" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT _API/PCH/CRE/001</p> <p>MQTT _API/PCH/CRE/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 15, "content": { "m2m:pch": {</pre>

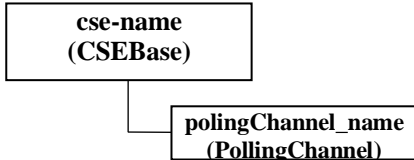
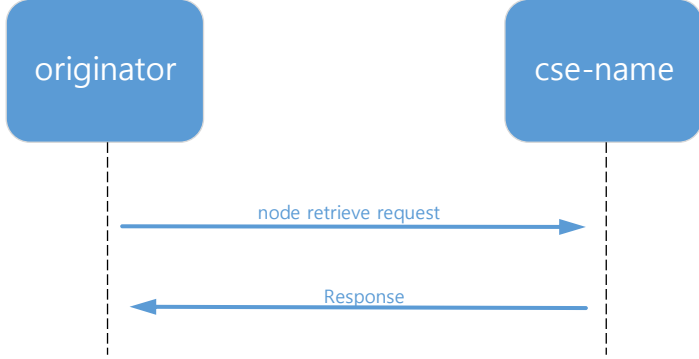
	<pre> "rn": "my_poll_111" } } } MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1580463705977", "content": { "m2m:pch": { "ct": "1580463705984", "pcu": "/vnpt/pch-d42ca2e80ab6fb78b", "ty": 15.0, "ri": "/vnpt/pch-87a361a49ea0796cf", "lb": [], "lt": "1580463705984", "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "my_poll_111" } } } </pre>
<p>Example with RCN=2</p>	<p>MQTT _API/GRP/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 1, "resultContent": 2, "requestIdentifier": "12345", </pre>

	<pre> "to": "/vnpt/vnpt/ae_light_04", "resourceType": 15, "content": { "m2m:pch": { "rn": "my_poll_222" } } </pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre> { "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1580463745011", "content": { "m2m:uri": "/vnpt/vnpt/ae_light_04/my_poll_222" } } </pre>
<p>Example with RCN=3</p>	<p>MQTT _API/PCH/CRE/001_RCN3</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 1, "resultContent": 3, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04", "resourceType": 15, "content": { "m2m:pch": { "rn": "my_poll_333" } } } </pre>

```
}  
}  
}  
MQTT Request Topic: /oneM2M/resp[key được cấp]/json  
MQTT Request Payload  
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1580463789242",  
  "content": {  
    "m2m:pch": {  
      "ct": "1580463789260",  
      "pcu": "/vnpt/pch-538e1cbe4f6a8a36",  
      "ty": 15.0,  
      "ri": "/vnpt/pch-c2c750ae81339871",  
      "lbl": [],  
      "lt": "1580463789260",  
      "pi": "/vnpt/Cba6c0e0f0a872695",  
      "rn": "my_poll_333"  
    },  
    "m2m:uri": "/vnpt/vnpt/ae_light_04/my_poll_333"  
  }  
}
```

Truy vấn thông tin resource type <pollingChannel> (AE retrieves information of a pollingChannel resource via a Retrieve Request)

Giao thức HTTP:

API Id	HTTP_API/PCH/RET/001 HTTP_API/PCH/RET/001_RCN1										
API Name	<pollingChannel> RETRIEVE										
Target Resource	<pollingChannel>										
Description	API truy vấn thông tin < pollingChannel> qua giao thức HTTP										
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>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;</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;
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										

**Example
with
no RCN or
RCN=1**

HTTP_API/PCH/RET/001

HTTP_API/PCH/RET/001_RCN1

HTTP Request:

GET /cse-name/polling_name?rcn=1 HTTP/1.1

Host: 192.168.0.10:8282

X-M2M-Origin: CSE31231241/AE5630283216026458665

Accept: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

HTTP Response:

200 OK

Content-Type: application/json

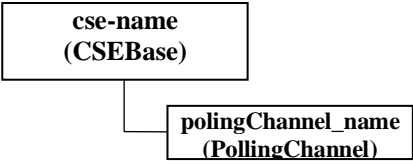
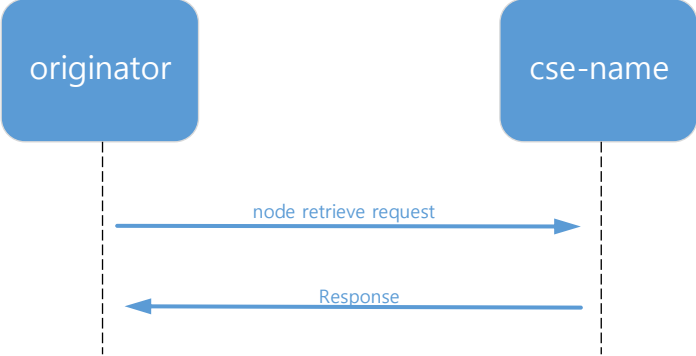
X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2000

```
{
  "m2m:pch": {
    "ct": "1580459542753",
    "pcu": "/vnpt/pch-701b470fa61c98847",
    "ty": 15,
    "ri": "/vnpt/pch-fed293c1cce5fc05",
    "lbl": [],
    "lt": "1580459542753",
    "pi": "/vnpt",
    "rn": "my_poll_01"
  }
}
```

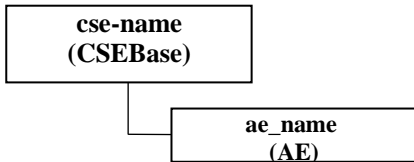
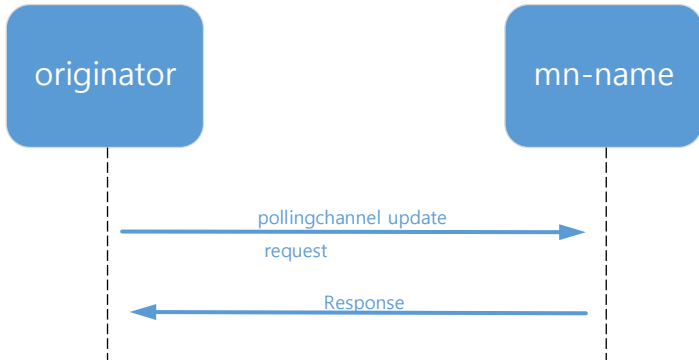
Giao thức MQTT:

API Id	HTTP_API/PCH/RET/001 HTTP_API/PCH/RET/001_RCN1
API Name	<pollingChannel> RETRIEVE
Target Resource	<pollingChannel>
Description	API truy vấn thông tin < pollingChannel> qua giao thức MQTT
Resource Structure before Sending Request	 <p>The diagram shows a hierarchical structure. A box labeled 'cse-name (CSEBase)' is connected by a line to a box labeled 'polingChannel_name (PollingChannel)'.</p>
Call Flow	 <p>The diagram shows two entities: 'originator' and 'cse-name'. A blue arrow labeled 'node retrieve request' points from 'originator' to 'cse-name'. A blue arrow labeled 'Response' points from 'cse-name' back to 'originator'. Vertical dashed lines extend from each entity to the message arrows.</p>
Example with no RCN or RCN=1	<p>HTTP_API/PCH/RET/001 HTTP_API/PCH/RET/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 2, "resultContent": 1, "requestIdentifier": "12345",</pre>

```
"to": "/vnpt/vnpt/my_poll_01",  
"resourceType": 14  
}  
MQTT Request Topic: /oneM2M/resp[key được cấp]/json  
MQTT Request Payload  
{  
  "responseStatusCode": 2000,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1580462323003",  
  "content": {  
    "m2m:pch": {  
      "ct": "1580459542753",  
      "pcu": "/vnpt/pch-701b470fa61c98847",  
      "ty": 15.0,  
      "ri": "/vnpt/pch-fed293c1cce5fc05",  
      "lbl": [],  
      "lt": "1580459542753",  
      "pi": "/vnpt",  
      "rn": "my_poll_01"  
    }  
  }  
}
```

Sửa thuộc tính resource type <pollingChannel> (AE updates attribute in pollingChannel resource via a Update Request)

Giao thức HTTP:

API Id	HTTP_API/PCH/UPD/001 HTTP_API/PCH/UPD/001_RCNO HTTP_API/PCH/UPD/001_RCNI										
API Name	<pollingChannel> UPDATE via HTTP										
Target Resource	<pollingChannel>										
Description	API sửa thông tin <pollingChannel> qua giao thức HTTP										
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>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;</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;
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										



<p>Example with RCN=0</p>	<p>HTTP_API/PCH/UPD/001_RCN0</p> <p>HTTP Request:</p> <p>PUT /cse-name/ae_name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json</p> <p>Accept: application/json;ty=14</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:pch": { "lbl": ["my_poll_04"] } }</pre> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: cse-name/ae_name</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
	<p>HTTP_API/PCH/UPD/001</p> <p>HTTP_API/PCH/UPD/001_RCN1</p> <p>HTTP Request:</p>

<p>Example with no RCN or RCN=1</p>	<pre> PUT /cse-name/ae_name?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:pch": { "lbl": ["my_poll_04"] } } HTTP Response: 200 OK Content-Location: cse-name/node_name Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004 { "m2m:pch": { "ct": "1580463057545", "pcu": "/vnpt/pch-701c45a0894dc30ed15", "ty": 15, "ri": "/vnpt/pch-d006b22b11e9bfcf2", "lbl": ["my_poll_04"], "it": "1580464387048", </pre>
--	---



	<pre> "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "my_poll_04" } }} } </pre>
--	---

Giao thức MQTT:

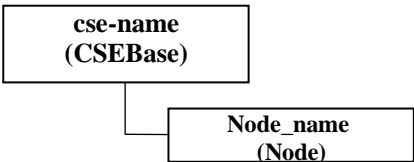
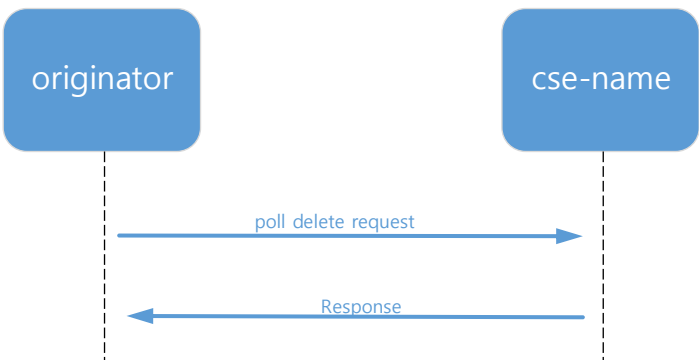
API Id	MQTT_API/PCH/UPD/001 MQTT_API/PCH/UPD/001_RCNO MQTT_API/PCH/UPD/001_RCNI
API Name	<pollingChannel> UPDATE via MQTT
Target Resource	<pollingChannel>
Description	API sửa thông tin <pollingChannel> qua giao thức MQTT
Resource Structure before Sending Request	<pre> graph TD CSE["cse-name (CSEBase)"] --- AE["ae_name (AE)"] </pre>
Call Flow	<pre> sequenceDiagram participant O as originator participant M as mn-name O->>M: pollingchannel update request M-->O: Response </pre>
	MQTT_API/PCH/UPD/001_RCNO

<p>Example with RCN=0</p>	<p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/my_poll_04", "resourceType": 15, "content": { "m2m:pch": { "lbl": ["my_poll_04"] } } }</pre> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2004, "requestIdentifier": "12345", "originatingTimestamp": "1580453281020" }</pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/PCH/UPD/001</p> <p>MQTT_API/PCH/UPD/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3,</pre>


```
"resultContent": 1,  
"requestIdentifier": "12345",  
"to": "/vnpt/vnpt/ae_light_04/my_poll_04",  
"resourceType": 15,  
"content": {  
  "m2m:pch": {  
    "lbl": ["my_poll_04"]  
  }  
}  
}  
}  
MQTT Request Topic: /oneM2M/resp[key được cấp]/json  
MQTT Request Payload  
{  
  "responseStatusCode": 2004,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1580465062137",  
  "content": {  
    "m2m:pch": {  
      "ct": "1580463057545",  
      "pcu": "/vnpt/pch-701c45a0894dc30ed15",  
      "ty": 15.0,  
      "ri": "/vnpt/pch-d006b22b11e9bfcf2",  
      "lbl": ["my_poll_04"],  
      "lt": "1580465062154",  
      "pi": "/vnpt/Cba6c0e0f0a872695",  
      "rn": "my_poll_04"  
    }  
  }  
}
```

Xóa resource type <pollingChannel> (AE deletes a pollingChannel resource via a Delete Request)

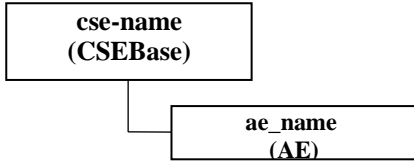
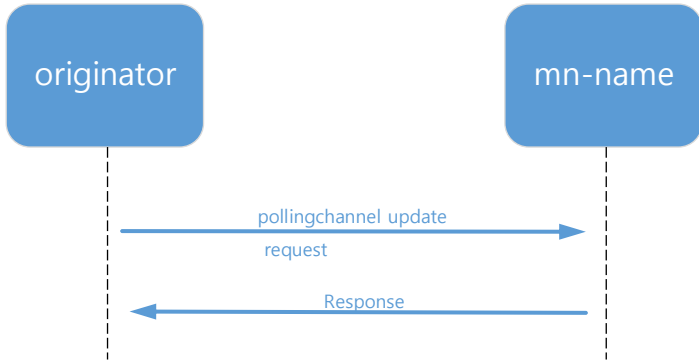
Giao thức HTTP:

API Id	HTTP_API/PCH/DEL/001 HTTP_API/PCH/ DEL /001_RCNO HTTP_API/PCH/ DEL /001_RCNI										
API Name	<pollingChannel> DELETE via HTTP										
Target Resource	<pollingChannel>										
Description	API xóa <pollingChannel> qua giao thức HTTP										
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>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;</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;
Header	Value										
Accept	application/ json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										

<p>Example with RCN=0</p>	<p>HTTP_API/PCH/DEL/001_RCN0</p> <p>HTTP Request:</p> <p>PUT /cse-name/node_name?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json</p> <p>Accept: application/json;ty=14</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: cse-name/node_name</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
<p>Example with no RCN or</p>	<p>HTTP_API/PCH/DEL/001</p> <p>HTTP_API/PCH/DEL/001_RCN1</p> <p>HTTP Request:</p> <p>PUT /cse-name/node_name?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p>

RCN=1	<p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: cse-name/node_name</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p> <pre>{ "m2m:nod": { "hcl": "xxxx.yyyy.zzzz", "ct": "1580443658427", "ty": 14, "acpi": ["/vnpt/acp-31999e975bcac994"], "ri": "/vnpt/nod-06fe0a4b9bf907f5e", "lbl": [], "lt": "1580453094691", "pi": "/vnpt", "ni": "1231239999", "mgca": "192.168.1.200", "rn": "node09" } }</pre>
--------------	---

Giao thức MQTT:

API Id	MQTT_API/PCH/DEL/001 MQTT_API/PCH/DEL/001_RCNO MQTT_API/PCH/DEL/001_RCNI
API Name	<pollingChannel> DELETE via MQTT
Target Resource	<pollingChannel>
Description	API xóa <pollingChannel> qua giao thức MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	<p>MQTT_API/PCH/DEL/001_RCNO</p> <p>MQTT Request Topic: /oneM2M/resp[key được cấp]/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4, "resultContent": 0, "requestIdentifier": "12345",</pre>



	<pre>"to": "/vnpt/vnpt/ae_light_04/my_poll_04", "resourceType": 15, "content": { "m2m:pch": { "lbl": ["my_poll_04"] } } } } MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "responseStatusCode": 2002, "requestIdentifier": "12345", "originatingTimestamp": "1580453281020" }</pre>
<p>Example with no RCN or RCN=1</p>	<pre>MQTT_API/PCH/DEL/001 MQTT_API/PCH/DEL/001_RCN1 MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "from": "acp_admin", "operation": 4, "resultContent": 1, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_light_04/my_poll_04", "resourceType": 15, "content": { "m2m:pch": { "lbl": ["my_poll_04"] } } }</pre>

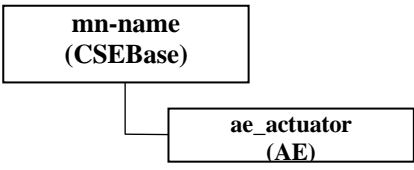
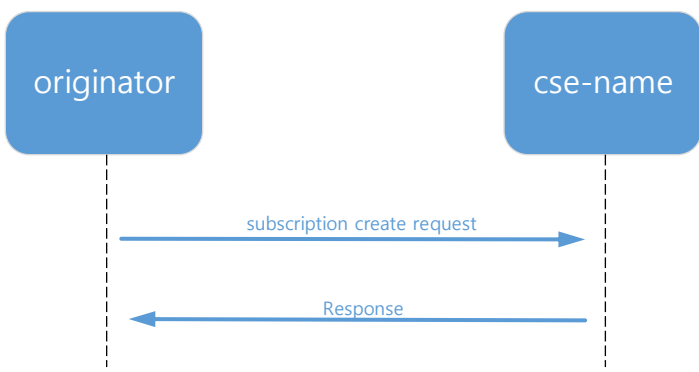
	<pre>} } } MQTT Request Topic: /oneM2M/resp[key được cấp]/json MQTT Request Payload { "responseStatusCode": 2004, "requestIdentifier": "12345", "originatingTimestamp": "1580465062137", "content": { "m2m:pch": { "ct": "1580463057545", "pcu": "/vnpt/pch-701c45a0894dc30ed15", "ty": 15.0, "ri": "/vnpt/pch-d006b22b11e9bfcf2", "lbl": ["my_poll_04"], "lt": "1580465062154", "pi": "/vnpt/Cba6c0e0f0a872695", "rn": "my_poll_04" } } }</pre>
--	---

IV.1.8. Subscription & Notification

Mô tả chức năng: tiếp tục cập nhật ...

Tạo <subscription> (AE creates a subscription to Application Entity resource via subscription Create Request).

Giao thức HTTP:

API Id	<p>HTTP_API/SUB/CRE/001</p> <p>HTTP_API/SUB/CRE/001_RCN0</p> <p>HTTP_API/SUB/CRE/001_RCN1</p> <p>HTTP_API/SUB/CRE/001_RCN2</p> <p>HTTP_API/SUB/CRE/001_RCN3</p>										
API Name	<subscription> CREATE										
Target Resource	<subscription>										
Description	API tạo resource type <subscription> qua giao thức HTTP										
Resource Structure before Sending Request											
Call Flow											
HTTP Header Information	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #a0c0ff;"> <th style="text-align: left;">Header</th> <th style="text-align: left;">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> </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
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json; ty=23										

<p>Example with RCN=0</p>	<p>HTTP_API/SUB/CRE/001_RCN0</p> <p>HTTP Request:</p> <p>POST /cse-name/ae_actuator?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json; ty=23</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>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</p> <p>Content-Location: mn-name/ae_actuator/ae_sub</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p>

	X-M2M-RSC: 2001
<p>Example with no RCN or RCN=1</p>	<p>HTTP_API/SUB/CRE/001</p> <p>HTTP_API/SUB/CRE/001_RCN1</p> <p>HTTP Request:</p> <p>POST /cse-name/ae_actuator?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json; ty=23</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>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</p> <p>Content-Location: mn-name/ae_actuator/ae_sub</p>



	<p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>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"], "cnm": 2, "mnm": 50, "enc": { "net": [2] }, "nct": 2 } }</pre>
<p>Example with RCN=2</p>	<p>HTTP_API/SUB/CRE/001_RCN2</p> <p>HTTP Request:</p> <p>POST /cse-name/ae_actuator?rcn=2 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json; ty=23</p>

	<p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>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</p> <p>Content-Location: mn-name/ae_actuator/ae_sub</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2001</p> <pre>{ "m2m:uri": "mn-name/ae_actuator/ae_sub" }</pre>
	<p>HTTP_API/SUB/CRE/001_RCN3</p>

Example
with
RCN=3

HTTP Request:

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"
  }
}
```

HTTP Response:

201 Created

Content-Location: mn-name/ae_actuator/ae_sub

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

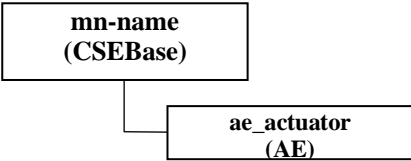
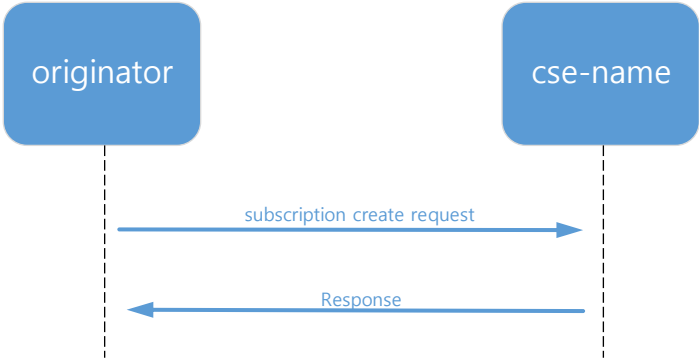
X-M2M-RSC: 2001

```
{
```



```
"m2m:sub": {  
  "rn": "ae_sub",  
  "ty": 23,  
  "ri": "SUB583675048372974938",  
  "pi": "CAE5630283216026458665",  
  "ct": "20180302T070445",  
  "lt": "20180302T070445",  
  "nu": [  
    "https://192.168.0.10:8282/notification/handler"  
  ],  
  "cnm": 2,  
  "mnm": 50,  
  "enc": {  
    "net": [2]  
  },  
  "nct": 2  
}
```

Giao thức MQTT:

API Id	MQTT_API/SUB/CRE/001 MQTT_API/SUB/CRE/001_RCN0 MQTT_API/SUB/CRE/001_RCN1 MQTT_API/SUB/CRE/001_RCN2 MQTT_API/SUB/CRE/001_RCN3
API Name	<subscription> CREATE
Target Resource	<subscription>
Description	API tạo resource type <subscription> qua giao thức MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	<p>MQTT_API/SUB/CRE/001_RCN0</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt.si/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1,</pre>



	<pre>"resultContent": 0, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_sensor_01", "resourceType": 23, "content": { "m2m:sub": { "rn": "sub_trigger_change_state_light_red1", "enc": { "net": [1] }, "nu": ["/CSE00202001123141/C8d4215d15db058014"], "nct": 1 } } }</pre> <p>MQTT Request Topic: /oneM2M/resp/vnpt.si/Cfc9a9cfe7a2b727e/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1580436609506" }</pre>
<p>Example with no RCN or RCN=1</p>	<pre>HTTP_API/SUB/CRE/001 HTTP_API/SUB/CRE/001_RCN1</pre> <p>MQTT Request Topic: /oneM2M/resp/vnpt.si /Cfc9a9cfe7a2b727e/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1,</pre>


```
"resultContent": 1,  
"requestIdentifier": "12345",  
"to": "/vnpt/vnpt/ae_sensor_01",  
"resourceType": 23,  
"content": {  
  "m2m:sub": {  
    "rn": "sub_trigger_change_state_light_red111",  
    "enc": {  
      "net": [1]  
    },  
    "nu": ["/CSE00202001123141/C8d4215d15db058014"],  
    "nct": 1  
  }  
}
```

MQTT Request Topic: /oneM2M/resp/vnpt.si/Cfc9a9cfe7a2b727e/json

MQTT Request Payload

```
{  
  "responseStatusCode": 2001,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1580717143856",  
  "content": {  
    "m2m:sub": {  
      "ct": "1580717143867",  
      "ty": 23.0,  
      "nu": ["/CSE00202001123141/C8d4215d15db058014"],  
      "ri": "/vnpt.si/sub-8afc7c044f180bfaa",  
      "lt": "1580717143867",  
      "pi": "/vnpt.si/C07108b53d2975b006b",  
      "enc": {  
        "net": [1.0]  
      },  
      "rn": "sub_trigger_change_state_light_red1111",  
    }  
  }  
}
```



	<pre>"nct": 1.0 } } }</pre>
Example with RCN=2	<p>HTTP_API/SUB/CRE/001_RCN2</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt.si/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 2, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_sensor_01", "resourceType": 23, "content": { "m2m:sub": { "rn": "sub_trigger_change_state_light_red222", "enc": { "net": [1] }, "nu": ["/CSE00202001123141/C8d4215d15db058014"], "nct": 1 } } }</pre> <p>MQTT Request Topic: /oneM2M/resp/vnpt.si/Cfc9a9cfe7a2b727e/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345",</pre>

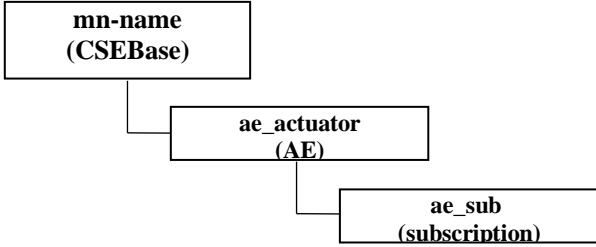
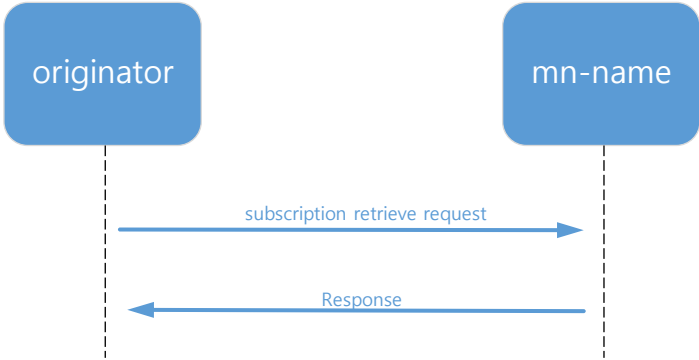
	<pre>"originatingTimestamp": "1580717328633", "content": { "m2m:uri": "/vnpt.si/icc/ae_sensor_01/sub_trigger_change_state_light_red222" } }</pre>
<p>Example with RCN=3</p>	<p>HTTP_API/SUB/CRE/001_RCN3</p> <pre>{ "from": "acp_admin", "operation": 1, "resultContent": 3, "requestIdentifier": "12345", "to": "/vnpt/vnpt/ae_sensor_01", "resourceType": 23, "content": { "m2m:sub": { "rn": "sub_trigger_change_state_light_red333", "enc": { "net": [1] }, "nu": ["/CSE00202001123141/C8d4215d15db058014"], "nct": 1 } } }</pre> <p>MQTT Request Topic: /oneM2M/resp/vnpt.si/Cfc9a9cfe7a2b727e/json</p> <p>MQTT Request Payload</p> <pre>{ "responseStatusCode": 2001, "requestIdentifier": "12345", "originatingTimestamp": "1580717143856",</pre>



```
"content": {  
  "m2m:sub": {  
    "ct": "1580717143867",  
    "ty": 23.0,  
    "nu": ["/CSE00202001123141/C8d4215d15db058014"],  
    "ri": "/vnpt.si/sub-8afc7c044f180bfaa",  
    "lt": "1580717143867",  
    "pi": "/vnpt.si/C07108b53d2975b006b",  
    "enc": {  
      "net": [1.0]  
    },  
    "rn": "sub_trigger_change_state_light_red1111",  
    "nct": 1.0  
  },  
  "m2m:uri": "/vnpt.si/icc/ae_sensor_01/sub_trigger_change_state_light_red333"  
}
```

Truy vấn thông tin resource type <subscription> (AE retrieves information about a subscription via subscription Retrieve Request such as expirationTime, labels, etc.)

Giao thức HTTP:

API Id	HTTP_API/SUB/RET/001 HTTP_API/SUB/RET/001_RCN1										
API Name	<subscription> RETRIEVE										
Target Resource	<subscription>										
Description	API truy vấn <subscription> qua giao thức HTTP										
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>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;</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;
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										

Example
with
no RCN or
RCN=1

HTTP_API/SUB/RET/001

HTTP Request:

GET /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

HTTP Response:

200 OK

Content-Location: mn-name/ae_actuator/ae_sub

Content-Type: application/json

X-M2M-RI: 1234

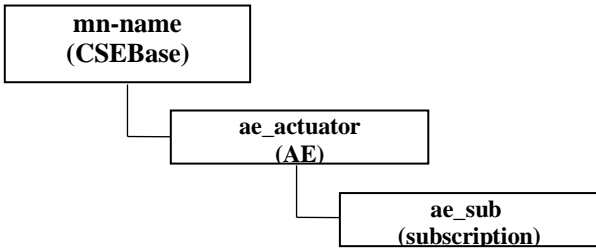
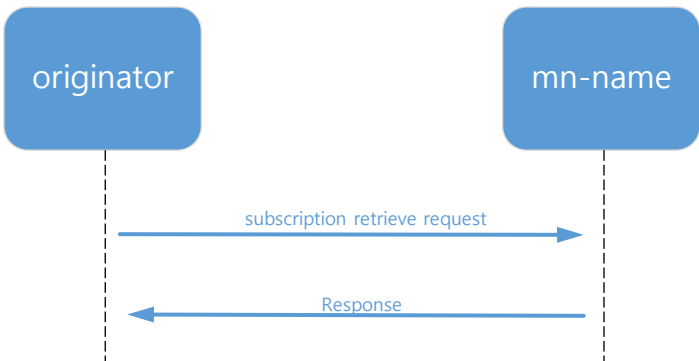
X-M2M-RVI: 2a

X-M2M-RSC: 2000

```
{
  "m2m:sub": {
    "rn": "ae_sub",
    "ty": 23,
    "ri": "SUB583675048372974938",
    "pi": "CAE5630283216026458665",
    "ct": "20180302T070445",
    "lt": "20180302T070445",
    "nu": [
      "https://192.168.0.10:8282/notification/handler"
    ],
    "cnm": 2,
```

	<pre> "mnm": 50, "enc": { "net": [2] }, "nct": 2 } </pre>
--	---

Giao thức MQTT:

API Id	MQTT_API/SUB/RET/001 MQTT_API/SUB/RET/001_RCN1
API Name	<subscription> RETRIEVE
Target Resource	<subscription>
Description	API truy vấn <subscription> qua giao thức MQTT
Resource Structure before Sending Request	
Call Flow	
	MQTT_API/SUB/RET/001

Example
with
no RCN or
RCN=1

MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt.si/json

MQTT Request Payload

```
{
  "from": "acp_admin",
  "operation": 2,
  "resultContent": 1,
  "requestIdentifier": "12345",
  "to": "/vnpt/vnpt/ae_sensor_01",
  "resourceType": 23,
  "content": {
    "m2m:sub": {
      "rn": "sub_trigger_change_state_light_red1",
      "enc": {
        "net": [1]
      },
      "nu": ["/CSE00202001123141/C8d4215d15db058014"],
      "nct": 1
    }
  }
}
```

MQTT Request Topic: /oneM2M/resp/vnpt.si/Cfc9a9cfe7a2b727e/json

MQTT Request Payload

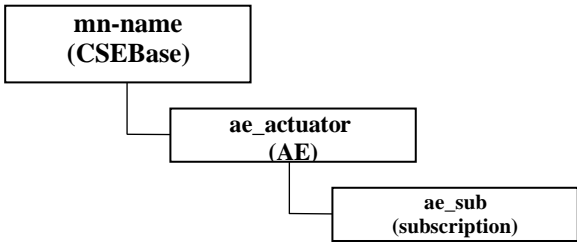
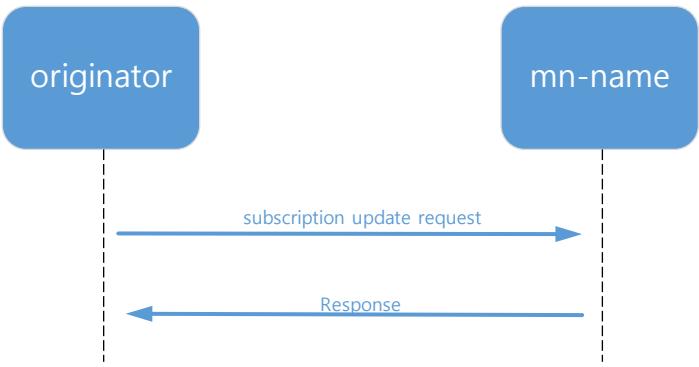
```
{
  "responseStatusCode": 2000,
  "requestIdentifier": "12345",
  "originatingTimestamp": "1580718539447",
  "content": {
    "m2m:sub": {
      "ct": "1580715201417",
      "ty": 23.0,
      "nu": ["/CSE00202001123141/C8d4215d15db058014"],
    }
  }
}
```




```
"ri": "/vnpt.si/sub-f30c098990ba011a32e1",  
"lt": "1580715201417",  
"pi": "/vnpt.si/C07108b53d2975b006b",  
"enc": {  
  "net": [1.0]  
},  
"rn": "sub_trigger_change_state_light_red1",  
"nct": 1.0  
}  
}  
}
```

Sửa thuộc tính resource type <subscription> (AE updates information about a subscription via subscription Retrieve Request)

Giao thức HTTP:

API Id	HTTP_API/SUB/UPD/001 HTTP_API/SUB/UPD/001_RCN0 HTTP_API/SUB/UPD/001_RCN1										
API Name	<subscription> UPDATE										
Target Resource	<subscription>										
Description	API sửa resource type <subscription> qua giao thức HTTP										
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>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;</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;
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										



<p>Example with RCN=0</p>	<p>HTTP_API/SUB/UPD/001_RCN0</p> <p>HTTP Request:</p> <p>PUT /mn-name/ae_actuator/ae_sub?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Content-Type: application/json</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <pre>{ "m2m:sub": { "nct": 3 } }</pre> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: mn-name/ae_actuator/ae_sub</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2004</p>
	<p>HTTP_API/SUB/UPD/001</p> <p>HTTP_API/SUB/UPD/001_RCN1</p>

Example
with
no RCN or
RCN=1

HTTP Request:

PUT /mn-name/ae_actuator/ae_sub?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:sub": {  
    "nct": 3  
  }  
}
```

HTTP Response:

200 OK

Content-Location: mn-name/ae_actuator/ae_sub

Content-Type: application/json

X-M2M-RI: 1234

X-M2M-RVI: 2a

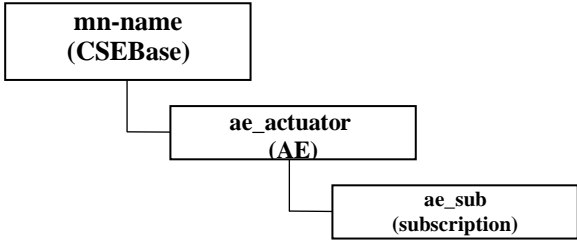
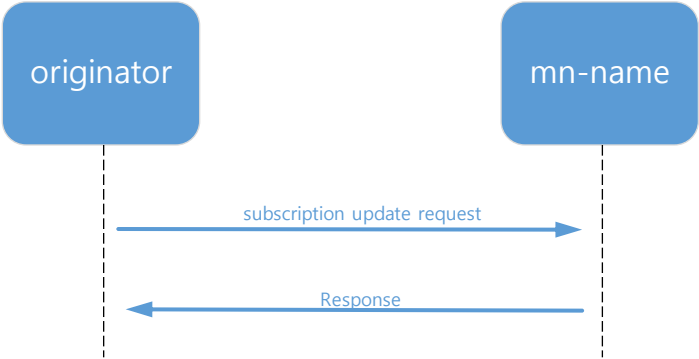
X-M2M-RSC: 2004

```
{  
  "m2m:sub": {  
    "rn": "ae_sub",  
    "ty": 23,  
    "ri": "SUB583675048372974938",  
    "pi": "CAE5630283216026458665",  
    "ct": "20180302T070445",  
    "it": "20180302T070445",  
  }  
}
```



```
"nu": [  
  "https://192.168.0.10:8282/notification/handler"  
],  
"cnm": 2,  
"mnm": 50,  
"enc": {  
  "net": [2]  
},  
"nct": 3  
}  
}
```

Giao thức MQTT:

API Id	MQTT_API/SUB/UPD/001 MQTT_API/SUB/UPD/001_RCNO MQTT_API/SUB/UPD/001_RCNI
API Name	<subscription> UPDATE
Target Resource	<subscription>
Description	API sửa resource type <subscription> qua giao thức MQTT
Resource Structure before Sending Request	
Call Flow	
Example with RCN=0	<p>MQTT_API/SUB/UPD/001_RCNO</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt.si/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 3, "resultContent": 0, }</pre>

	<pre> "requestIdentifier": "12345", "to": "/vnpt.si/icc/ae_sensor_01/ sub_trigger_change_state_light_red1", "resourceType": 23, "content": { "m2m:sub": { "rn": "sub_trigger_change_state_light_red1", "enc": { "net": [1] }, "nu": ["/CSE00202001123141/C8d4215d15db058014"], "nct":1 } } } </pre> <p>MQTT Request Topic: /oneM2M/resp/vnpt.si/Cfc9a9cfe7a2b727e/json</p> <p>MQTT Request Payload</p> <pre> { "responseStatusCode": 2004, "requestIdentifier": "12345", "originatingTimestamp": "1580718539447" } </pre>
<p>Example with no RCN or RCN=1</p>	<p>MQTT_API/SUB/UPD/001</p> <p>MQTT_API/SUB/UPD/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt.si/json</p> <p>MQTT Request Payload</p> <pre> { "from": "acp_admin", "operation": 3, "resultContent":1, "requestIdentifier": "12345", </pre>

```
"to": "/vnpt.si/icc/ae_sensor_01/ sub_trigger_change_state_light_red1",  
"resourceType": 23,  
"content": {  
  "m2m:sub": {  
    "rn": "sub_trigger_change_state_light_red1",  
    "enc": {  
      "net": [1]  
    },  
    "nu": ["/CSE00202001123141/C8d4215d15db058014"],  
    "nct":1  
  }  
}
```

MQTT Request Topic: /oneM2M/resp/vnpt.si/Cfc9a9cfe7a2b727e/json

MQTT Request Payload

```
{  
  "responseStatusCode": 2004,  
  "requestIdentifier": "12345",  
  "originatingTimestamp": "1580719482752",  
  "content": {  
    "m2m:sub": {  
      "ct": "1580715201417",  
      "ty": 23.0,  
      "nu": ["/CSE00202001123141/C8d4215d15db058014"],  
      "ri": "/vnpt.si/sub-f30c098990ba011a32e1",  
      "lt": "1580719482756",  
      "pi": "/vnpt.si/C07108b53d2975b006b",  
      "enc": {  
        "net": [1.0]  
      },  
      "rn": "sub_trigger_change_state_light_red1",  
      "nct": 1.0  
    }  
  }  
}
```



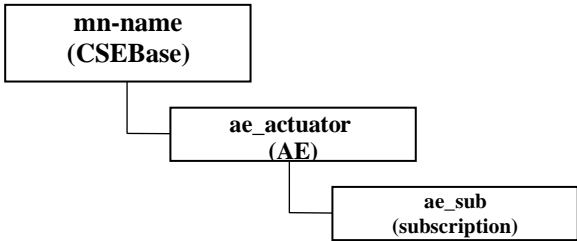
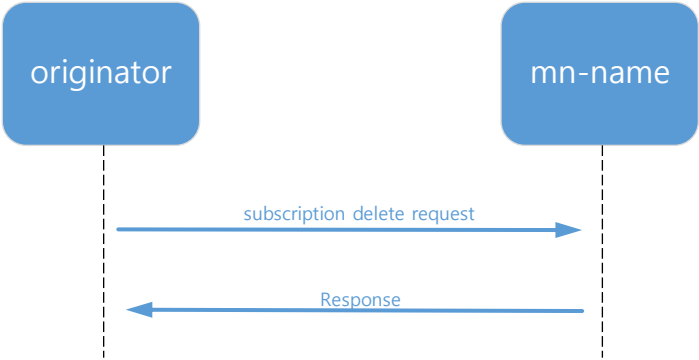

VNPT

**TẬP ĐOÀN BƯU CHÍNH VIỄN THÔNG VIỆT NAM
CÔNG TY CÔNG NGHỆ THÔNG TIN VNPT**

	}
	}

Xóa <subscription>, hủy việc trigger nhận thông báo. (AE cancels subscription via an subscription Delete Request)

Giao thức HTTP:

API Id	HTTP_API/SUB/DEL/001 HTTP_API/SUB/DEL/001_RCNO HTTP_API/SUB/DEL/001_RCNI										
API Name	<subscription> DELETE										
Target Resource	<subscription>										
Description	API xóa resource type <subscription> qua giao thức HTTP.										
Resource Structure before Sending Request	 <pre> graph TD mn_name["mn-name (CSEBase)"] --- ae_actuator["ae_actuator (AE)"] ae_actuator --- ae_sub["ae_sub (subscription)"] </pre>										
Call Flow	 <pre> sequenceDiagram participant originator participant mn_name originator->>mn_name: subscription delete request mn_name-->>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-Rl</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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-Rl	Request ID	X-M2M-Origin	AE-ID of request originator	Content-Type	application/json;
Header	Value										
Accept	application/json										
X-M2M-Rl	Request ID										
X-M2M-Origin	AE-ID of request originator										
Content-Type	application/json;										



<p>Example with no RCN or RCN=0</p>	<p>HTTP_API/SUB/DEL/001</p> <p>HTTP_API/SUB/DEL/001_RCNO</p> <p>HTTP Request:</p> <p>DELETE /mn-name/ae_actuator/ae_sub?rcn=0 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>HTTP Response:</p> <p>200 OK</p> <p>Content-Location: mn-name/ae_actuator/ae_sub</p> <p>Content-Type: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p> <p>X-M2M-RSC: 2002</p>
<p>Example with RCN=1</p>	<p>HTTP_API/SUB/DEL/001_RCN1</p> <p>HTTP Request:</p> <p>DELETE /mn-name/ae_actuator/ae_sub?rcn=1 HTTP/1.1</p> <p>Host: 192.168.0.10:8282</p> <p>X-M2M-Origin: CAE5630283216026458665</p> <p>Accept: application/json</p> <p>X-M2M-RI: 1234</p> <p>X-M2M-RVI: 2a</p>

HTTP Response:

200 OK

Content-Location: mn-name/ae_actuator/ae_sub

Content-Type: application/json

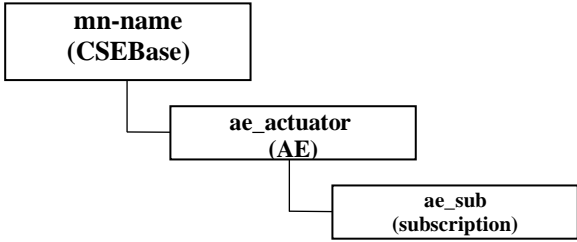
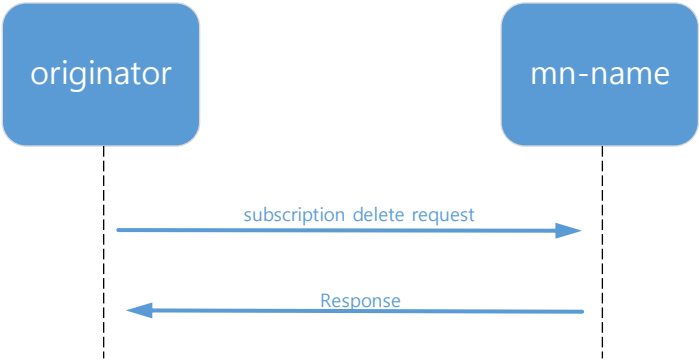
X-M2M-RI: 1234

X-M2M-RVI: 2a

X-M2M-RSC: 2002

```
{
  "m2m:sub": {
    "rn": "ae_sub",
    "ty": 23,
    "ri": "SUB583675048372974938",
    "pi": "CAE5630283216026458665",
    "ct": "20180302T070445",
    "lt": "20180302T070445",
    "nu": [
      "https://192.168.0.10:8282/notification/handler"
    ],
    "cnm": 2,
    "mnm": 50,
    "enc": {
      "net": [2]
    },
    "nct": 3
  }
}
```

Giao thức MQTT:

API Id	MQTT_API/SUB/DEL/001 MQTT_API/SUB/DEL/001_RCN0 MQTT_API/SUB/DEL/001_RCN1
API Name	<subscription> DELETE
Target Resource	<subscription>
Description	API xóa resource type <subscription> qua giao thức MQTT.
Resource Structure before Sending Request	
Call Flow	
Example with no RCN or RCN=0	<p>MQTT_API/SUB/DEL/001 MQTT_API/SUB/DEL/001_RCN0</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt.si/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4,</pre>

	<pre>"resultContent":0, "requestIdentifier": "12345", "to": "/vnpt.si/icc/ae_sensor_01/sub_trigger_change_state_light_red1", "resourceType": 23 } MQTT Request Topic: /oneM2M/resp/vnpt.si/Cfc9a9cfe7a2b727e/json MQTT Request Payload { "responseStatusCode": 2002, "requestIdentifier": "12345", "originatingTimestamp": "1580719735508" }</pre>
<p>Example with RCN=1</p>	<p>MQTT_API/SUB/DEL/001_RCN1</p> <p>MQTT Request Topic: /oneM2M/req/Cfc9a9cfe7a2b727e/vnpt.si/json</p> <p>MQTT Request Payload</p> <pre>{ "from": "acp_admin", "operation": 4, "resultContent":1, "requestIdentifier": "12345", "to": "/vnpt.si/icc/ae_sensor_01/sub_trigger_change_state_light_red1111", "resourceType": 23 } MQTT Request Topic: /oneM2M/resp/vnpt.si/Cfc9a9cfe7a2b727e/json MQTT Request Payload { "responseStatusCode": 2002, "requestIdentifier": "12345", "originatingTimestamp": "1580719823687",</pre>

```
"content": {  
  "m2m:sub": {  
    "ct": "1580717143867",  
    "ty": 23.0,  
    "nu": ["/CSE00202001123141/C8d4215d15db058014"],  
    "ri": "/vnpt.si/sub-8afc7c044f180bfaa",  
    "lt": "1580717143867",  
    "pi": "/vnpt.si/C07108b53d2975b006b",  
    "enc": {  
      "net": [1.0]  
    },  
    "rn": "sub_trigger_change_state_light_red1111",  
    "nct": 1.0  
  }  
}
```

Phụ lục A : Ví dụ về notification

A.1.0 Giới thiệu chung

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.

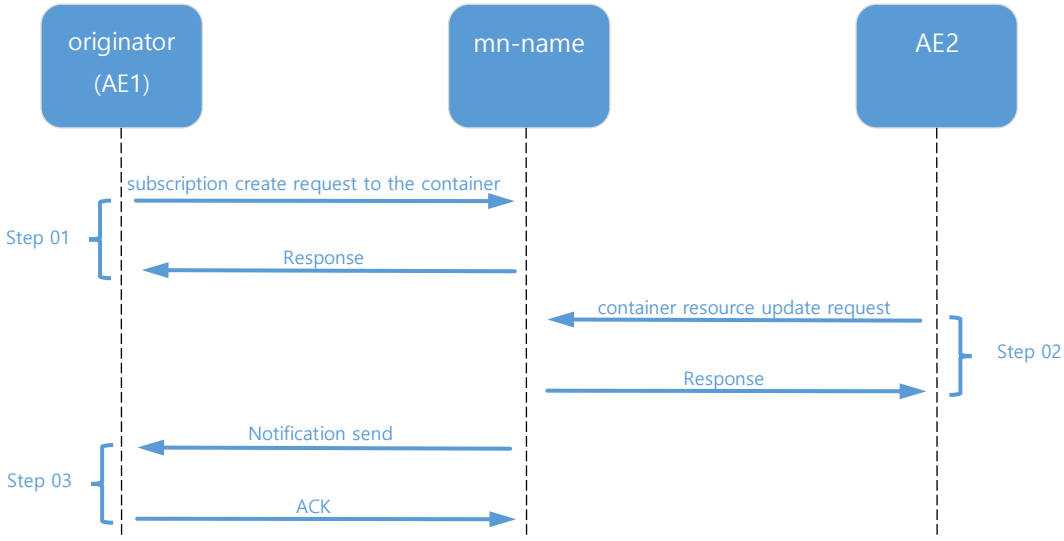
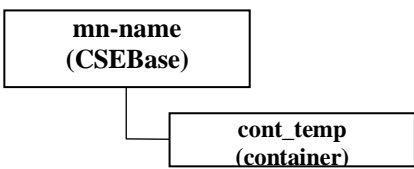
In this clause, notification examples are provided for the understanding of notification procedure. Especially, examples have different notificationEvent in the eventNotificationCriteria. The notificationEventType value is specified in the Table A.1.0-1 and set when notification is sent.

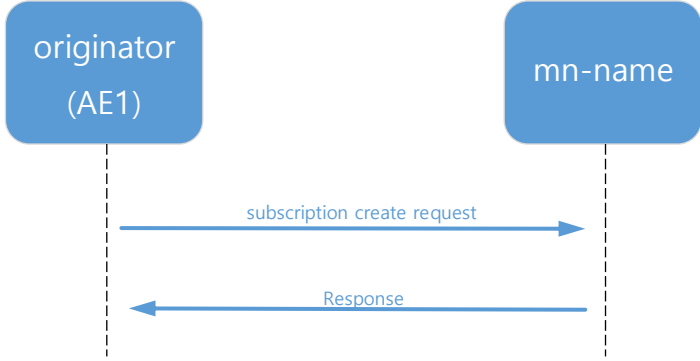


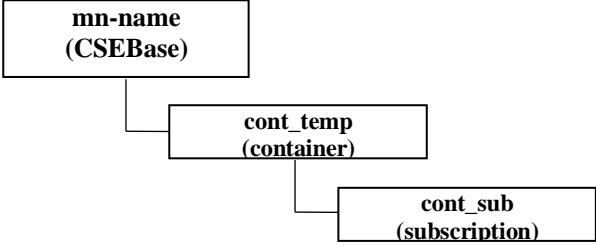
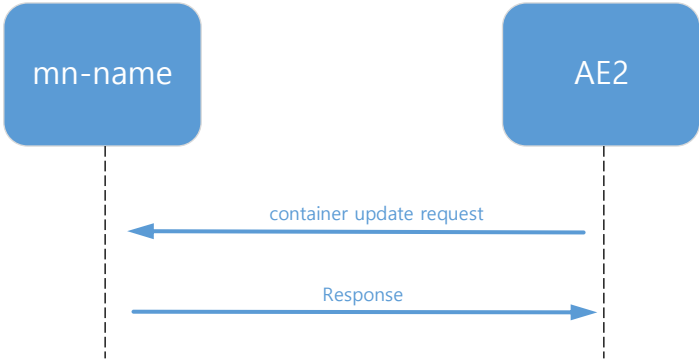
Table A.1.0-1: Interpretation of notificationEventType

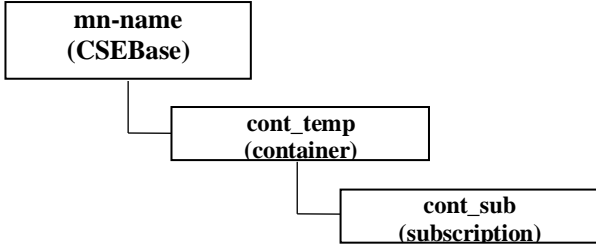
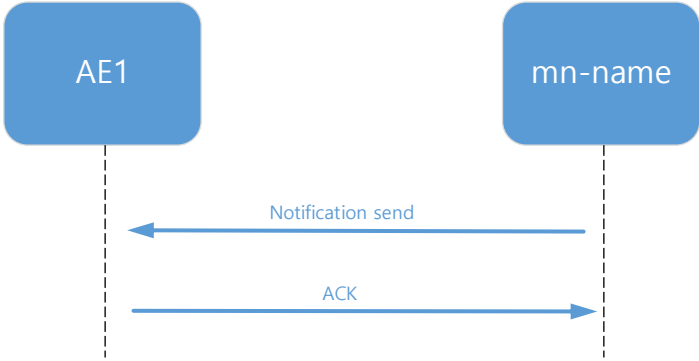
Value	Interpretation	Note
1	Update_of_Resource	Default
2	Delete_of_Resource	
3	Create_of_Direct_Child_Resource	
4	Delete_of_Direct_Child_Resource	

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 notificationEventType 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>  <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>	
Resource Structure before Sending Request		

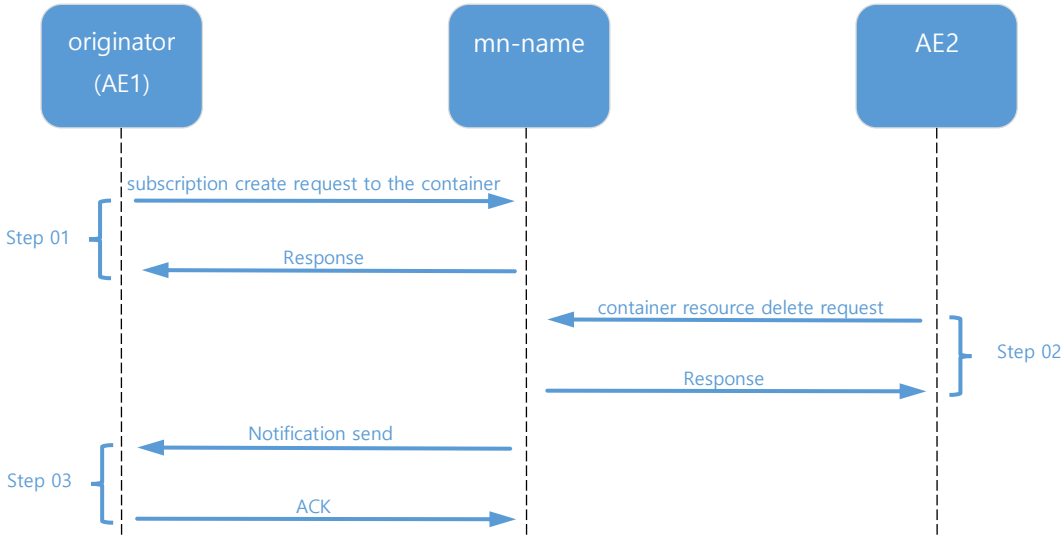
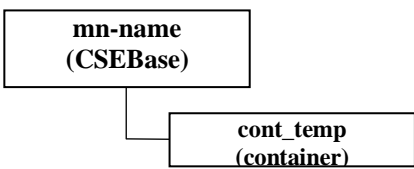
Step 01	Call Flow											
	HTTP Header Information	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Header</th> <th style="text-align: left;">Value</th> </tr> </thead> <tbody> <tr> <td>Accept</td> <td>application/json</td> </tr> <tr> <td>X-M2M-RI</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> </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
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json; ty=23											
Example	<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> <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>											

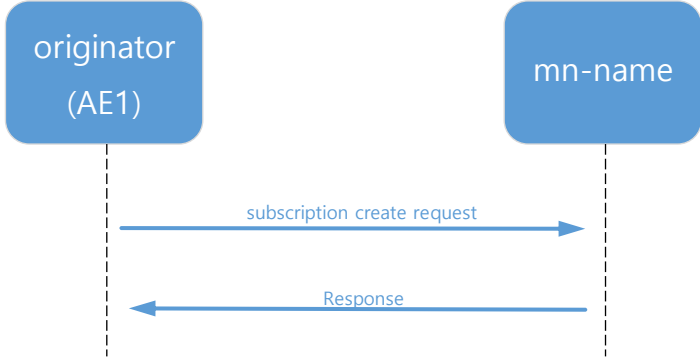
Step 02	Resource Structure before Sending Request											
	Call Flow											
	HTTP Header Information	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Header</th> <th style="text-align: left;">Value</th> </tr> </thead> <tbody> <tr> <td>Accept</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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of Originator	Content-Type	application/json;
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json;											
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> <pre>200 OK Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004</pre>											

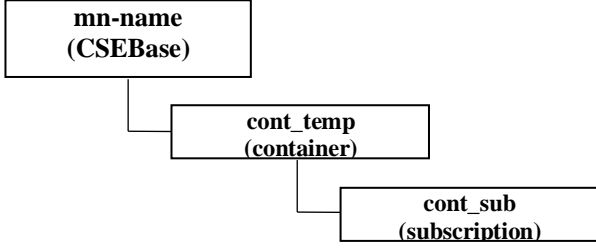
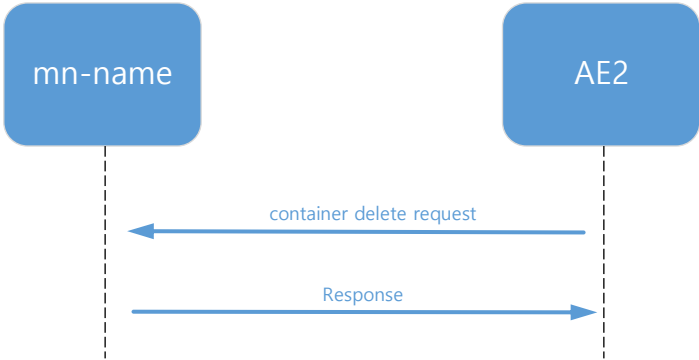
		<pre> { "m2m:cnt": { "cbs": 10, "cni": 0, "ct": "20180406T125807", "et": "99991231T235959", "lbl": ["indoor_temp"], "lt": "20180406T130109", "mbs": 60000000, "mia": 1600, "mni": 300, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T1258071405855183193603_cse01", "rn": "cont_temp", "st": 1, "ty": 3 } } </pre>									
Step 03	Resource Structure before Sending Request										
	Call Flow										
	HTTP Header Information	<table border="1" data-bbox="560 1682 1347 1856"> <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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of Originator	Content-Type
Header	Value										
Accept	application/json										
X-M2M-RI	Request ID										
X-M2M-Origin	AE-ID of Originator										
Content-Type	application/json;										
		<p>API/NOTI/NET1/STEP03</p> <p>HTTP Request:</p>									

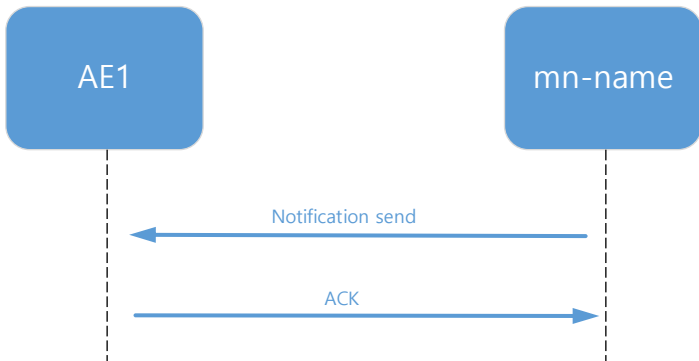
	<p>Example</p>	<pre> POST HTTP/1.1 Accept: application/json Host: 192.168.0.10:8282 X-M2M-Origin: mn-name Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a { "m2m:sgn": { "sur": "mn-name/cont_temp/cont_sub", "nev": { "net": 1, "rep": { "m2m:cnt": { "cbs": 10, "cni": 0, "ct": "20180406T125807", "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> <pre> 200 OK X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000 </pre>
--	-----------------------	---

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>  <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>	
Resource Structure before Sending Request		

Step 01	Call Flow	 <pre> graph LR A[originator (AE1)] -- "subscription create request" --> B[mn-name] B -- "Response" --> A </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; ty=23</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
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json; ty=23											
Example	<p>API/NOTI/NET2/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": [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>											

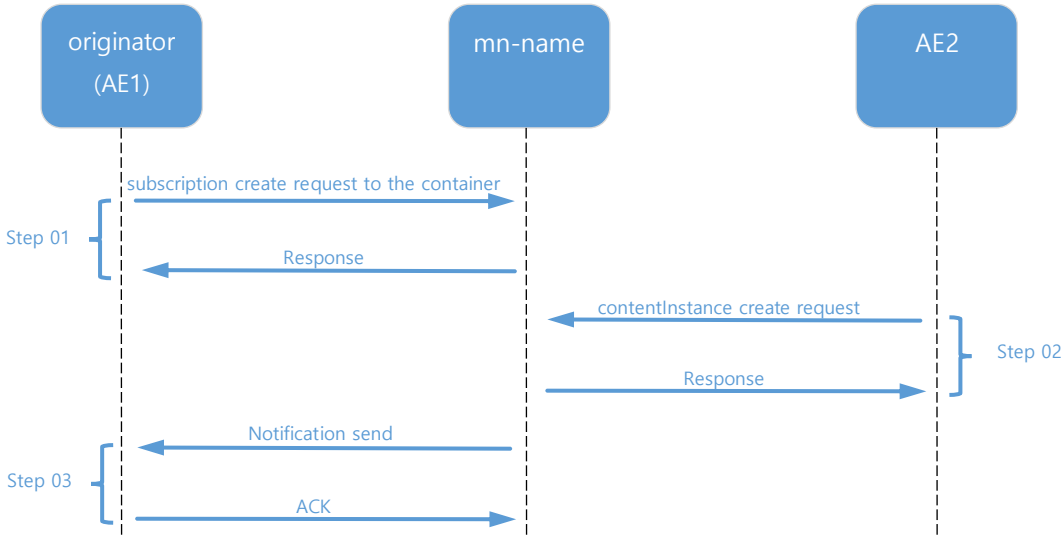
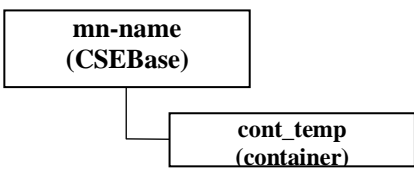
Step 02	Resource Structure before Sending Request											
	Call Flow											
	HTTP Header Information	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e1eef6;"> <th style="text-align: left;">Header</th> <th style="text-align: left;">Value</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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of Originator	Content-Type	application/json;
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json;											
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 X-M2M-RSC: 2004</pre> <pre>{ "m2m:cnt": { "cbs": 10, "cni": 0, "ct": "20180406T125807", "et": "99991231T235959",</pre>											

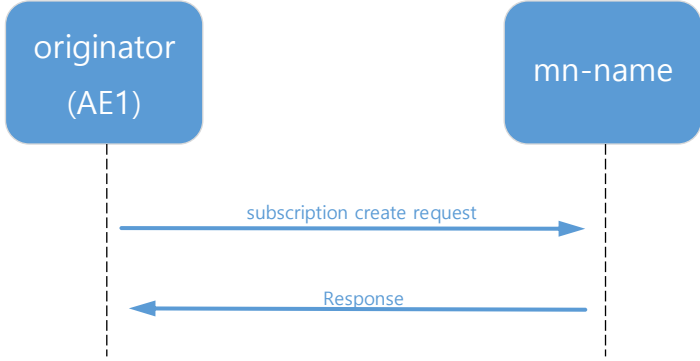
		<pre> "lbl": ["indoor_temp"], "lt": "20180406T130109", "mbs": 60000000, "mia": 1600, "mni": 300, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T1258071405855183193603_cse01", "rn": "cont_temp", "st": 1, "ty": 3 } </pre>										
Step 03	Resource Structure before Sending Request	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> mn-name (CSEBase) </div>										
	Call Flow											
	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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of Originator	Content-Type	application/json;
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json;											
Example	<p>API/NOTI/NET2/STEP03</p> <p>HTTP Request:</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": { </pre>											

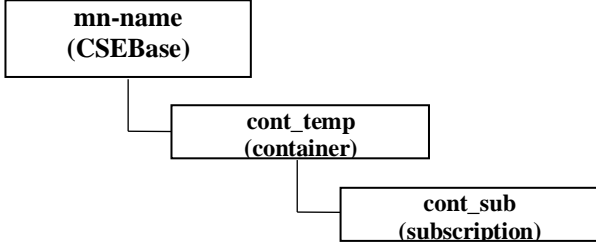
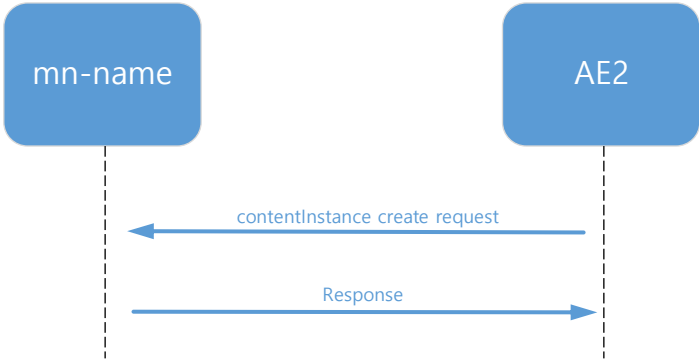


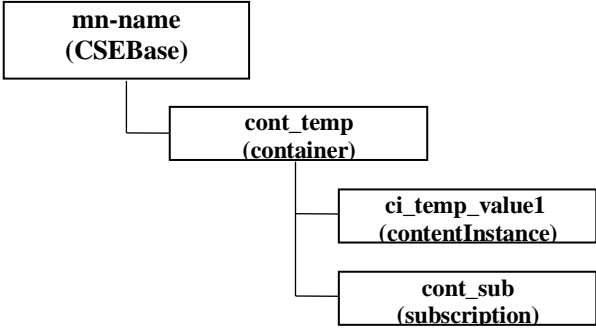
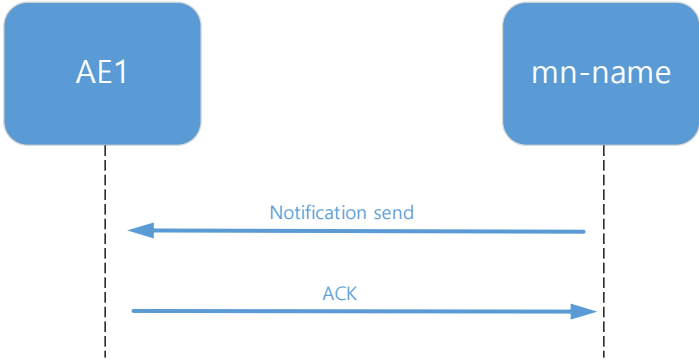
		<pre>"m2m:cnt": { "cbs": 10, "cni": 0, "ct": "20180406T125807", "et": "99991231T235959", "lbl": ["indoor_temp"], "lt": "20180406T130109", "mbs": 60000000, "mia": 1600, "mni": 300, "pi": "CAE0120180406T0846311405855351047680_cse01", "ri": "cnt20180406T1258071405855183193603_cse01", "rn": "cont_temp", "st": 1, "ty": 3 }</pre> <p>HTTP Response:</p> <pre>200 OK X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</pre>
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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>  <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>	
Resource Structure before Sending Request		

Step 01	Call Flow	 <pre> sequenceDiagram participant AE1 as originator (AE1) participant mn_name as mn-name AE1->>mn_name: subscription create request mn_name-->>AE1: 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 Originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json; ty=23</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
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json; ty=23											
Example	<p>API/NOTI/NET3/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": [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>											

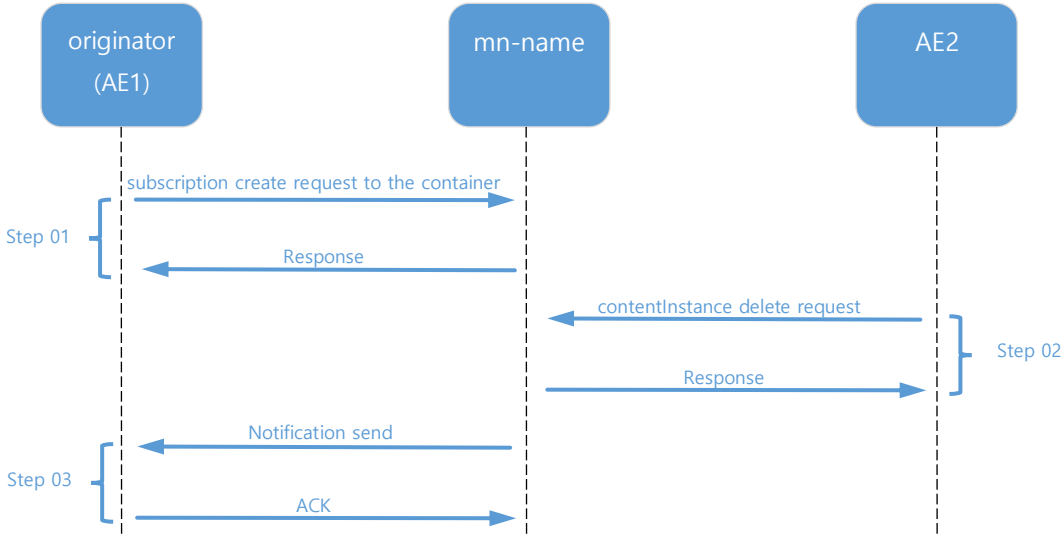
Step 02	Resource Structure before Sending Request											
	Call Flow											
	HTTP Header Information	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e1eef6;"> <th style="text-align: left;">Header</th> <th style="text-align: left;">Value</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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of Originator	Content-Type	application/json;
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json;											
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</pre> <pre>{ "m2m:cin": { "con": "20" } }</pre> <p>HTTP Response:</p> <pre>201 Created Content-Type: application/json X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2004</pre>											

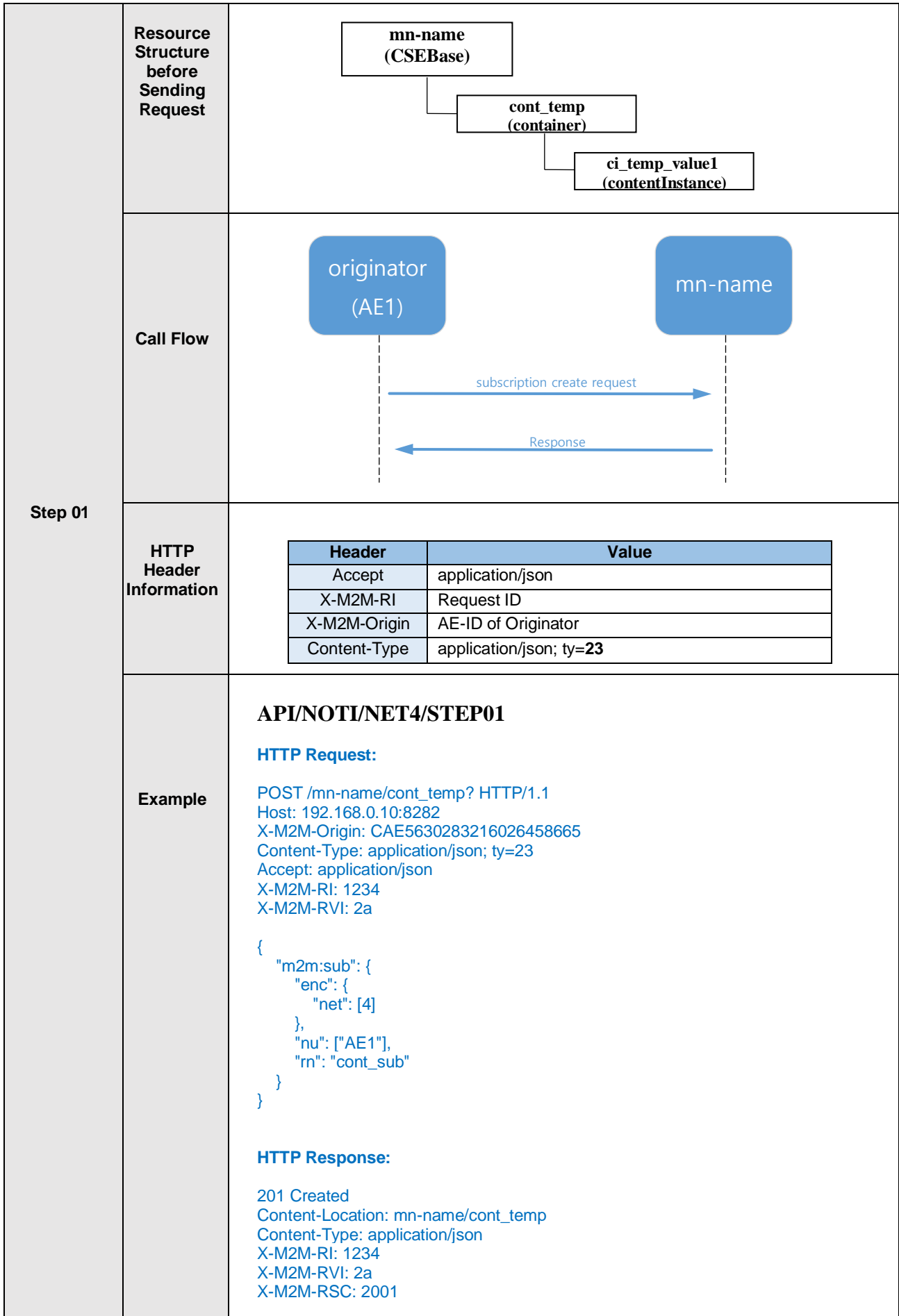
		<pre>{ "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T135509", "et": "99991231T235959", "lt": "20180406T135509", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1355091405855351047683_cse01", "rn": "cin20180406T1355091405855351047682_cse01", "st": 1, "ty": 4 } }</pre>										
Step 03	Resource Structure before Sending Request											
	Call Flow											
	HTTP Header Information	<table border="1" data-bbox="560 1570 1347 1749"> <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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of Originator	Content-Type	application/json;
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json;											
Example	<p>API/NOTI/NET3/STEP03</p> <p>HTTP Request:</p> <p>POST HTTP/1.1 Host: 192.168.0.10:8282 X-M2M-Origin: mn-name Content-Type: application/json</p>											



		<pre>X-M2M-RI: 1234 X-M2M-RVI: 2a { "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> <pre>200 OK X-M2M-RI: 1234 X-M2M-RVI: 2a X-M2M-RSC: 2000</pre>
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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 AE1 as originator (AE1) participant mn_name as mn-name participant AE2 as AE2 AE1->>mn_name: subscription create request to the container mn_name-->>AE1: Response AE2->>mn_name: contentInstance delete request mn_name-->>AE2: Response mn_name->>AE1: Notification send AE1-->>mn_name: ACK </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>



Step 02	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>										
	Call Flow	<pre> sequenceDiagram participant mn_name participant AE2 mn_name->>AE2: contentInstance delete request AE2-->>mn_name: 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 Originator</td> </tr> <tr> <td>Content-Type</td> <td>application/json;</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;
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json;											
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", </pre>											

		<pre> "lt": "20180406T135509", "pi": "cnt20180406T1353041405855518901760_cse01", "ri": "cin20180406T1355091405855351047683_cse01", "rn": "cin20180406T1355091405855351047682_cse01", "st": 1, "ty": 4 } </pre>										
Step 03	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> sequenceDiagram participant AE1 participant mn_name AE1->>mn_name: Notification send mn_name-->>AE1: ACK </pre>										
	HTTP Header Information	<table border="1" data-bbox="560 1216 1347 1391"> <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> </tbody> </table>	Header	Value	Accept	application/json	X-M2M-RI	Request ID	X-M2M-Origin	AE-ID of Originator	Content-Type	application/json;
	Header	Value										
Accept	application/json											
X-M2M-RI	Request ID											
X-M2M-Origin	AE-ID of Originator											
Content-Type	application/json;											
Example	<p>API/NOTI/NET4/STEP03</p> <p>HTTP Request:</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 </pre> <pre> { "m2m:sgn": { "sur": "mn-name/cont_temp/cont_sub", "nev": { "net": 4, "rep": { "m2m:cin": { "con": "20", "cs": 2, "ct": "20180406T135509", </pre>											

		<pre>"et": "99991231T235959", "it": "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>
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Lịch sử thay đổi

Publication history		

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