OCF Resource to Matter Cluster Mapping Specification

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CONTACT admin@openconnectivity.org

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Introduction

This document, and all the other parts associated with this document, were developed in response to worldwide demand for smart home focused Internet of Things (IoT) devices, such as appliances, door locks, security cameras, sensors, and actuators; these to be modelled and securely controlled, locally and remotely, over an IP network.

While some inter-device communication existed, no universal language had been developed for the IoT. Device makers instead had to choose between disparate frameworks, limiting their market share, or developing across multiple ecosystems, increasing their costs. The burden then falls on end users to determine whether the products they want are compatible with the ecosystem they bought into, or find ways to integrate their devices into their network, and try to solve interoperability issues on their own.

In addition to the smart home, IoT deployments in commercial environments are hampered by a lack of security. This issue can be avoided by having a secure IoT communication framework, which this standard solves.

The goal of these documents is then to connect the next 25 billion devices for the IoT, providing secure and reliable device discovery and connectivity across multiple OSs and platforms. There are multiple proposals and forums driving different approaches, but no single solution addresses the majority of key requirements. This document and the associated parts enable industry consolidation around a common, secure, interoperable approach.

The OCF specification suite is made up of nineteen discrete documents, the documents fall into logical groupings as described herein:

- Core framework
  - Core Specification
  - Security Specification
  - Onboarding Tool Specification
- Bridging framework and bridges
  - Bridging Specification
  - OCF Resource to Alljoyn Interface Mapping Specification
  - OCF Resource to oneM2M Resource Mapping Specification
  - OCF Resource to BLE Mapping Specification
  - OCF Resource to EnOcean Mapping Specification
  - OCF Resource to LWM2M Mapping Specification
  - OCF Resource to UPlus Mapping Specification
  - OCF Resource to Zigbee Cluster Mapping Specification
  - OCF Resource to Z-Wave Mapping Specification
- Resource and Device models
  - Resource Type Specification
  - Device Specification
- Core framework extensions
  - Easy Setup Specification

  - Core Optional Specification
- OCF Cloud
  - Cloud API for Cloud Services Specification
  - Device to Cloud Services Specification
  - Cloud Security Specification

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1 Scope

This document specifies a framework for translation between OCF devices and other ecosystems, and specifies the behaviour of a translator that exposes servers in non-OCF ecosystem to OCF clients and/or exposes OCF servers to clients in non-OCF ecosystem. Translation per specific device type is described in section XXX (deep translation). This document provides generic requirements that apply unless overridden by a more specific document.

2 Normative references

Matter Core Specification 1.0
https://csa-iot.org/wp-content/uploads/2022/11/22-27349-001_Matter-1.0-Core-Specification.pdf

Matter Device Library Specification 1.0
https://csa-iot.org/wp-content/uploads/2022/11/22-27351-001_Matter-1.0-Device-Library-Specification.pdf

Matter Application Cluster Specification 1.0
https://csa-iot.org/wp-content/uploads/2022/11/22-27350-001_Matter-1.0-Application-Cluster-Specification.pdf

ISO/IEC 30118-1 Information technology -- Open Connectivity Foundation (OCF) Specification -- Part 1: Core specification
https://www.iso.org/standard/82127.html
Latest version available at: https://openconnectivity.org/specs/OCF_Core_Specification.pdf

ISO/IEC 30118-2 Information technology – Open Connectivity Foundation (OCF) Specification – Part 2: Security specification
https://www.iso.org/standard/82128.html
Latest version available at: https://openconnectivity.org/specs/OCF_Security_Specification.pdf

ISO/IEC 30118-3 Information technology – Open Connectivity Foundation (OCF) Specification – Part 3: Bridging specification
https://www.iso.org/standard/82129.html
Latest version available at: https://openconnectivity.org/specs/OCF_Bridging_Specification.pdf

ISO/IEC 30118-4 Information technology – Open Connectivity Foundation (OCF) Specification – Part 4: Resource Type specification
https://www.iso.org/standard/82130.html
Latest version available at:
https://openconnectivity.org/specs/OCF_Resource_Type_Specification.pdf

ISO/IEC 30118-5 Information technology – Open Connectivity Foundation (OCF) Specification – Part 5: Device specification
https://www.iso.org/standard/82131.html
Latest version available at: https://openconnectivity.org/specs/OCF_Device_Specification.pdf

Derived Models for Interoperability between IoT Ecosystems, Stevens & Merriam, March 2016
https://www.iab.org/wp-content/IAB-uploads/2016/03/OCF-Derived-Models-for-Interoperability-Between-IoT-Ecosystems_v2-examples.pdf

IETF RFC 4122, *A Universally Unique IDentifier (UUID) URN Namespace*, July 2005
https://www.rfc-editor.org/info/rfc4122

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 30118-2 Information technology – Open Connectivity Foundation (OCF) Specification – Part 2: Security specification , and ISO/IEC 30118-3 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

– ISO Online browsing platform: available at https://www.iso.org/obp
– IEC Electropedia: available at http://www.electropedia.org/

3.1.1 Attribute

A data entity which represents a physical quantity or state. This data is communicated to other Nodes using commands. (a term of Matter)

3.1.2 Bridged Protocol

Other protocol (e.g., Matter) that is being translated to or from OCF protocols

3.1.3 Client

A Cluster interface that typically sends commands that manipulate the attributes on the corresponding server cluster. A client cluster communicates with a corresponding remote server cluster with the same cluster identifier. (a term of Matter)

(OCF and Matter defines "Client" but its meaning is different. If "Client" is used in the context of Matter, it follows this definition)

3.1.4 Cluster

A specification defining one or more attributes, commands, behaviors and dependencies, that supports an independent utility or application function. The term may also be used for an implementation or instance of such a specification on an endpoint. (a term of Matter)

3.1.5 Command

Requests for action on a value with an expected response which may have parameters and a response with a status and parameters. (a term of Matter)

3.1.6 Device Type

In this architecture model, a device type is the highest semantic element. A device type defines conformance for a set of one or more endpoints. A device type defines a set of requirements for the node or endpoint in the market. (a term of Matter)

(OCF and Matter defines "Device Type" but its meaning is different. If "Device Type" is used in the context of Matter, it follows this definition)

3.1.7 Extended Translation

Extended Translation means translation that considers not only Core Resources but also Resources specific to each Device Type.

3.1.8 Endpoint

A Particular component within a Node that is individually addressable. (a term of Matter)

(OCF and Matter defines "Endpoint" but its meaning is different. If "Endpoint" is used in the context of Matter, it follows this definition)

3.1.9 Fabric

A logical collection of communicating Nodes, sharing a common root of trust, and a common distributed configuration state. (a term of Matter)

3.1.10 Node

An addressable entity which supports the Matter protocol stack and (once Commissioned) has its own Operational Node ID and Node Operational credentials. A Device MAY host multiple Nodes. (a term of Matter)

3.1.11 Server

A Cluster interface that typically supports all or most of the attributes of the Cluster. A Server Cluster communicates with a corresponding remote Client Cluster with the same Cluster identifier. (a term of Matter)

(OCF and Matter defines "Server" but its meaning is different. If "Server" is used in the context of Matter, it follows this definition)

3.1.12 Symmetric, Asymmetric Bridging

In symmetric bridging a bridge device not only exposes OCF server to other ecosystem but also exposes other ecosystem's server to OCF, on the other hand, in asymmetric bridging a bridge device exposes OCF server to other ecosystems only or exposes other ecosystems' server to OCF only.

3.2 Symbols and abbreviations

CBOR	Concise Binary Object Representation
CoAP	Constrained Application Protocol
CoAPs	Secure Constrained Application Protocol
DTLS	Datagram Transport Layer Security
IP	Internet Protocol
TLV	Tag Length Value
VOD	Virtual OCF Device

4 Matter Translation

4.1 Operational Scenarios

The overall goal of this document is to represent Bridged Matter Servers to OCF Clients as if they were native OCF Servers in the local network or cloud environment.

"Deep translation" between specific Matter Device Type and OCF Device Type is specified in section XXX. Figure 1 shows overview of Matter Bridge device and its general topology. The Matter Translator supports Asymmetric Bridging. It exposes Server Clusters of a Matter Device Type to the OCF Clients. As a result, each Bridged Matter Device Type is represented as a Virtual OCF Server.

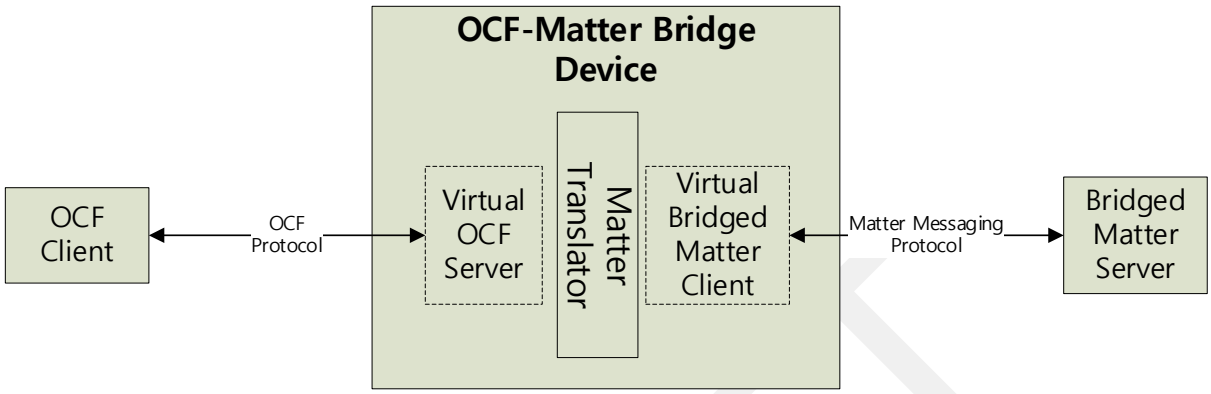

Figure 1 OCF-Matter Bridge Device Components

4.1.1 Use case for Matter Bridging

Figure 2 shows a use case for OCF Clients and Matter Servers. An OCF Client on a smartphone reads a Matter Light bulb Device Type through an OCF-Matter Bridge. Any connectivity that OCF supports is used for communications between the OCF Clients and the OCF-Matter Bridge. The OCF Clients may communicate with the OCF-Matter Bridge through OCF Cloud.

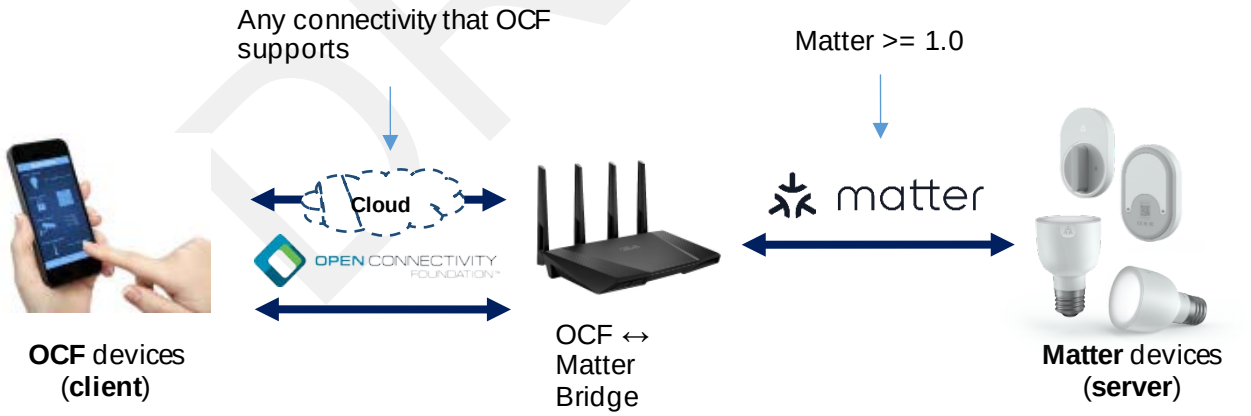

Figure 2 Matter Bridging use case in real life

4.2 Requirements for Matter Translator

4.2.1 Introduction

OCF-Matter Bridge device shall satisfy section 5.2 General Requirements of OCF Bridging Specification.

A Matter translator supports Asymmetric Bridging. It exposes Server Clusters of Matter Device Types to OCF Clients only. Therefore, it shall implement Matter Client Clusters and OCF Server. (This requirement ensures that users can expect a certified OCF Bridge device to communicate with any Server Clusters of Matter Device Types, without the need to purchase any additional Matter devices).

4.2.2 Requirements for Matter side

The version of Matter main specification that this document refers to is 1.0 or higher.

4.2.3 Data model mapping between Matter and OCF

In matter, Matter devices organize a logical group called Fabric. A Fabric means a logical collection of communicating Nodes, sharing a common root of trust, and a common distributed configuration state. As a result, a Matter Node can join multiple Fabrics, and may have multiple Node IDs for each Fabric. In contrast, the OCF does not have an equivalent concept for Fabric. Therefore, Fabric ID and Node ID are not the targets to be translated into OCF ecosystem.

Basic translation rule between Matter Cluster model and OCF Resource model is described in Table 1. A Matter Device Type shall be mapped to an OCF Device Type (e.g. an ON/OFF Light (Matter Device ID: 0x0100) is mapped to a OCF Light (OCF Device Type: "oic.d.light")). Each Matter Device Type specifies mandatory Clusters required for the Device Type. Therefore, mandatory Clusters should be mapped to OCF mandatory Resources required for the corresponding OCF Device Type. The attributes of a Cluster shall be mapped to the Properties of an OCF Resource. Lastly, Matter subscription shall be mapped to OCF Observe Notification. Table 2 provides a translation example of this rule.

Table 1 Translation rule between Matter and OCF data model

From Matter	mapping count	To OCF	mapping count
Device Type	**1**	OCF Device	**1**
Cluster	**n**	OCF Resource	**n**
Attribute	**1**	OCF Resource property	**1**
Subscription	**1**	OCF Notification on/off option	**1**

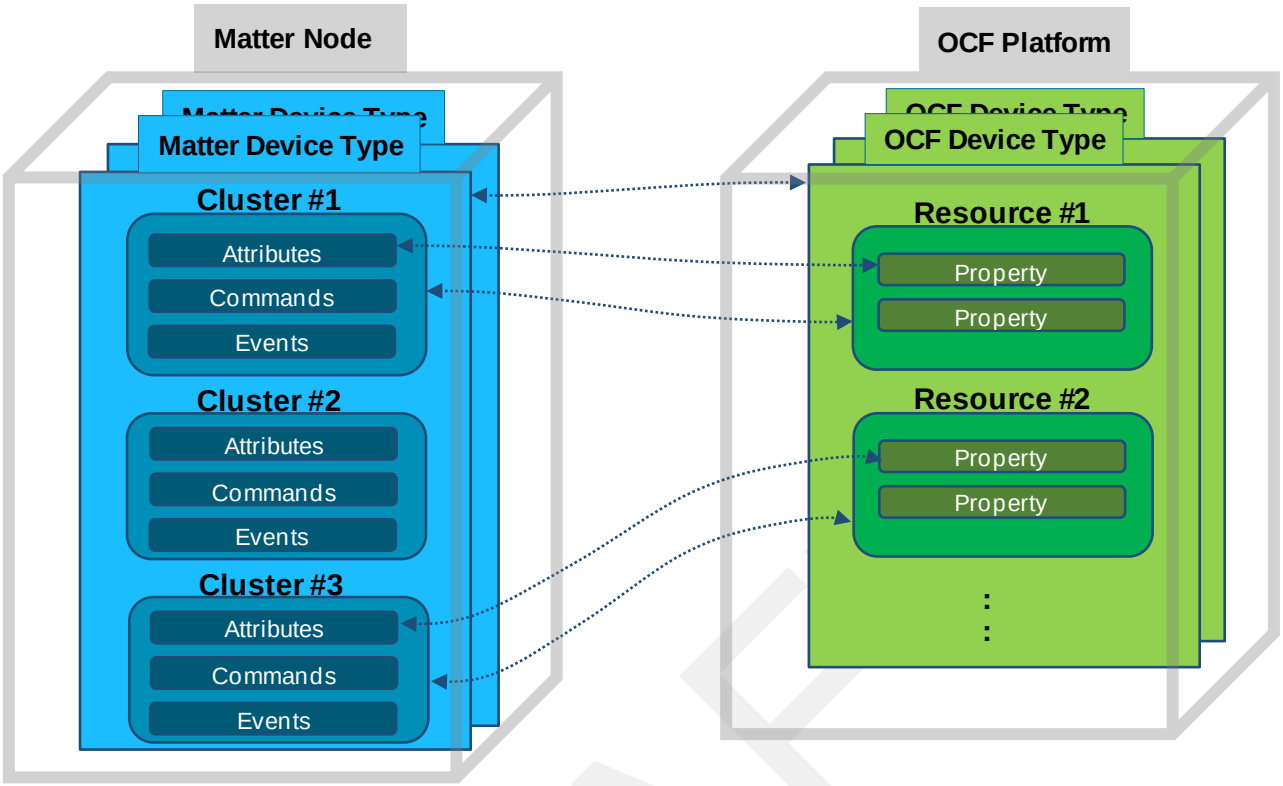

Table 2 Matter → OCF translation example (On/Off Light device)

	Matter	OCF
Matter Device Type → OCF Device	On/Off Light (Device Type ID: 0x0100)	Light (rt: oic.d.light)
Matter Cluster → OCF Resource	On/Off Cluster (Cluster ID: 0x0006)	Binary Switch Resource (rt: oic.r.switch.binary)
	Basic Information Cluster (Cluster ID: 0x0028) Descriptor Cluster (Cluster ID: 0x001D)	Device (rt: oic.wk.d) Platform (rt: oic.wk.p)
Matter Attribute → OCF Resource Property	OnOff (On/Off Cluster)	value (rt: oic.r.switch.binary)

4.2.3.1 Well-defined set of Matter translation

If a Matter Device Type is in a well-defined set (defined in section XX), translation shall be done as follows. Table 3 is the list of Matter Device Type which have corresponding OCF Resources as of now.

Table 3 Matter Cluster – OCF Resource mapping

Matter Device Type	Matter Cluster	OCF Resource Type	OCF Device Type

On/Off Light (Device Type ID: 0x0100)	On/Off Cluster (Cluster ID: 0x0006)	Binary Switch Resource (rt: oic.r.switch.binary)	Light (rt: oic.d.light)
	Basic Information Cluster (Cluster ID: 0x0028) Descriptor Cluster (Cluster ID: 0x001D)	OCF Device (rt: oic.wk.d)	
		OCF Platform (rt: oic.wk.p)	
On/Off Plug-in Unit (Device Type ID: 0x010A)	On/Off Cluster (Cluster ID: 0x0006)	Binary Switch Resource (rt: oic.r.switch.binary)	Smart Plug (rt: oic.d.smartplug)
	Basic Information Cluster (Cluster ID: 0x0028) Descriptor Cluster (Cluster ID: 0x001D)	OCF Device (rt: oic.wk.d)	
		OCF Platform (rt: oic.wk.p)	
Dimmable Light (Device Type ID: 0x0101)	On/Off Cluster (Cluster ID: 0x0006)	Binary Switch Resource (rt: oic.r.switch.binary)	Smart Light (rt: oic.d.light.smart, oic.d.light)
	Level Control Cluster (Cluster ID: 0x0008)	Dimming Resource (rt: oic.r.light.dimming)	
	Basic Information Cluster (Cluster ID: 0x0028) Descriptor Cluster (Cluster ID: 0x001D)	OCF Device (rt: oic.wk.d)	
		OCF Platform (rt: oic.wk.p)	
Thermostat (Device Type ID: 0x0301)	Thermostat (Cluster ID: 0x0201)	Temperature (rt: oic.r.temperature)	Thermostat (rt: oic.d.thermostat)
	Basic Information Cluster (Cluster ID: 0x0028) Descriptor Cluster (Cluster ID: 0x001D)	OCF Device (rt: oic.wk.d)	
		OCF Platform (rt: oic.wk.p)	
Fan (Device Type ID: 0x002B)	Fan Control (Cluster ID: 0x0202)	Binary Switch Resource (rt: oic.r.switch.binary)	Fan (rt:oic.d.fan)
	Basic Information Cluster (Cluster ID: 0x0028) Descriptor Cluster (Cluster ID: 0x001D)	OCF Device (rt: oic.wk.d)	
		OCF Platform (rt: oic.wk.p)	

4.2.3.2 Exposing a Matter Server as a Virtual OCF Server

4.2.3.2.1 Common Properties of OCF Resource Type

- Resource Type (“rt” Property, Mandatory): value of “rt” in corresponding OCF Resource specified in ISO/IEC 30118-4.
- Interface (“if” Property, Mandatory): value of “if” in corresponding OCF Resource specified in ISO/IEC 30118-4.

4.2.3.2.2 Device Resource (“rt” == "oic.wk.d")

Table 4 shows how the Properties of OCF Device Resource, as specified in Table 25 of OCF Core specification, shall be derived typically from fields specified in Basic Information Cluster (Cluster ID: 0x0028) and Descriptor Cluster (Cluster ID: 0x001D).

Table 4: Device Resource type ("oic.wk.d") mapping

To OCF Property title	OCF Property name	OCF Description	OCF Mandatory?	From Matter Cluster	Matter Description	Matter Mandatory ?
(Device) Name	n	Human friendly name For example, “Bob’s Thermostat”	Y	Device Type string corresponding to each of **DeviceTypeList** attribute (Descriptor Cluster) + "of" + **NodeLabel** attribute (Basic Information Cluster) If DeviceTypeList includes multiple values, they shall be separated by ','. For example, "On/Off Light of Bob's LivingRoom Light"	**DeviceTypeList** attribute is a list of device types and corresponding revisions declaring endpoint conformance. **NodeLabel** attribute represents a user defined name for the Node.	Y
Spec Version	icv	Spec version of the core specification this device is implemented to, The syntax is "core.major.minor”]	Y	Translator shall return its own value	-	-
Device ID	di	Unique identifier for Device. This value shall be as defined in [ISO/IEC 30118-2] for DeviceID.	Y	Use its VOD's value as defined in the OCF Security Specification	-	-
Protocol-Independent ID	piid	Unique identifier for OCF Device (UUID) . Randomly-generated UUID described in IETF RFC 4122 section 4.4 should be used for piid	Y	Use its own value	-	-
Data Model Version	dmv	Spec version of the Resource specification to which this Device data model is implemented	Y	Use its own value	-	-
Localized Descriptio	ld	Detailed description of the Device, in one or	N	-	-	-

ns		more languages. This property is an array of objects where each object has a 'language' field (containing an RFC 5646 language tag) and a 'value' field containing the device description in the indicated language.				
Software Version	sv	Version of the device software.	N	**SoftwareVersionString** attribute (Basic Information Cluster)	**SoftwareVersionString** attribute contains a current human-readable representation for the software running on the Node	Y
Manufacturer Name	dmn	Name of manufacturer of the Device, in one or more languages. This property is an array of objects where each object has a 'language' field (containing an RFC 5646 language tag) and a 'value' field containing the manufacturer name in the indicated language.	N	**VendorName** attribute (Basic Information Cluster)	**VendorName** attribute specifies a human readable (displayable) name of the vendor for the Node.	Y
Model Number	dmno	Model number as designated by manufacturer.	N	**ProductName** attribute (Basic Information Cluster)	**ProductName** attribute specifies a human readable (displayable) name of the model for the Node such as the model number (or other identifier) assigned by the vendor.	Y

- Spec Version ("icv", Mandatory): Spec version of the core specification that the translator implements shall be used.
- Device ID ("di", Mandatory): "di" value of VOD shall be used. The value of the "di" Property of OCF Devices shall be established during Onboarding procedure of that Virtual OCF Device, as specified in the OCF Security Specification.
- Data Model Version ("dmv", Mandatory): version of data model specification that this Bridge device implements shall be used.

- Protocol Independent ID (“piid”, Mandatory): randomly-generated UUID described in IETF RFC 4122 section 4.4 shall be used for piid.

4.2.3.2.3 Device Configuration Resource ("rt" == "oic.wk.con")

The Attributes of Matter Clusters (Descriptor Cluster, Basic Information Cluster) corresponding to the OCF Device configuration Resource (oic.wk.con) are read only, therefore OCF Device configuration Resource (oic.wk.con) shall not be created.

4.2.3.2.4 Platform Resource (“rt” == "oic.wk.p")

Table 5 shows how Platform Properties, as specified in Table 26 in ISO/IEC 30118-1, are derived. Most of them are derived from the attributes of Basic Information Cluster.

Table 5: Platform Resource type (oic.wk.p) mapping

To OCF Property title	OCF Property name	OCF Description	OCF Mandatory?	From Matter Cluster	Matter Description	Matter Mandatory?
Platform ID	pi	Unique identifier for the physical platform (UIUID); this shall be a UUID in accordance with IETF RFC 4122. It is recommended that the UUID be created using the random generation scheme (version 4 UUID) specific in the RFC.	Y	**Vendor ID** + **Product ID** attribute (Basic Information Cluster)	**Vendor ID** attribute is number that uniquely identifies a particular product manufacturer. **Product ID** attribute is assigned by the vendor that is unique to the specific product of the Node.	Y
Manufacturer Name	mnmn	Name of manufacturer (not to exceed 16 characters)	Y	**VendorName** attribute (Basic Information Cluster)	**VendorName** attribute specifies a human readable (displayable) name of the vendor for the Node.	Y
Manufacturer Details Link (URL)	mnml	URL to manufacturer (not to exceed 32 characters)	N	**ProductURL** attribute (Basic Information Cluster)	**ProductURL** attribute specifies a link to a product specific web page.	N
Model Number	mnmo	Model number as designated by manufacturer	N	**ProductName** attribute (Basic Information Cluster)	**ProductName** attribute specifies a human readable (displayable) name of the model for the Node such as the model number (or other identifier) assigned by the vendor.	Y
Date of	mndt	Manufacturing	N	**ManufacturingData** attribute (Basic	**ManufacturingDate** attribute specifies the	N

Manufacture		date of device		Information Cluster)	date that the Node was manufactured	
Platform Version	mnpv	Version of platform – string (defined by manufacturer)	N	(none)	(none)	-
OS Version	mnos	Version of platform resident OS – string (defined by manufacturer)	N	(none)	(none)	-
Hardware Version	mnhw	Version of platform hardware	N	**HardwareVersion Sring** attribute (Basic Information Cluster)	**HardwareVersionStrin g** attribute specifies the version number of the hardware of the Node.	Y
Firmware version	mnfv	Version of device firmware	N	**SoftwareVersion Sring** attribute (Basic Information Cluster)	**SoftwareVersionString** attribute contains a current human-readable representation for the software running on the Node.	Y
Support URL	mnsl	URL that points to support information from manufacturer	N	**ProductURL** attribute (Basic Information Cluster)	**ProductURL** attribute specifies a link to a product specific web page.	N
SystemTime	st	Reference time for the device	N	**LocalTime** attribute (Time Synchronization Cluster)	**LocalTime** attribute gives the computed current local time of the server as a epoch-us (CHIP Epoch Time in Microseconds).	N
Vendor ID	vid	Vendor defined string for the platform. The string is freeform and up to the vendor on what text to populate it.	N	**VendorName** attribute (Basic Information Cluster)	**VendorName** attribute specifies a human readable (displayable) name of the vendor for the Node.	Y

- Platform ID (“pi” Property, Mandatory): ProductID attribute composed with VendorID attribute shall be used as the lower 32 bits of Platform ID of the corresponding Platform. Upper 96 bits of the Platform ID shall be filled with 0.

4.2.3.2.5 Platform Configuration Resource ("rt" == "oic.wk.con.p")

The attributes of Matter Clusters (Descriptor Cluster, Basic Information Cluster) corresponding to the OCF Platform configuration Resource (oic.wk.con.p) are read only, therefore OCF Platform configuration Resource (oic.wk.con.p) shall not be created.

4.2.3.2.6 Diagnostics and maintenance Resource ("rt" == "oic.wk.mnt")

There is no specific Matter Cluster for OCF Diagnostics and maintenance Resource (related to factory reset, reboot, etc.), so mapping for OCF Diagnostics and maintenance Resource is omitted. But a manufacturer may create this Resource by using vendor-specific way supported by specific Matter device.

4.2.3.3 On-the-fly Translation

If a Matter Device Type is not in Table 3 (not belong to a well-defined set), a Matter Translator shall not translate it (on-the-fly translation is not supported).

4.2.4 Protocol translation between Matter and OCF

Matter provides "interaction model layer" which defines interactions among Nodes. An interaction is a sequence of one or more transactions between Nodes and a transaction is a sequence of actions. [section 8 of Matter Application Cluster Specification 1.0]

Matter also defines its own "message layer" to carry actions and their data from/to above interaction model layer. The message exchange (sub) layer multiplexes multiple concurrent transactions over a Message session layer. Each of actions comprising a transaction is encoded/decoded in Matter TLV (Tag Length Value) format in message encode/decode (sub) layer.

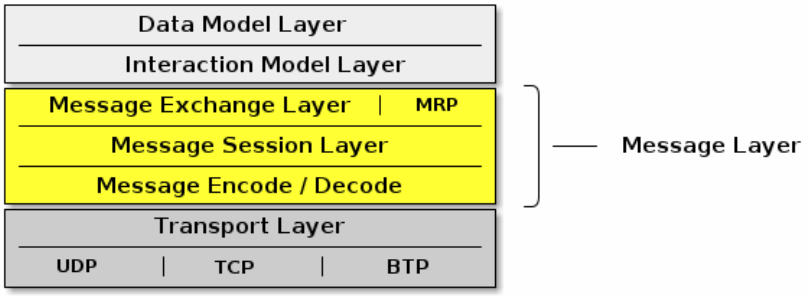

Figure 3 Matter Message Layer Stack [Matter Core Specification 1.0]

Table 6 shows translation rules between Matter interaction model and OCF CRUDN. When a Matter Translator receives a CREATE/DELETE request from an OCF client, it shall return corresponding error (4.xx or 5.xx) because there is no corresponding Matter interaction for them. If a Matter Translator receives a RETRIEVE/UPDATE request from an OCF client, it shall translate it into a Read/Write interaction respectively and it may invoke additional commands of corresponding Cluster if necessary. A NOTIFY request from an OCF client shall be translated into a subscribe transaction and following report transactions from the Matter server shall be translated into NOTIFICATION responses.

Table 6 Protocol translation rule between Matter and OCF

Matter Interaction Model	OCF CRUDN
-	CREATE
Read Interaction [and/or Invoke Interaction]	RETRIEVE
Write Interaction [and/or Invoke Interaction]	UPDATE
-	DELETE

Subscribe Interaction	NOTIFY

4.2.4.1 Initialization

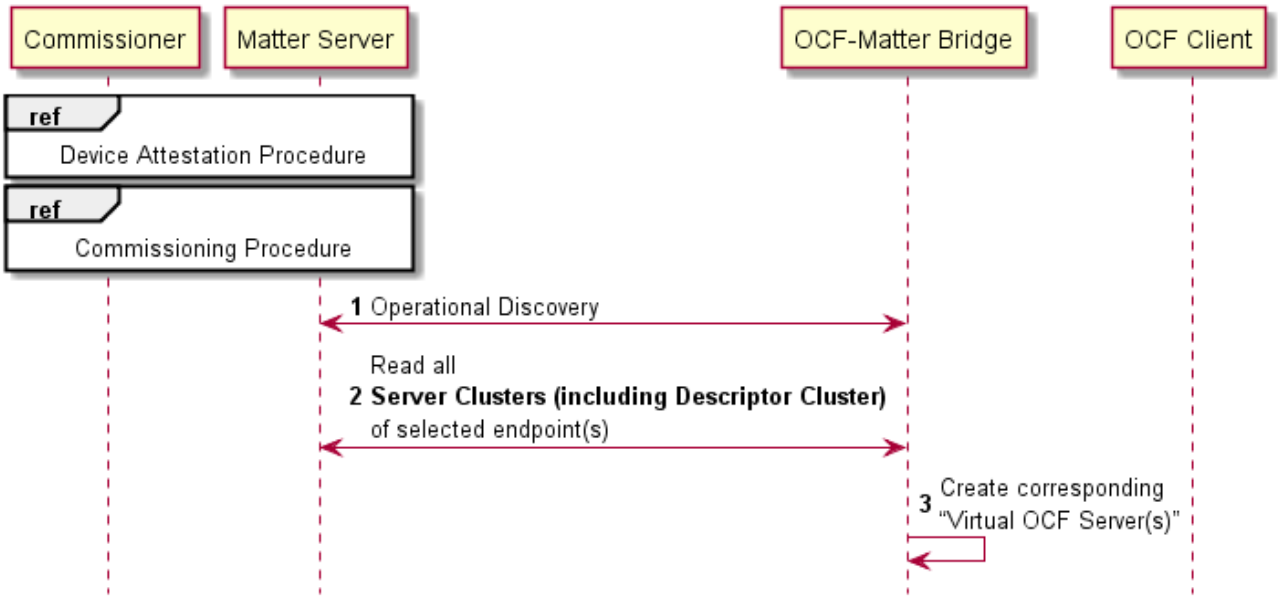

Figure 4 Initialization

Step 1. The Matter Bridge does operational discovery to discover already commissioned Matter Nodes

Step 2. Let admin of Matter Bridge select target Matter device(s) to be bridged, then The Matter Bridge reads all Server Clusters of selected target Matter device on selected endpoint(s)

Step 3. The Matter Bridge creates new VOD corresponding to the target Matter device(s)

4.2.4.2 Resource Discovery

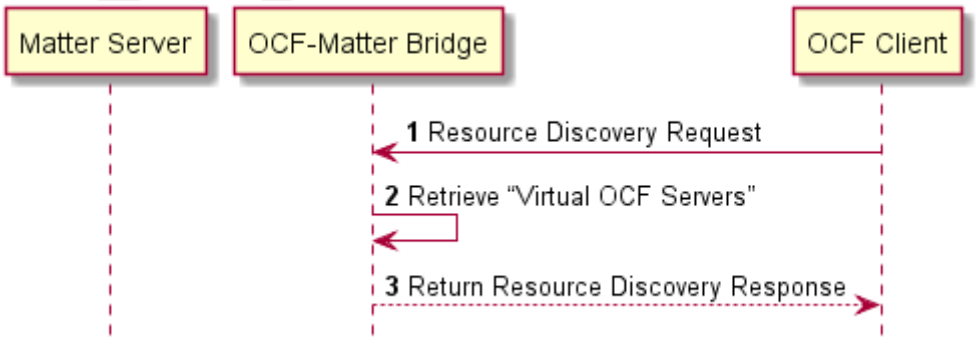

Figure 5 Resource Discovery

4.2.4.3 Create Resource

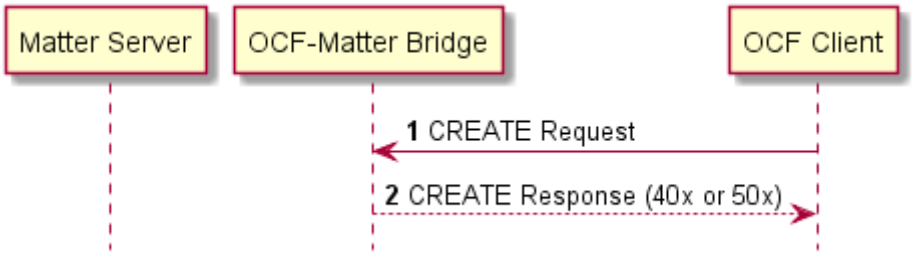

Figure 6 Create Resource

4.2.4.4 Retrieve Resource

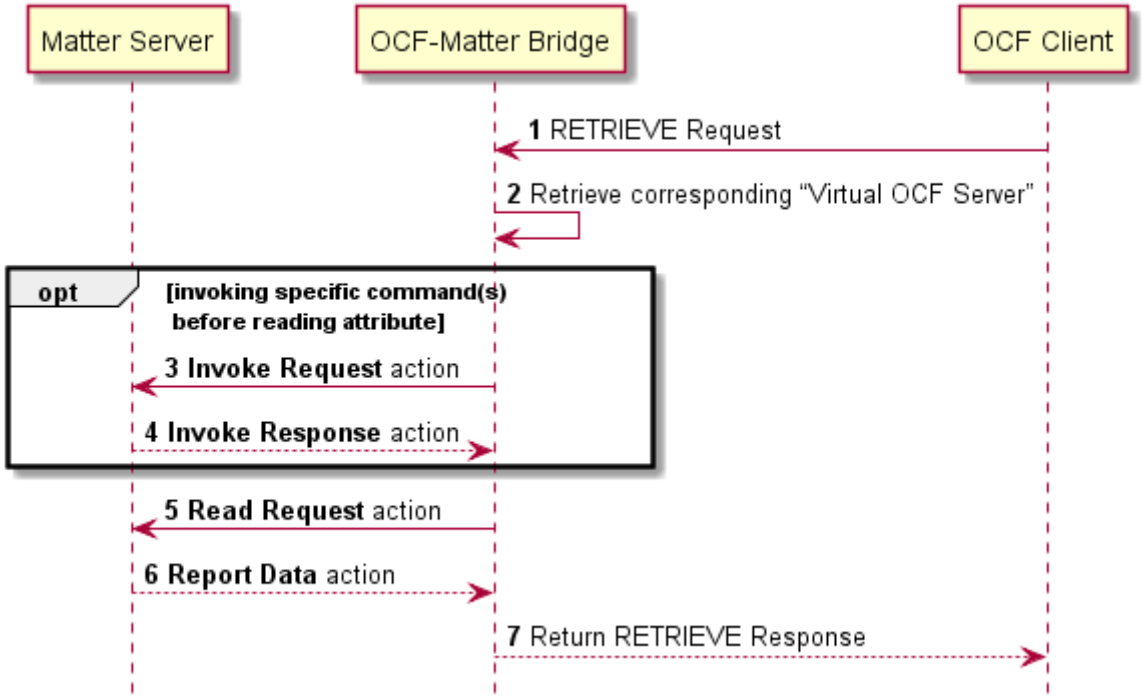

Figure 7 Retrieve Resource

Step 3. If invoking specific command of corresponding cluster is necessary to get valid attribute value, the Matter Bridge triggers invoke transaction for the specific command.

Step 4. ~ Step 5. If the invoke request action is successful, the Matter Bridge triggers read transaction.

4.2.4.5 Update Resource

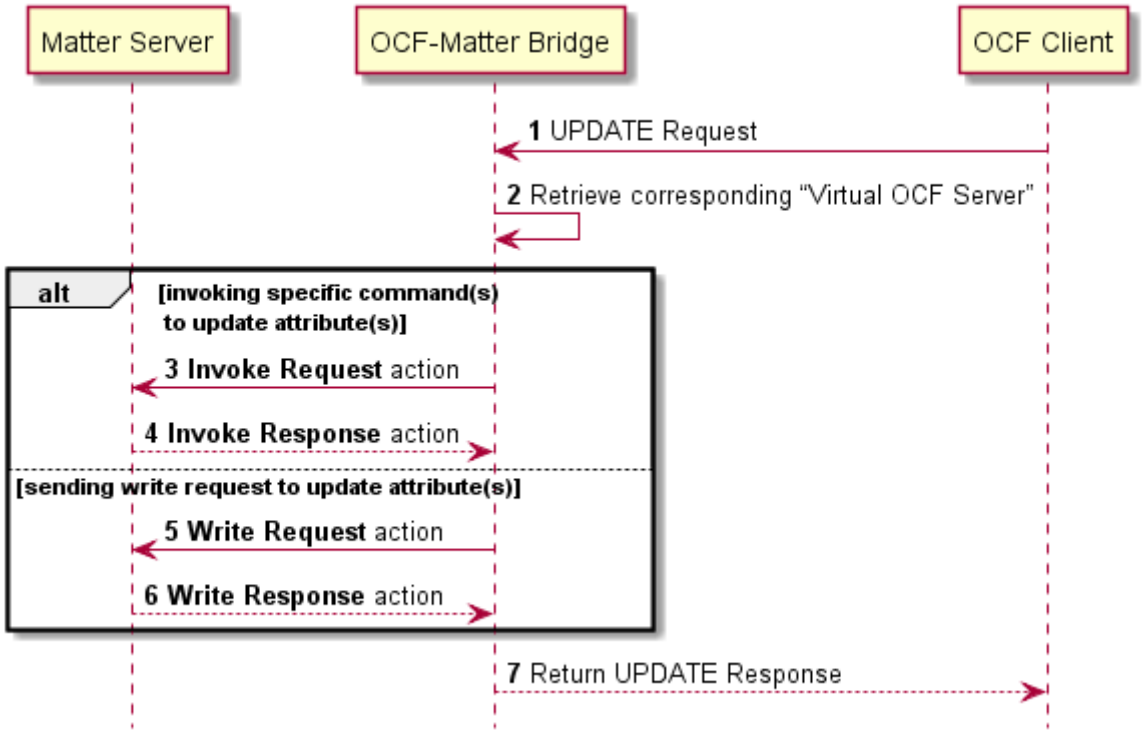

Figure 8 Update Resource

Step 3. ~ Step 4. If invoking specific command of corresponding cluster is necessary to update specific attribute value, the Matter Bridge triggers invoke transaction for the specific command.

Step 5. ~ Step 6. If the target attribute(s) is writable, the Matter Bridge triggers write transaction.

4.2.4.6 Delete Resource

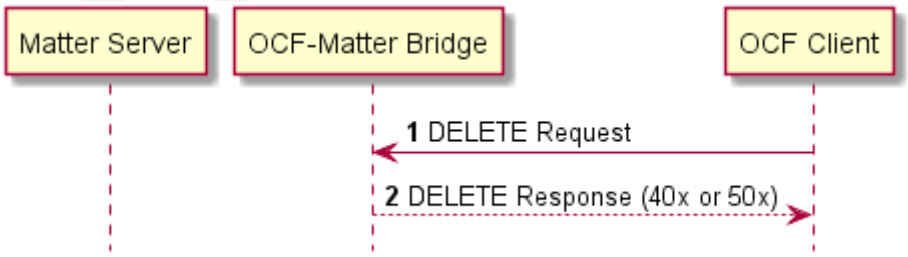

Figure 9 Delete Resource

4.2.4.7 Set Notification & Send Notification

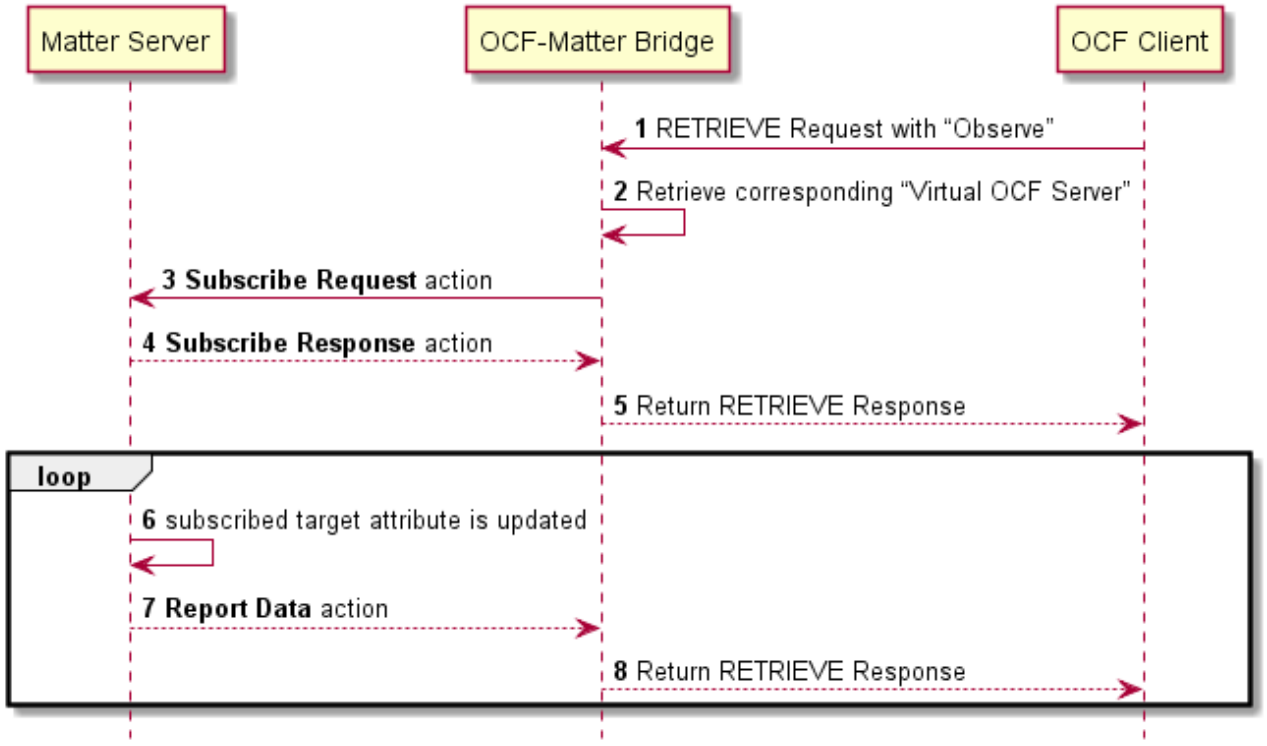

Figure 10 Set Notification & Send Notification

4.2.4.8 Error handling

If a corresponding Matter Interaction fails, the translator shall send an appropriate OCF error response to the OCF Client. it constructs an appropriate OCF error message (e.g., diagnostic payload if using CoAP) from the Matter error event name and error code (if any), using the form "<error name>: <error message>", with the <error name> taken from the event name of corresponding Cluster and the <error message> configured properly by Bridge device manufacturer, and the error code for the OCF network set to an appropriate value.

5 Device Type Mapping

5.1 Mappings between Matter Device Types and OCF Device Types

Table 7 captures the equivalence mappings between Matter Device Types and OCF Device Types. The minimum required set of Resources for each OCF Device is provided in ISO/IEC 30118-5 and minimum required set of Clusters for each Matter device type is provided in Matter Device Library Specification 1.0.

Table 7 – Matter device type to OCF Device Type Mapping

Matter device type	OCF Device Type
On/Off Light (Device Type ID: 0x0100)	Smart Light (rt: oic.d.light.smart, oic.d.light)
On/Off Plug-in Unit (Device Type ID: 0x010A)	Smart Plug (rt: oic.d.smartplug)

Dimmable Light (Device Type ID: 0x0101)	Smart Light (rt: oic.d.light.smart, oic.d.light)
Thermostat (Device Type ID: 0x0301)	Thermostat (rt: oic.d.thermostat)
Fan (Device Type ID: 0x002B)	Fan (rt:oic.d.fan)

6 Data Model Mapping

6.1 Mappings between Matter Clusters and OCF Resources

Table 8 captures the equivalence mappings between Matter Clusters and OCF Resource Types (see ISO/IEC 30118-4, Matter Application Cluster Specification 1.0). Detailed mappings between attributes of Matter Cluster and Properties of OCF Resource are provided in clause XXX.

Table 8 – Matter Clusters to OCF Resource Mapping

Matter Cluster	OCF Resource Type
On/Off Cluster (Cluster ID: 0x0006)	Binary Switch Resource (rt: oic.r.switch.binary)
Level Control Cluster (Cluster ID: 0x0008)	Dimming Resource (rt: oic.r.light.dimming)
Thermostat (Cluster ID: 0x0201)	Temperature (rt: oic.r.temperature)
Fan Control (Cluster ID: 0x0202)	Binary Switch Resource (rt: oic.r.switch.binary)
Basic Information Cluster (Cluster ID: 0x0028) Descriptor Cluster (Cluster ID: 0x001D)	OCF Device (rt: oic.wk.d)
	OCF Platform (rt: oic.wk.p)