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**OTGC**

# **Onboarding Tool and Generic Client Hands-on Training of OTGC**

OCF EU Developer Training 2019

DEKRA Testing and Certification, S.A.U.

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# Terms and Definitions (I)

- **Onboarding Tool (OBT)**

A logical entity within a specific IoT network that establishes ownership for a specific device and helps bring the device into operational state within that network. A typical OBT implements DOTS (Device Owner Transfer Service), AMS (Access Management Service) and CMS (Credential Management Service) functionality.

- **Onboarding Tool and Generic Client (OTGC)**

A logical entity that implements the functions of an OBT and a Generic Client.

- **Onboarding**

Process that consists in owning an OCF device by the OTGC.

- **Offboarding**

Process that consists in releasing an OCF device owed by the OTGC.



# Terms and Definitions (II)

- **OCF Server**

A sensor or actuator capable to generate a measurement or perform an action.

- **OCF Client**

A device capable to scan and control OCF Servers.

- **OCF Device**

A device (Server or Client) that can be integrated into an OCF network created by the OTGC. The OTGC will transfer ownership to this OCF Device by different OTM (Onboarding Transfer Methods).



# Architecture

OTGC main code (C / C++)

OS  
dependent  
code  
(Android)

OS  
dependent  
code  
(iOS)

OS  
dependent  
code  
(Windows)

OS  
dependent  
code  
(Linux)



# OTGC Resources

**OTGC binaries** available publicly at OCF GitHub Developers Area:

<https://github.com/openconnectivityfoundation/development-support/tree/master/otgc>

Current version v1.2.0 available for Android  
Current version v1.3.0 available for Linux OS.

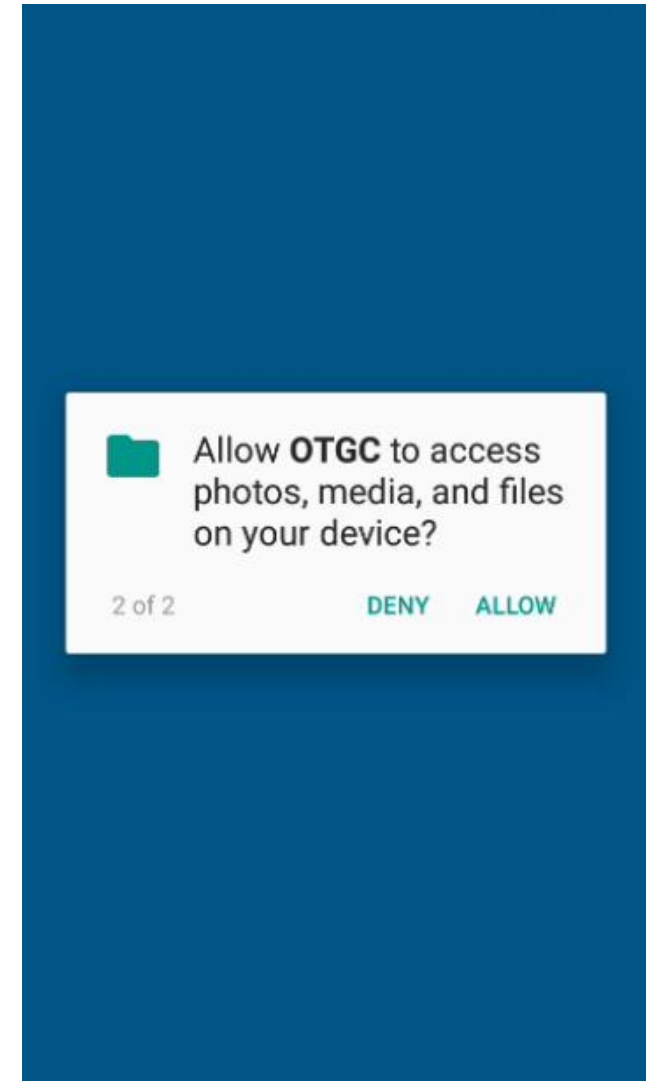
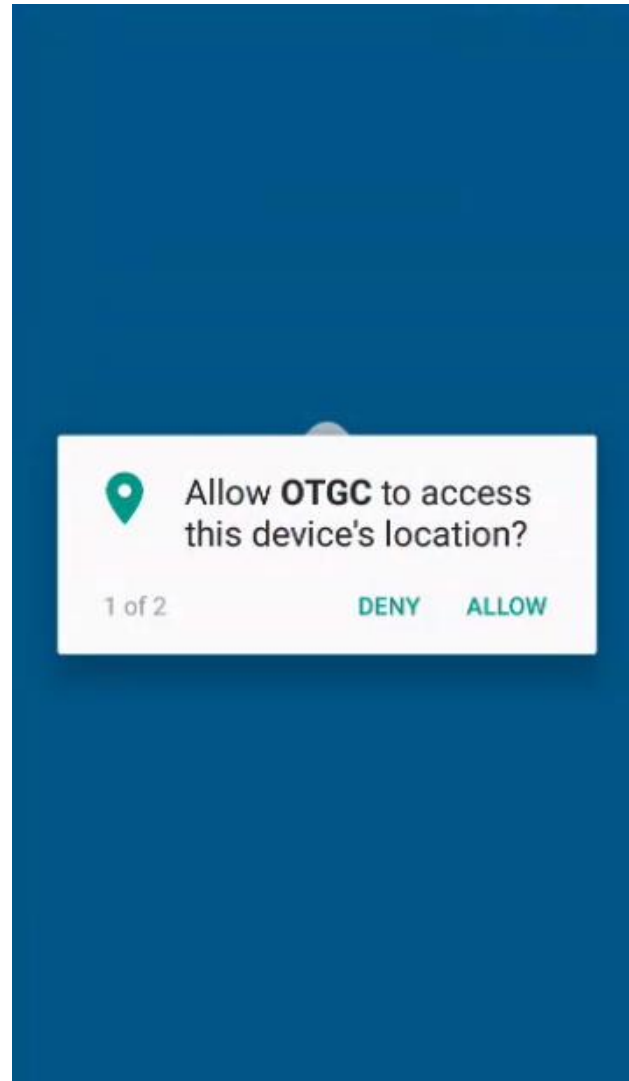
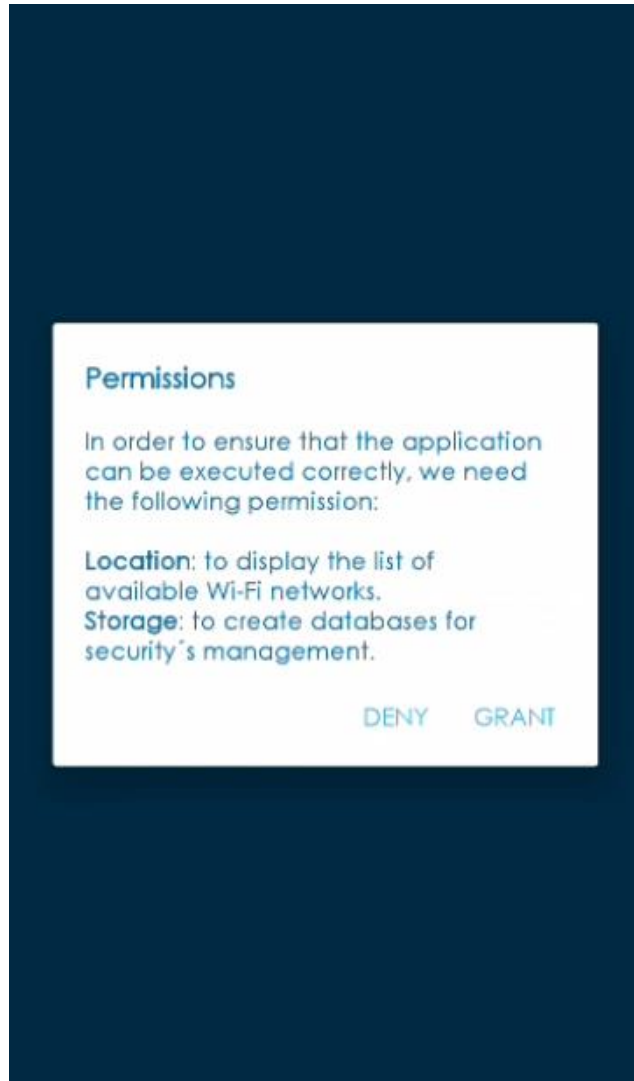
**OTGC sources** available publicly at OCF GitHub:

OTGC Android	→	<a href="https://github.com/openconnectivity/otgc-android">https://github.com/openconnectivity/otgc-android</a>
OTGC Linux	→	<a href="https://github.com/openconnectivity/otgc-linux">https://github.com/openconnectivity/otgc-linux</a>
OTGC IoTivity	→	<a href="https://github.com/openconnectivity/1.3-rel-iotivity-otgc">https://github.com/openconnectivity/1.3-rel-iotivity-otgc</a>

OTGC is an open source code so can be modified by manufacturers to incorporate proprietary features and or branding graphical material.



# OTGC Installation



# OTGC Settings

**OTGC**  
bbcae4ea-d417-460b-ab

OCF Developer kit  
12345678-1234-1234-1234-  
switch

OCF\_DeviceSpy  
5889d930-2a44-4557-a93e-3613bb680592  
No standard device types

Unnamed  
5889d930-2a44-4557-a93e-3613bb680592  
No standard device types

RFOTM

RFNOP

Show log

Settings



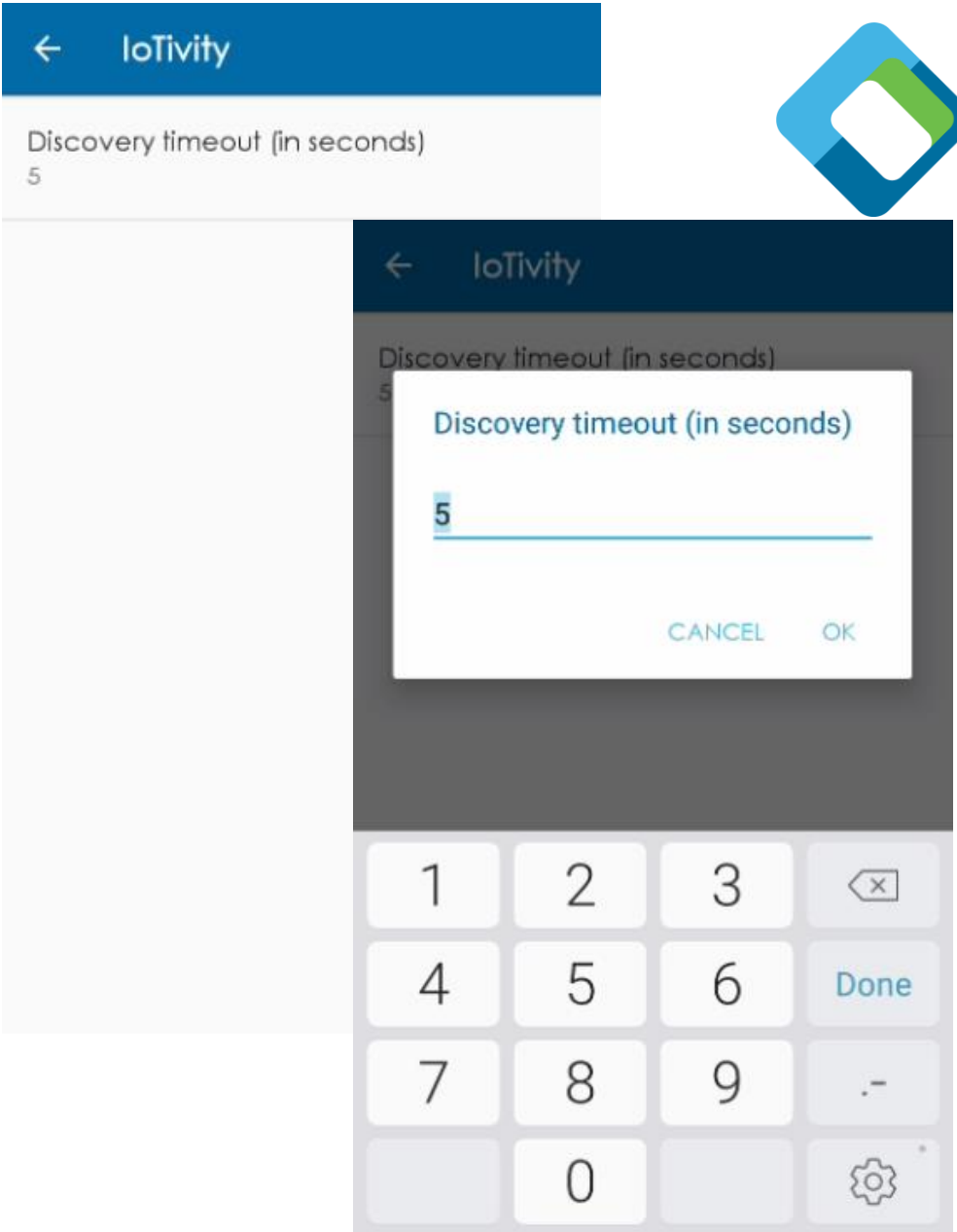
Onboarding Tool and Generic Client  
Version 1.0.8



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IoTivity

Discovery timeout (in seconds)  
5

Discovery timeout (in seconds)  
5


CANCEL OK

1 2 3

4 5 6 Done

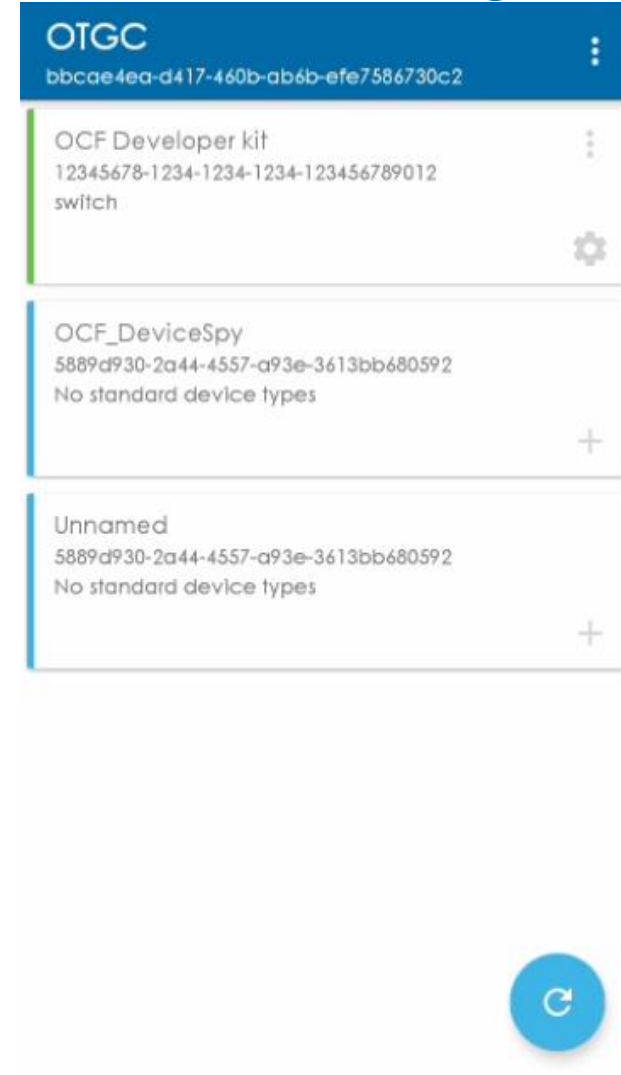
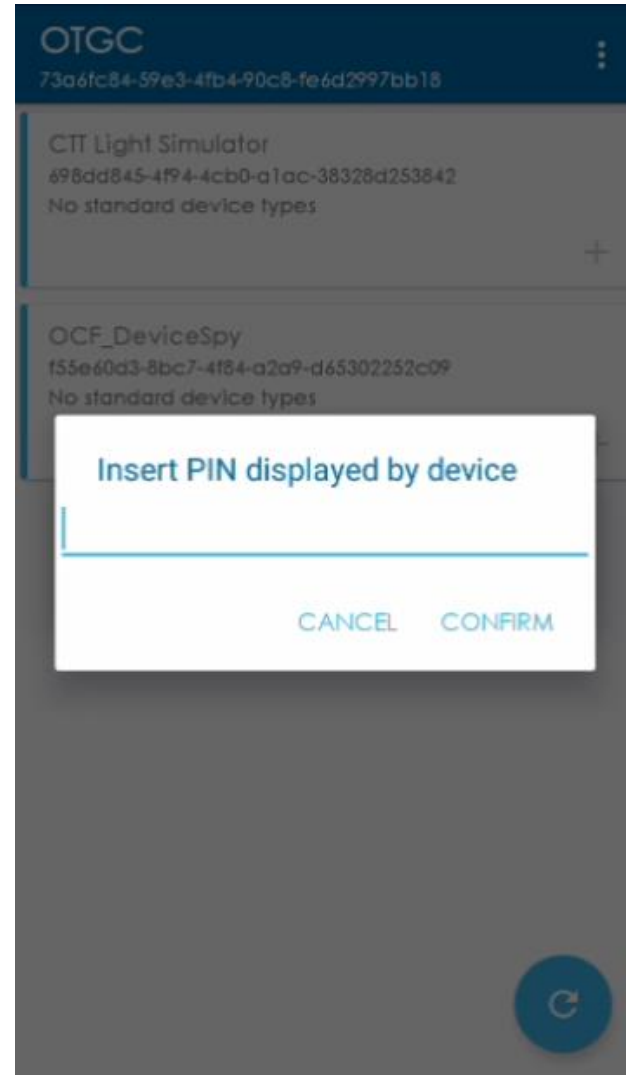
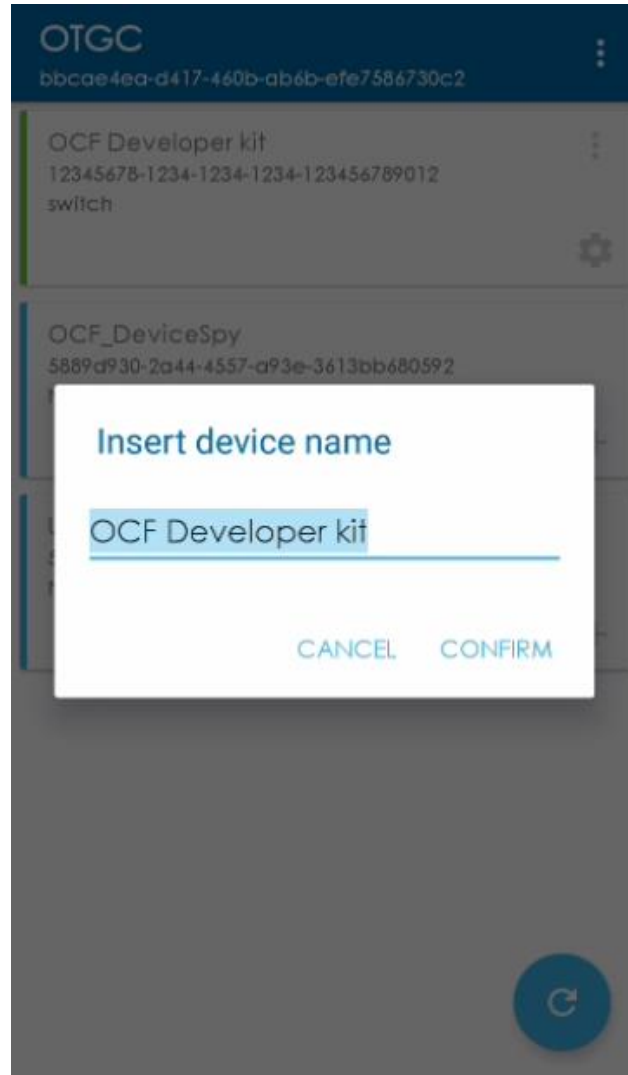
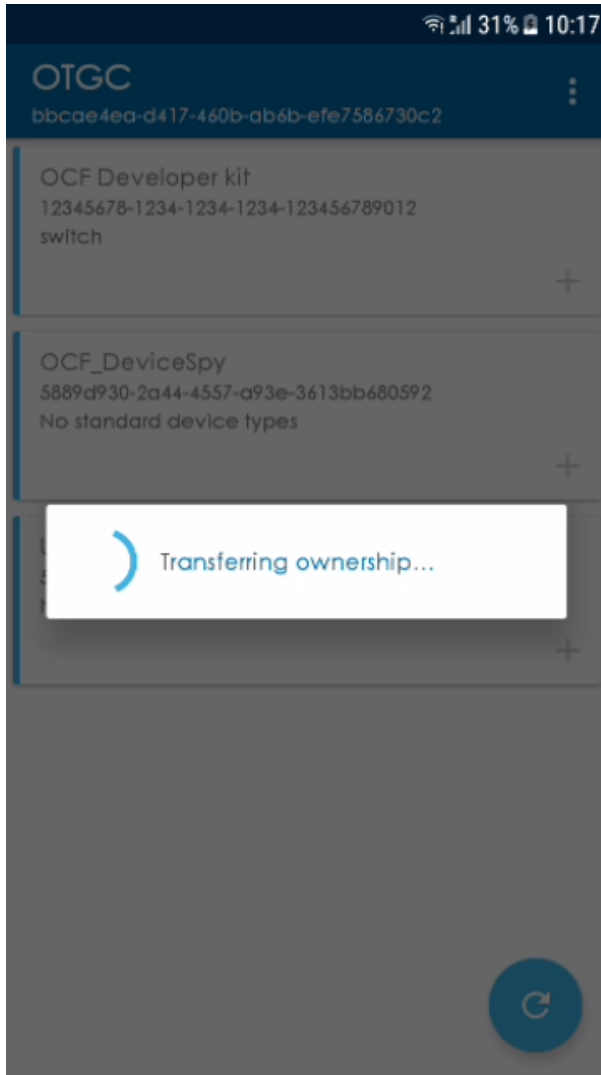
7 8 9 .-

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# OTGC Scanning + Onboarding







# OTGC Device Operation (I)

The image displays three screenshots of the OTGC (Over-the-air Transport Gateway Control) interface, illustrating device management operations.

**Screenshot 1 (Left):** Shows two device cards. The top card is for an "OCF Developer kit" with MAC address "12345678-1234-1234-1234-123456789012" and type "switch". The bottom card is for an "OTGC" device with MAC address "e9470c9f-ec79-4990-b4fd-50be832d53ed" and type "No standard device types". Both cards have a settings gear icon.

**Screenshot 2 (Middle):** Shows the same two device cards. A context menu is open over the top card, listing four options: "Access Control", "Credentials", "Wi-Fi Easy Setup", and "Offboard".

**Screenshot 3 (Right):** Shows two device cards. The top card is for an "OCF Developer kit" with MAC address "12345678-1234-1234-1234-123456789012" and type "switch". The bottom card is for an "OCF\_DeviceSpy" with MAC address "5889d930-2a44-4557-a93e-3613bb680592" and type "No standard device types". Both cards have a plus sign icon on the right side.



# OTGC Device Operation (II)

**OTGC**  
bbcae4ea-d417-460b-ab6b-efe7586730c2

- OCF Developer kit  
12345678-1234-1234-1234-  
switch
- OCF\_DeviceSpy  
5889d930-2a44-4557-a93e-  
No standard device type
- Unnamed  
5889d930-2a44-4557-a93e-  
No standard device types

Set device name  
Access Control  
Credentials  
Wi-Fi Easy Setup  
Offboard

**Access Control**

1 Connection type: Anonymous  
 C  R  U  D  N  
/oic/res  
/oic/d  
/oic/p

2 Connection type: Authenticated  
 C  R  U  D  N  
/oic/res  
/oic/d  
/oic/p

3 Connection type: Anonymous  
 C  R  U  D  N  
/oic/sec/doxm

4 Connection type: Authenticated  
 C  R  U  D  N  
/oic/sec/doxm

5 Connection type: Authenticated  
 C  R  U  D  N  
/switch

**Create Access Policy**

Subject type  
 UUID  
 Role  
 Connection type

UUID  
\_\_\_\_\_

C  R  U  D  N

/oic/sec/doxm

/oic/sec/pstat

/oic/sec/acl2

/oic/sec/cred

/oic/sec/crl

/oic/sec/csr



# OTGC Device Operation (III)

← Credentials

1  
UUID: bbcae4ea-d417-460b-ab6b-efe7586730c2  
[SYMMETRIC\_PAIR\_WISE\_KEY]

+

← Install Credential

Credential type

Identity

Role

🔒

← Install Credential

Credential type

Identity

Role

Role ID \_\_\_\_\_ Role Authority \_\_\_\_\_

🔒



# OTGC Device Operation (IV)

← OCF Developer kit ⓘ

/switch

← OCF Developer kit ⓘ

/switch

←

Device name  
OCF Developer kit

Spec version url  
ocf.1.0.0

Device ID  
12345678-1234-1234-1234-123456789012

Data model  
ocf.res.1.0.0,ocf.sh.1.0.0

Protocol independent ID  
b0ed9259-ec95-4ac6-8162-241d0da02683

Localized descriptions

Software version

Manufacturer name  
Vprime

Model number



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