



OPEN CONNECTIVITY
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OTGC

Onboarding Tool and Generic Client Hands-on Training of OTGC

OCF EU Developer Training (updated October 2021)

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 - Android

OTGC binary (Android apk) available publicly at OCF GitHub Developers Area:

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

Current version (October 2021) for otgc-Android is v 3.1.0

OTGC sources available publicly at OCF GitHub:

OTGC Android → <https://github.com/openconnectivity/otgc-android>

OTGC IoTivity → <https://github.com/iotivity/iotivity-lite>

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



OTGC Resources - Linux

OTGC binary needs to be build fro source code:

See the readme of: <https://github.com/iotivity/otgc-linux>

Build command:

```
curl https://iotivity.github.io/otgc-linux/setup.sh | bash
```

Current version (October 2021) of otgc-Linux is v3.1.0

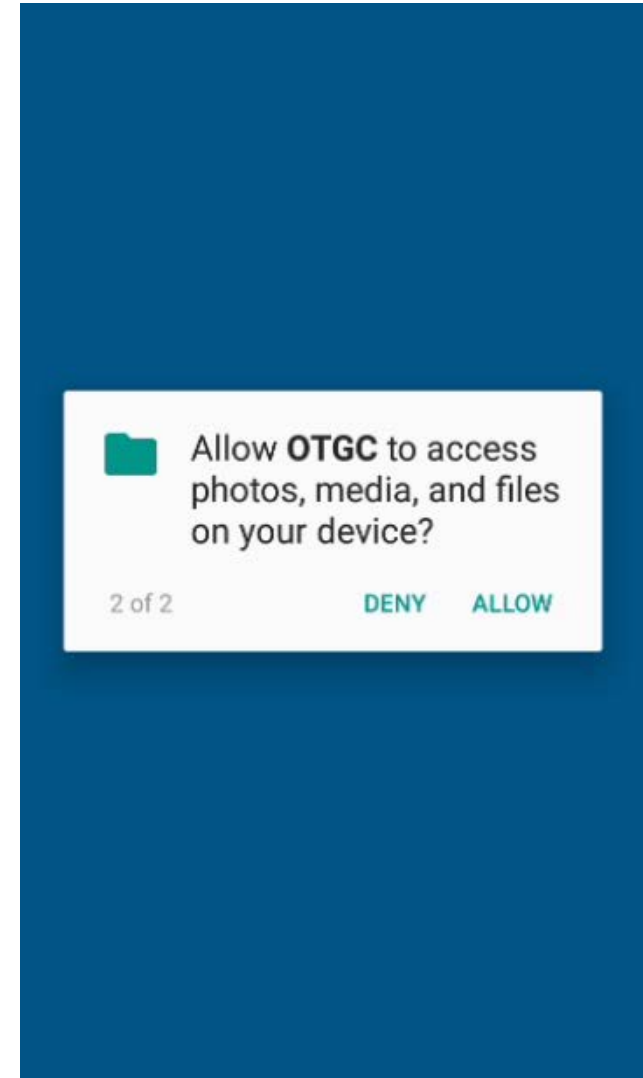
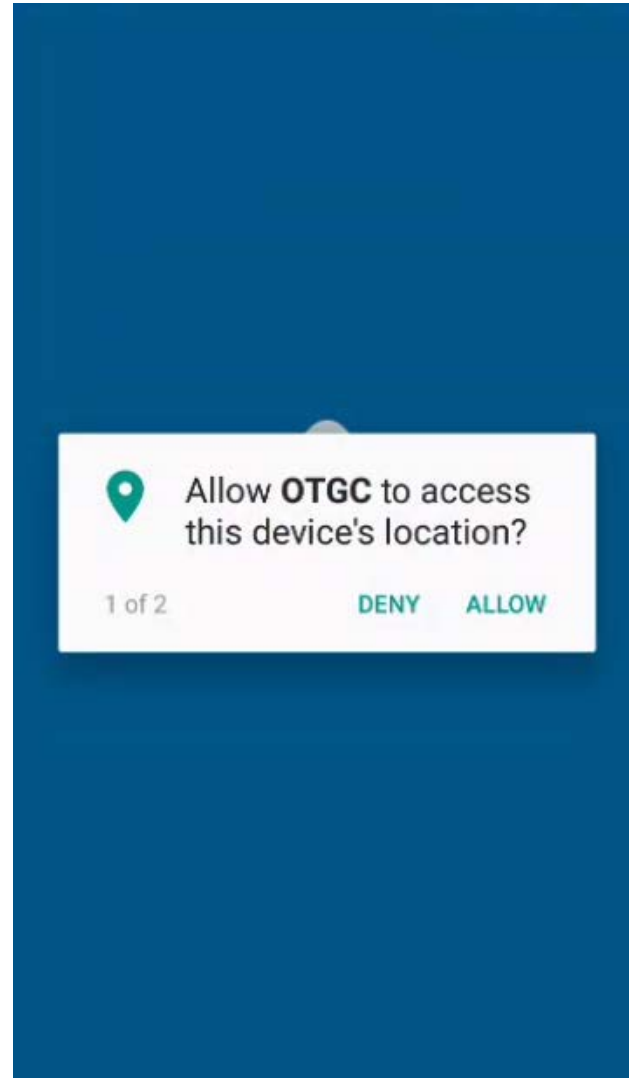
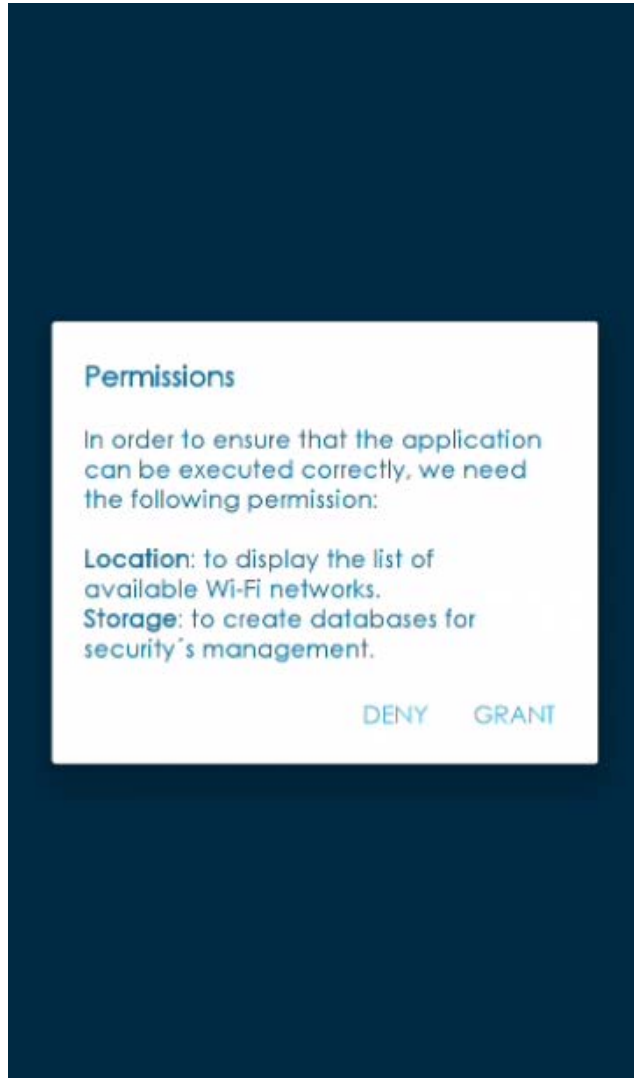
OTGC sources available publicly at OCF GitHub:

OTGC Linux	→	https://github.com/openconnectivity/otgc-linux
OTGC IoTivity	→	https://github.com/iotivity/iotivity-lite

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

← IoTivity

Discovery timeout (in seconds)

Discovery timeout (in seconds)
5

CANCEL OK

1 2 3

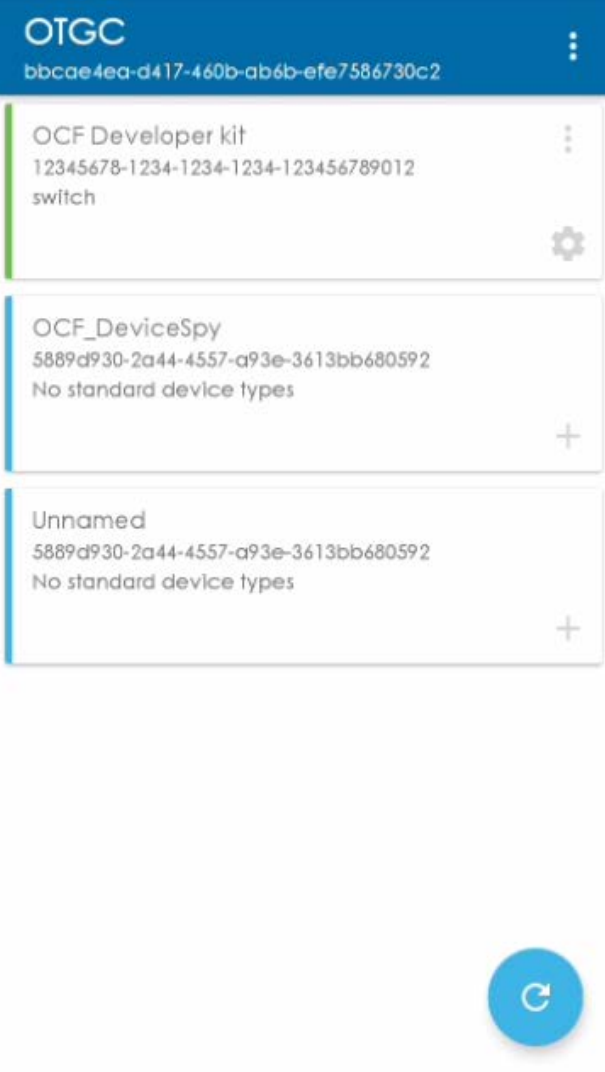
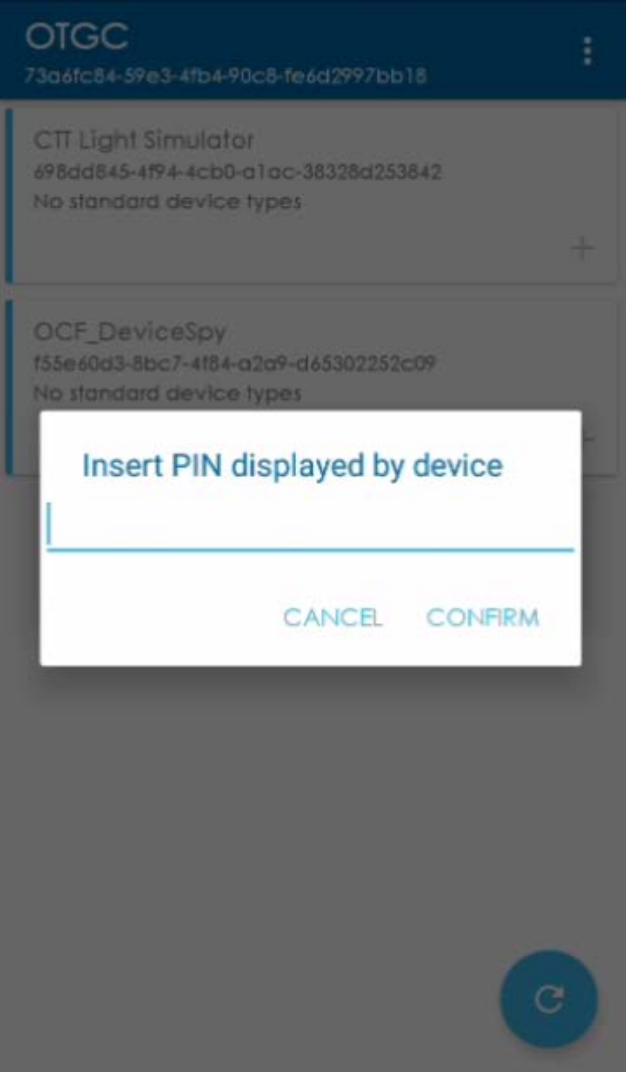
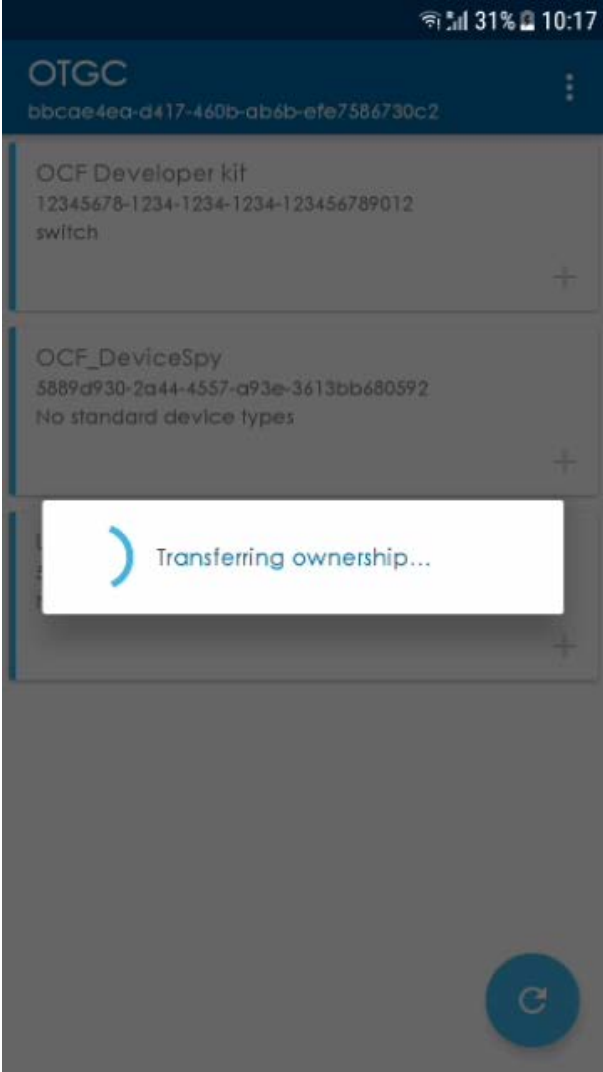
4 5 6 Done

7 8 9 .-

0



OTGC Scanning + Onboarding






OTGC Device Operation (I)

OTGC
dab22298-c460-4e53-baed-a2068d508066

OCF Developer kit
12345678-1234-1234-1234-123456789012
switch

OTGC
e9470c9f-ec79-4990-b4fd-50be832d53ed
No standard device types




OTGC
dab22298-c460-4e53-baed-a2068d508066

OCF Developer kit
12345678-1234-1234-1234-123456789012
switch

OTGC
e9470c9f-ec79-4990-b4fd-50be832d53ed
No standard device types

- Access Control
- Credentials
- Wi-Fi Easy Setup
- Offboard



OTGC
bbcae4ea-d417-460b-ab6b-efe7586730c2

OCF Developer kit
12345678-1234-1234-1234-123456789012
switch

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





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)





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