

Live Objects IoT

Training session

February, 2019



dorota.krasinska@orange.com



Agenda

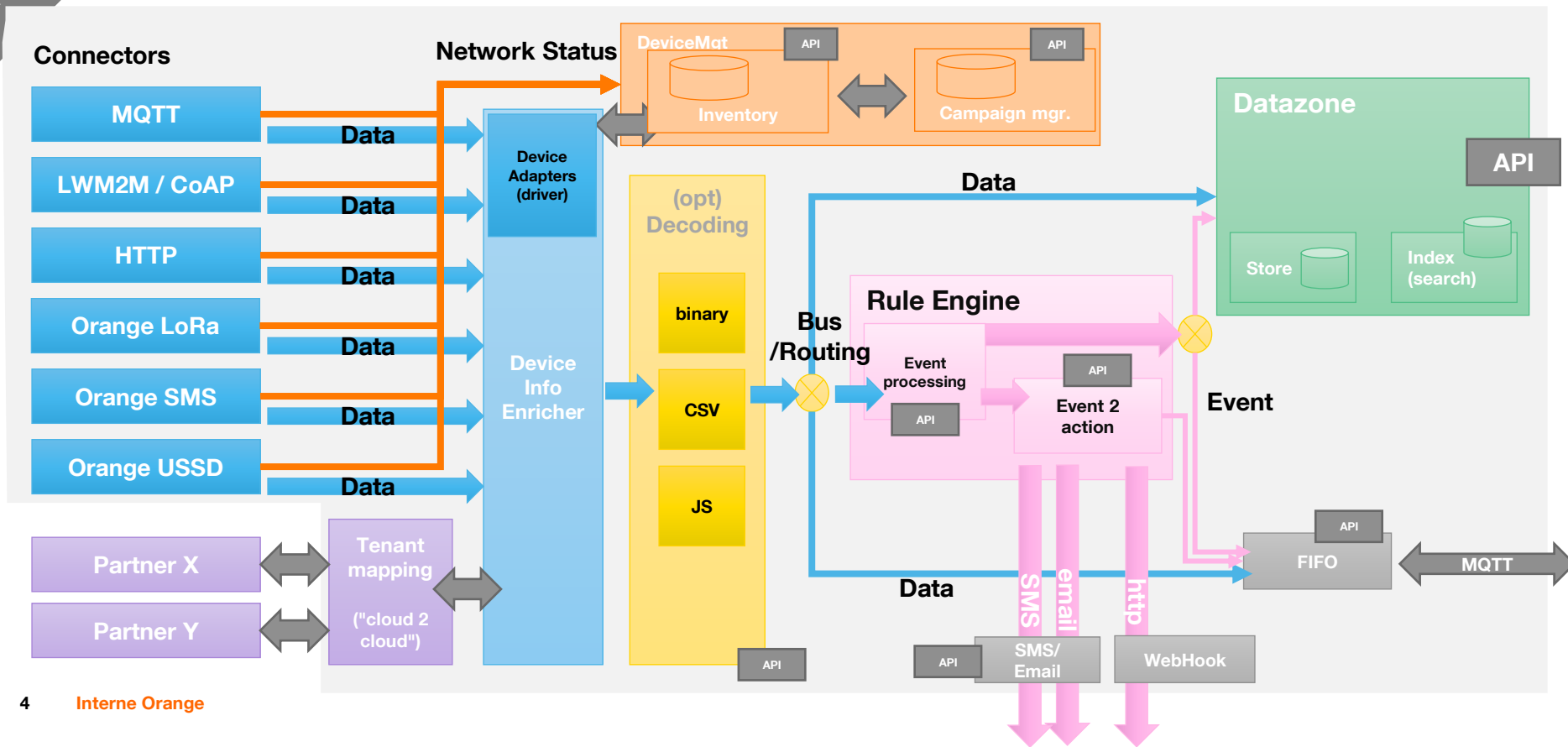


► Introduction : quick features review

1. Architecture overview
2. Some useful tools
3. My first steps
4. Manage my device park
5. Use my data

#1

Architecture overview





Concepts / data model : 3 main building blocks

Tenant accounts

- Offer/technical/user settings
- BSS: offer, options
- Users / Roles
- API keys

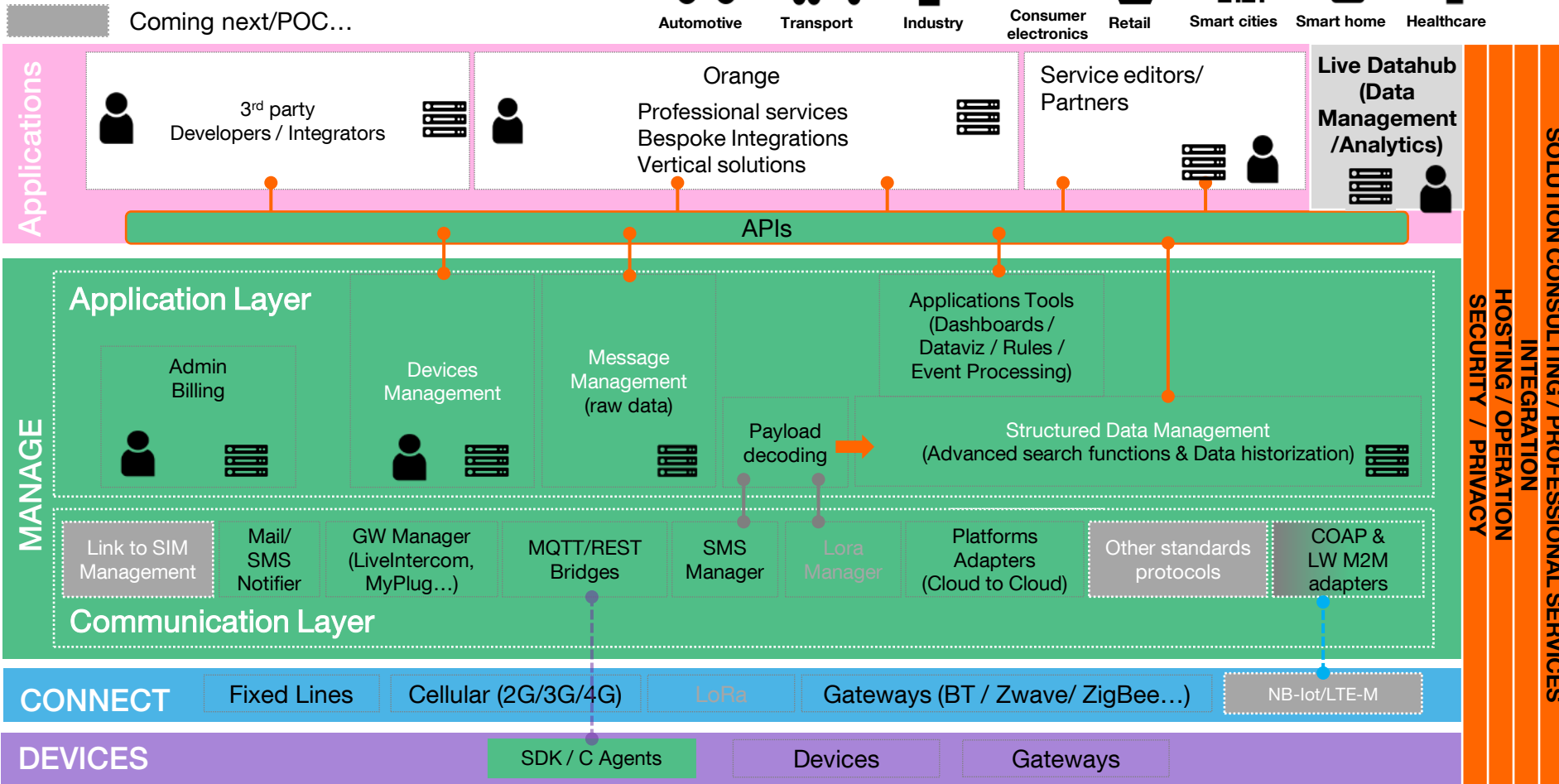
Data

- Data message
- Store, search
- Event processing (matching rules, firing rules & guards)
- ActionPolicy

Device Mgt:

- Devices
- DeviceTypes (ongoing)
- Groups
- Connectivity
- Commands, param, resource update
- Campaign

Functional Overview & Value proposition

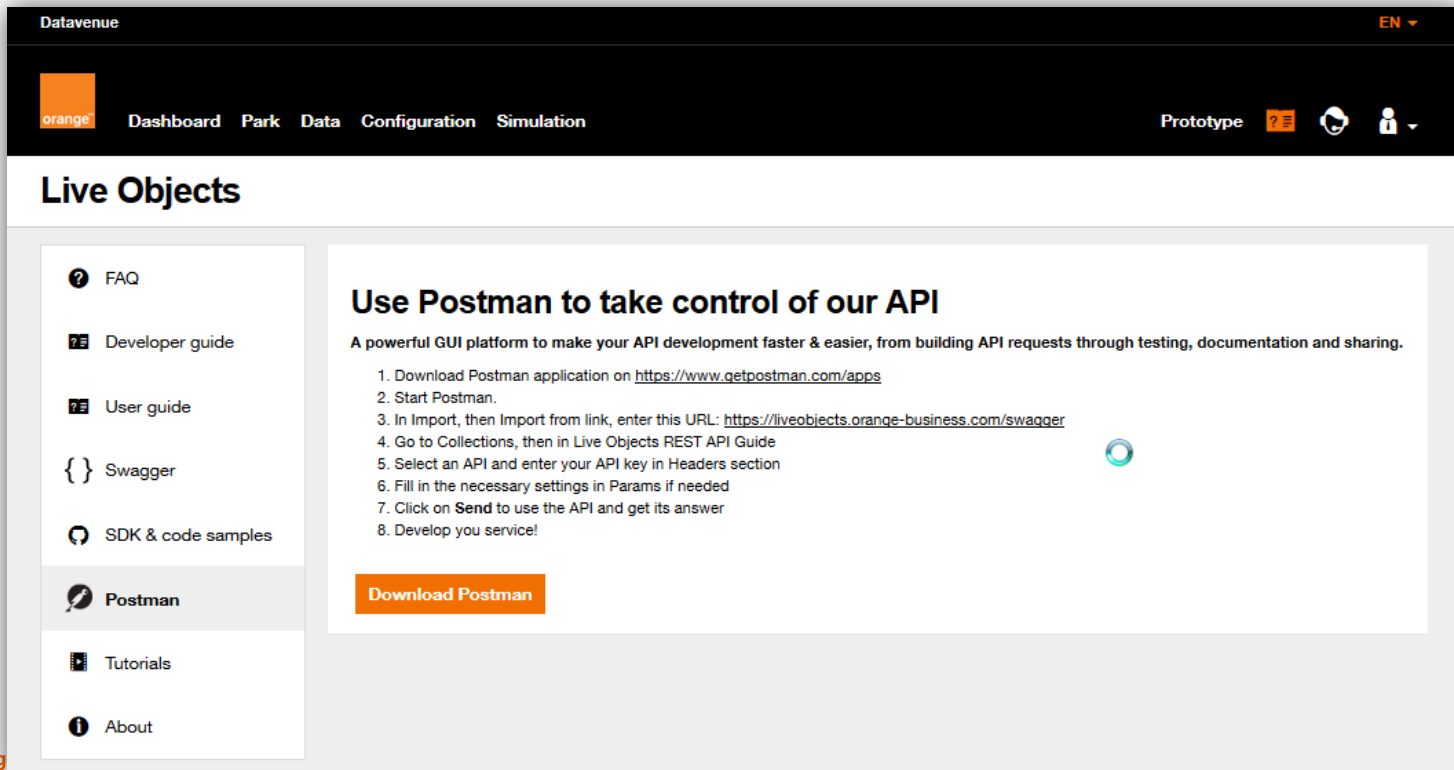


#2

Some useful Tools



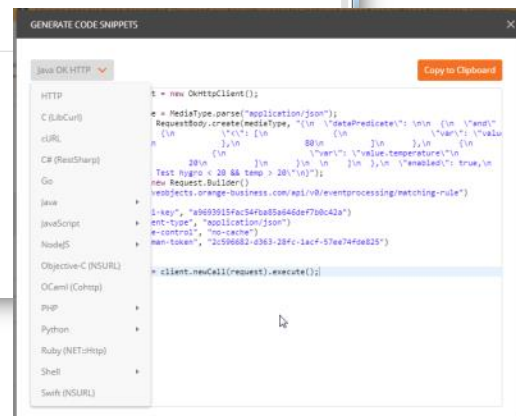
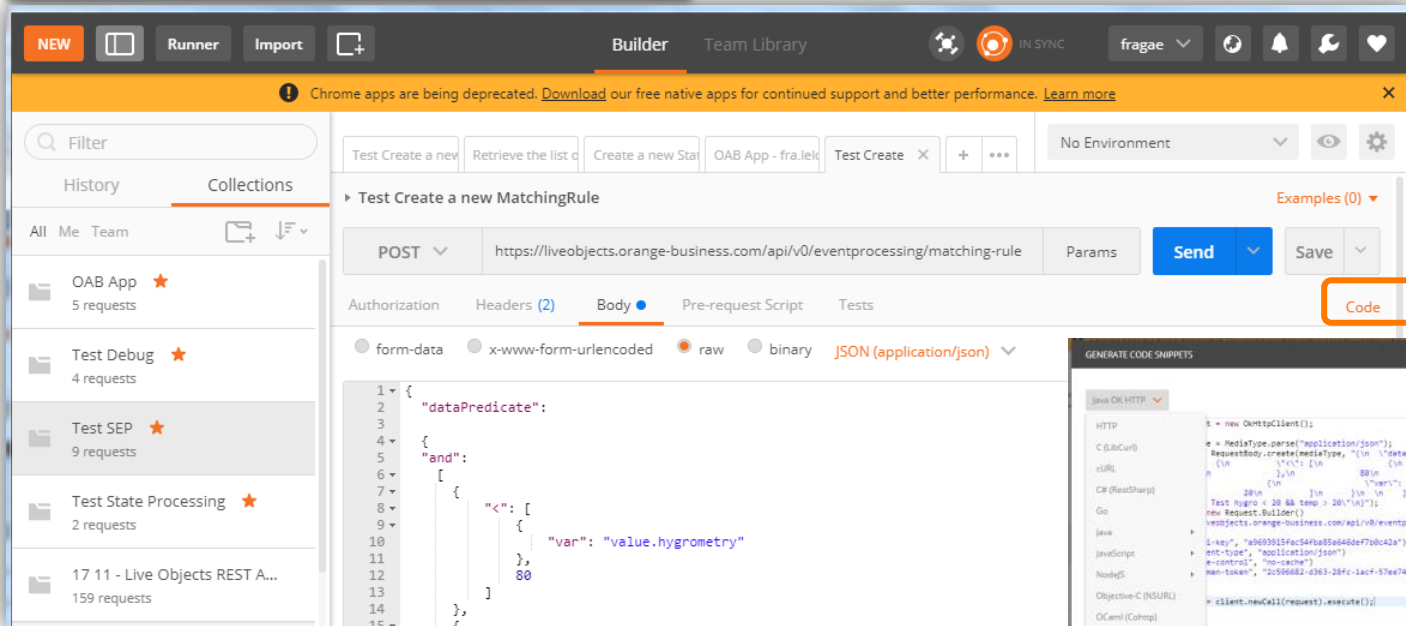
Postman : installation set up

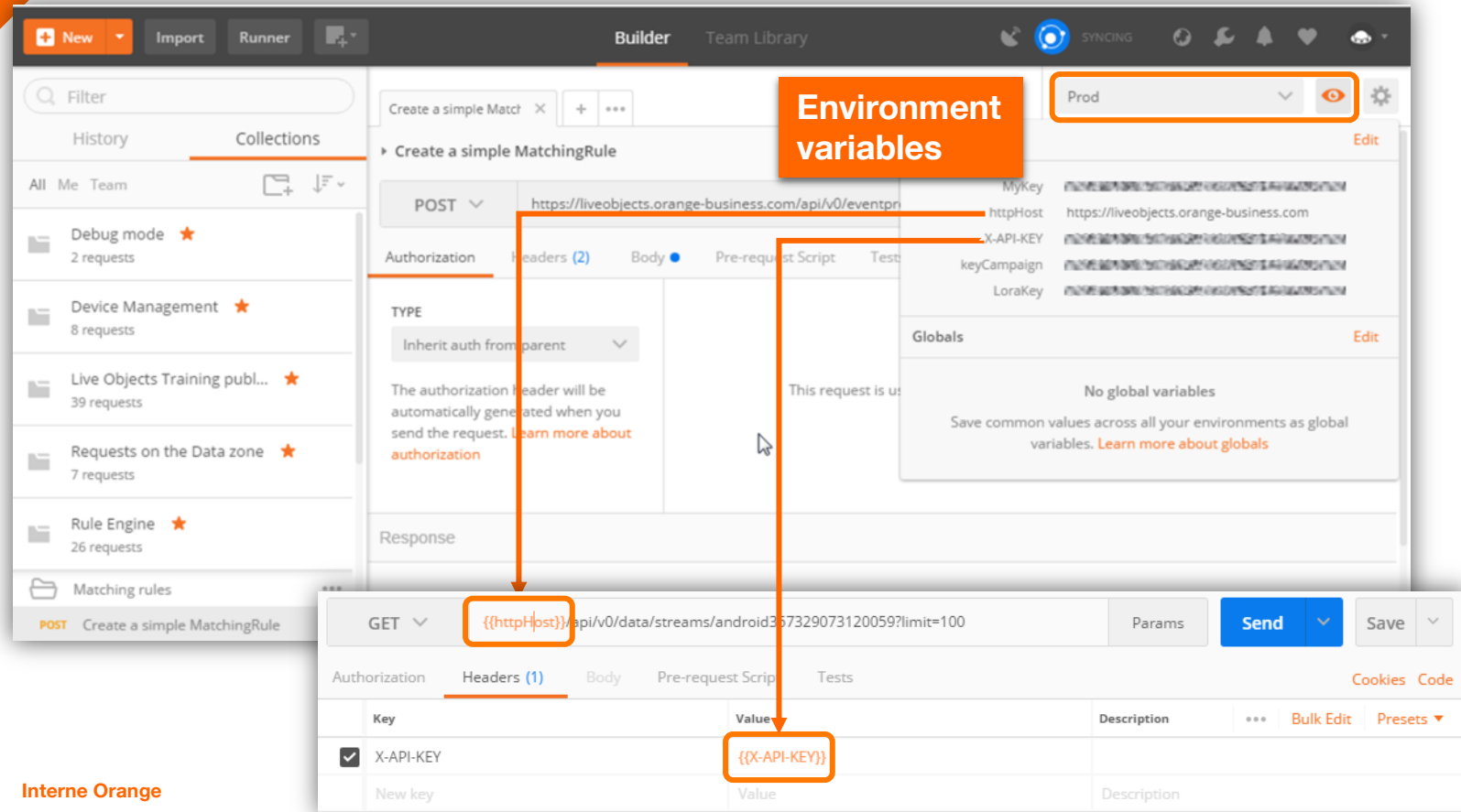




Postman

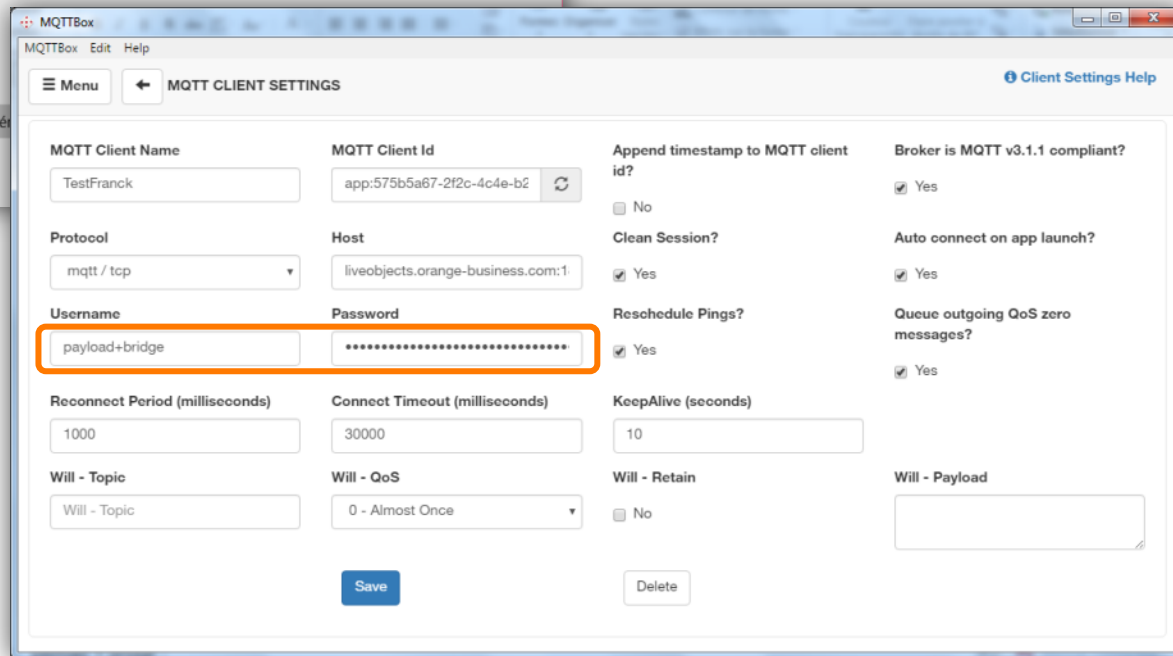
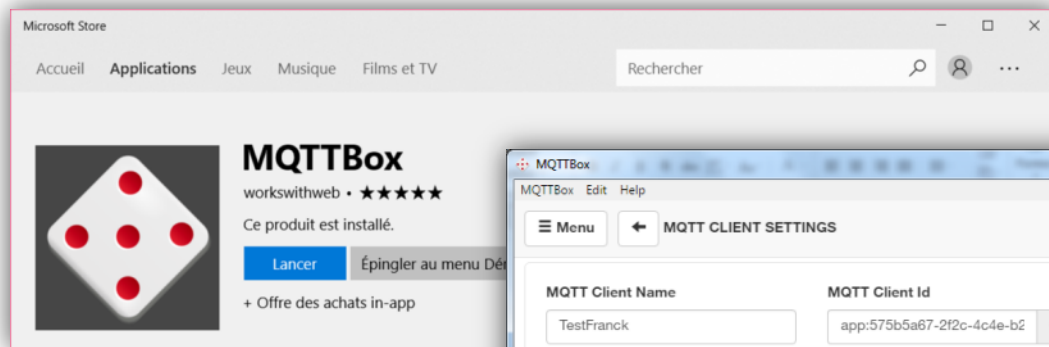
Manage/share collections of requests
Generate code







MQTT Box : install/configure a client application

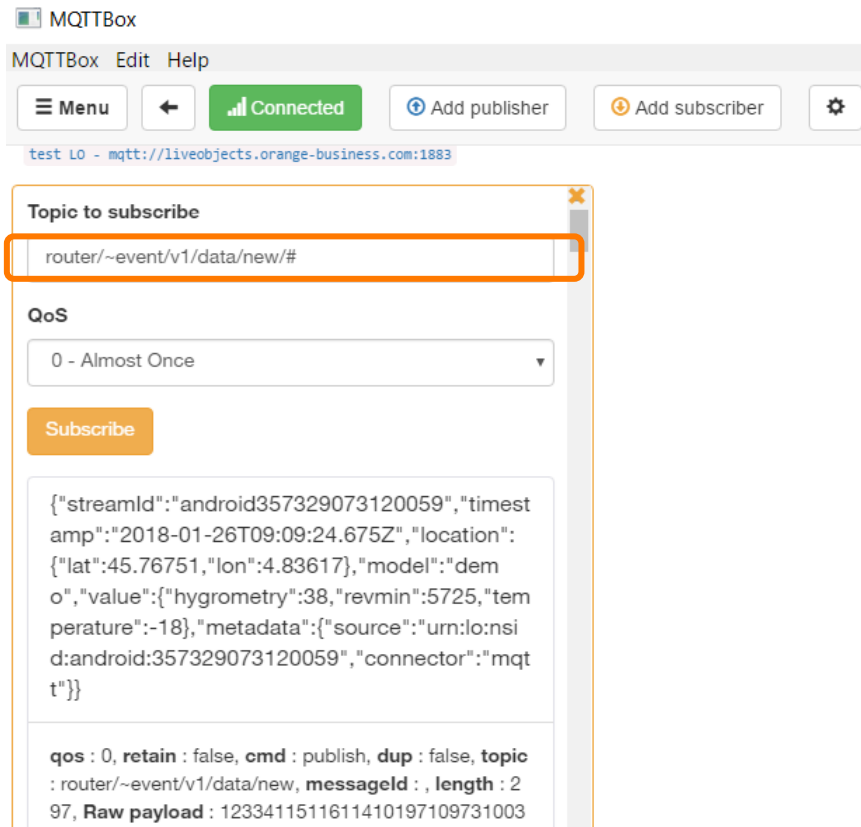


User name :
« payload+bridge »
Live Objects API Key



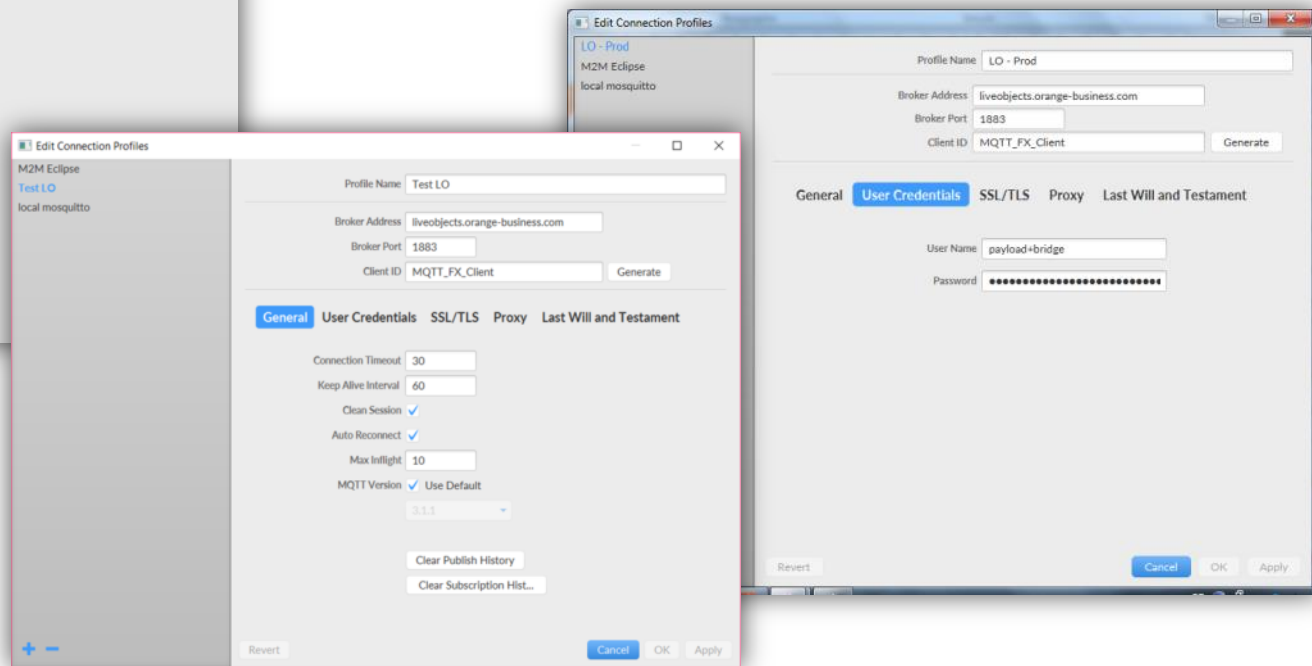
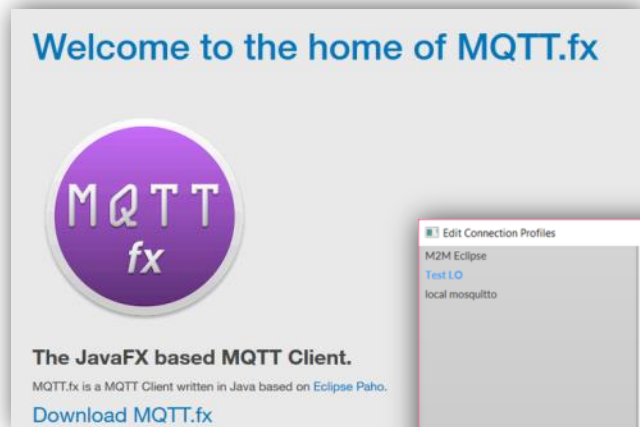
MQTT Box

Subscribe to topics, ex :
« router/~event/v1/data/new/# »





MQTT Fx : install/configure a client application

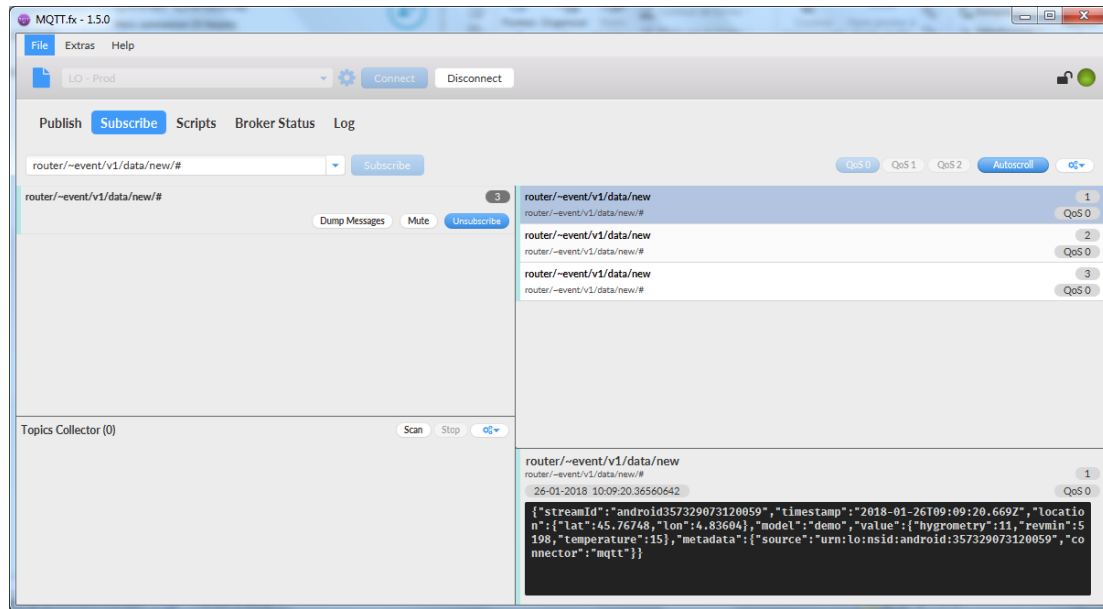




MQTT Fx : install/configure a client application

Subscribe to topics, ex :

« router/~event/v1/data/new/# »



#3

My first steps

My first steps

1

Get a free account

2

Create an API key



API keys are used for API to authenticate the customer's account on Live Objects

3

Enter it in your object



Use our device simulator on Android



<https://play.google.com/store/apps/details?id=com.orange.liveobjects.assetdemo>

4

Visualise your data in Live Objects

The screenshot shows the 'Live Objects' web portal. At the top, there's a dark header with 'Datavenue' on the left, 'orange' logo in the center, and 'EN' with a dropdown arrow on the right. Below the header, there are navigation links: 'Prototype', a help icon, a chat icon, and 'Sign in' and 'Sign up' buttons. The main content area has a white bar with 'Live Objects' and a mouse cursor icon. Below this is a grey bar with the heading 'Boost your IoT potential' and a subtext: 'Live Objects is the Orange answer to manage your objects and collect, store, secure and process your IoT data.' The main section has a blue background with a 'News' banner (orange text on a white diagonal) and the title 'IoT Device Catalogue'. The text below the title says: 'Looking for a specific object to develop your IoT project? Or you simply want to know our range of connected objects? Let yourself be guided through our IoT Device Catalogue.' There is a 'Get the catalogue' button. To the right is an image of a hand holding a small blue IoT device with two lock icons on its screen. Navigation arrows (left and right) are on the sides of the blue section. At the bottom, a dark bar contains the text 'Need a 3 months discover account?' and a 'Discover Offer' button.

Datavenue

orange

Prototype

Sign in Sign up

EN

Live Objects

Boost your IoT potential

Live Objects is the Orange answer to manage your objects and collect, store, secure and process your IoT data.

News IoT Device Catalogue

Looking for a specific object to develop your IoT project? Or you simply want to know our range of connected objects? Let yourself be guided through our IoT Device Catalogue.

Get the catalogue

Need a 3 months discover account?

Discover Offer

Datevenue

EN



Prototype





Sign in

Sign up

Live Objects



Account request

Please fill this form to get your Live Objects account.

Email

First name

Last name

You are: ☐ a company, or a community

Your project: ☐ I would like to use LoRa@ network*

*available in France only for now.
Note that LoRa@ network access involves legal constraints. In particular you must be a french company and provide your Kbis extract.

Copy the code 

Under article 32 of the French Law No 78-17 of January 6th, 1978, we inform you that personal identifiable information collected by Live Objects is processed.
The Data Controller is Orange Applications for Business.
The purpose for data processing is, on the one hand, get your feedbacks on the service and on the other exchange on your needs and our solutions.
Personal identifiable information that has been processed is kept for the duration of the subscription.
Pursuant to articles 38 et seq. of the aforementioned law, you have rights of access, rectification and opposition. To assert these rights, you can contact Orange Applications for Business at OAB-DonneesPersonnelles@list.orange.com or by post at the following address:
OAB - Personal Data
Département for Quality, Process & Security (DQPS)
4 rue de la Châtaignerie
35510 Cesson-Sévigné (France)

I am requesting a Live Objects test account (limited to 3 months and 10 devices)

Personalize your password
to activate your account

 Datavenue

Live Objects



Bonjour,

You have requested the creation of a "Discover" Live Objects account using this email address

In order to activate your account, please finish its creation by setting your password by clicking on link below. This link is valid 1 month.

Activate my "Discover" account

10

Connected
devices
maximum

3

Months
free

Live Objects team.

 To learn more about Live Objects

- Visit our website <https://preprod.m2m.orange.com> to get more information
- Visit our [online help](#) for complete technical documentation.

Please do not reply to it email.
For a commercial contact, about Live Objects, [cliquez ici](#).

(Login)

orange

Prototype

?

Sign in

Sign up

EN

Live Objects



Identification

enter your login (email by default)

enter your password

Sign in

[Forgotten password?](#)



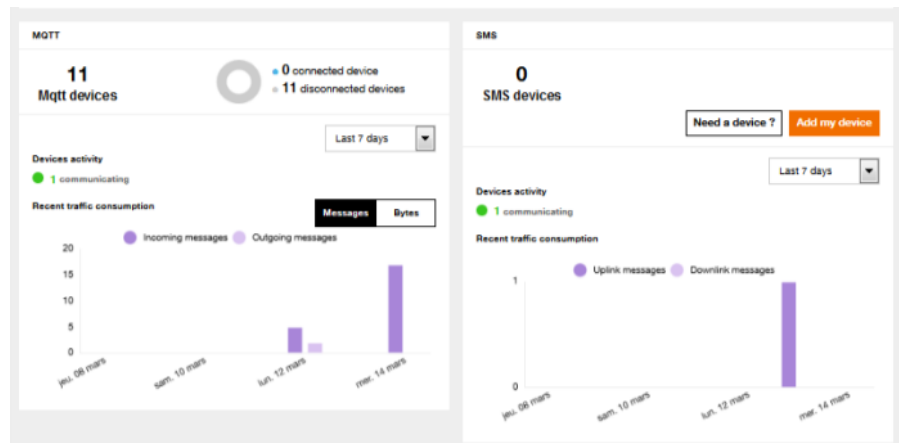
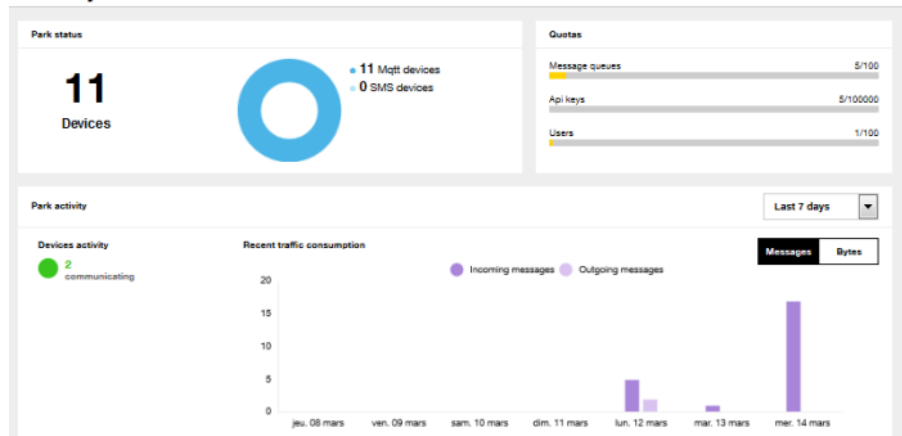
\\ Dashboard

Orange Business Services Orange Partner EN

Dashboard Park Data Configuration Simulation

Prototype Franck.ChezOrange

Live Objects



My first steps

1

Get a free account

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Create an API key



API keys are used to authenticate the customer's account on Live Objects

3

Enter it in your object



Use our device simulator on Android



<https://play.google.com/store/apps/details?id=com.orange.liveobjects.assetdemo>

4

Visualise your data in Live Objects

\\ Configuration \ API key

Orange Business Services Orange Partner EN

orange Dashboard Devices Data **Configuration** Simulation Prototype ? ? ? ? FranckChezOrange

Live Objects

Configuration > Api keys

Account

Users

Api keys

Message bus

Firmwares

Decoders

Api keys - 6 api keys

Add

☐	Name	Active	Profile	Last activity
☐	App OAB	Enabled	Customized	35 minutes ago
☐	Jyse	Enabled	Customized	19 hours ago
☐	Clé Campaign	Enabled	Customized	5 days ago
☐	separate	Enabled	Customized	4 months ago
☐	testflg	Enabled	Application	2 months ago
☐	cle charly	Enabled	Customized	19 hours ago

... Create an API Key

The screenshot shows the 'Add an api key' page in the Orange Web Portal. The left sidebar contains navigation links: Account, Users, Api keys (selected), Message bus, Firmwares, and Decoders. The main content area is titled 'Add an api key' and contains an 'Information' section with the following fields:

- Name ***: test
- Description**: Child of MasterKey
- Queues restriction**: enter queues to be used for restriction (with a help icon ?)
- Valid from**: 06/13/2018 9:56 AM (with a help icon ?)
- Valid until**: enter an end date (with a help icon ?)

An orange callout box with the text 'Restrict to Fifo access (we will see that later)' points to the 'Queues restriction' field.

... Create an API Key

Roles : check the technical doc for details

Profile ☐ MQTT Device ☒ Application ☐ Customized

Roles	Name	Description	Reading	Writing
	User	Users management Assign USER_R and USER_W roles	☐	☐
	API Key	API Keys management Assign API_KEY_R and API_KEY_W roles	☐	☐
	Bus access	Message Bus access using MQTT or HTTP Assign BUS_R and BUS_W roles	☒	☒
	Bus Configuration	Routing Keys and Message Queues management Assign BUS_CONFIG_R and BUS_CONFIG_W roles	☒	☒
	Campaign	Managment of massive operations on a set of Devices Assign CAMPAIGN_R and CAMPAIGN_W roles	☐	☐
	Data	Collected Data Access Assign DATA_R and DATA_W roles	☒	☒
	Data Processing	Data Decoders and Events Processing management Assign DATA_PROCESSING_R and DATA_PROCESSING_W roles	☒	☒
	Device	Device management Assign DEVICE_R and DEVICE_W roles	☐	☐
	Device Access	Device mode MQTT access Assign DEVICE_ACCESS role	☐	☐
	Account	Account configuration Assign SETTINGS_R and SETTINGS_W roles	☐	☐
	Kibana	Kibana access Assign KIBANA_R role	☐	

4.4. Role

A Role can be attributed to an **API key** or **user account**. It defines the privileges of this user or API key on Live Objects.

Important Notice : Some features are only available if you have subscribed to the corresponding option, so you may have the proper **roles** set on your user but no access to some features because these features are not activated on your tenant account.

The currently available roles and their inclusion in Admin or User profiles:

Role Name	Technical value	Admin profile	User profile	Privileges
API Key	API_KEY_R	X	X	Read parameters and status of an API key .
API Key	API_KEY_W	X	X	Create, modify, disable an API key .
User	USER_R	X	X	Read parameters and status of a user .
User	USER_W	X		Create, modify, disable a user .
Settings	SETTINGS_R	X	X	Read the tenant account custom settings.
Settings	SETTINGS_W	X	X	Create, modify tenant account custom settings.
Device	DEVICE_R	X	X	Read parameters and status of a Device (aka Asset) .
Device	DEVICE_W	X		Create, modify, disable a Device (aka Asset) , send command, modify config, update resource of a Device.
Device Campaign	CAMPAIGN_R	X	X	Read parameters and status of a massive deployment campaign on your Device Fleet.
Device Campaign	CAMPAIGN_W	X		Create, modify a massive deployment campaign on your Device Fleet.

... Copy/Paste the key, it will appear only once !

Orange Business Services Orange Partner EN

orange Dashboard Devices Data

Live Objects

Configuration > Api keys

Account

Users

Api keys

Message bus

Firmwares

Decoders

Api key generated

Here is the api key value. Keep it in a safe place.

812481601c484a45b725792fc8ecc18b [Copy to clipboard](#)



[Close](#)

☐	testfig	Enabled	Application	2 months ago
☐	cle charly	Enabled	Customized	19 hours ago
☐	test	Enabled	Application	a few seconds ago

[+ Add](#) [Refresh](#) [Stop](#) [Delete](#)

activity

minutes ago

rs ago

ths ago

ago

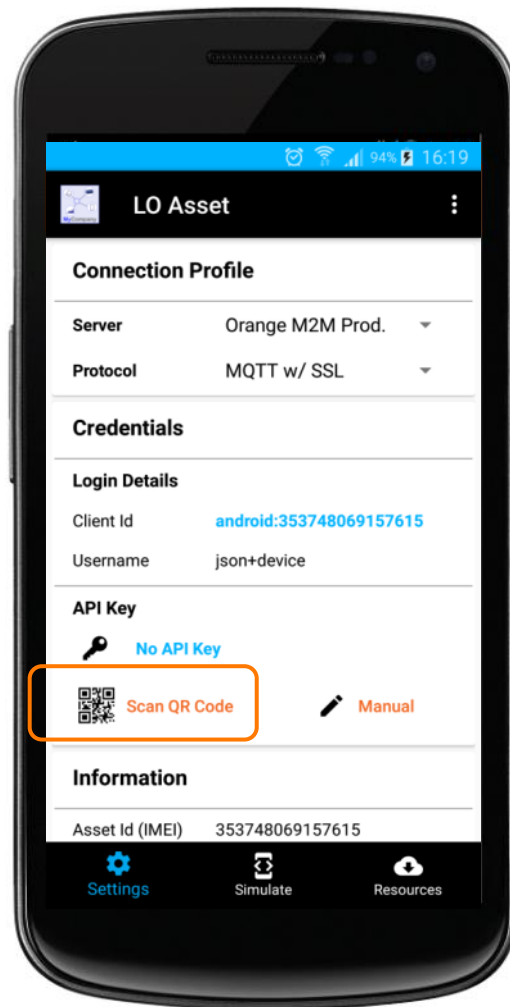
ths ago

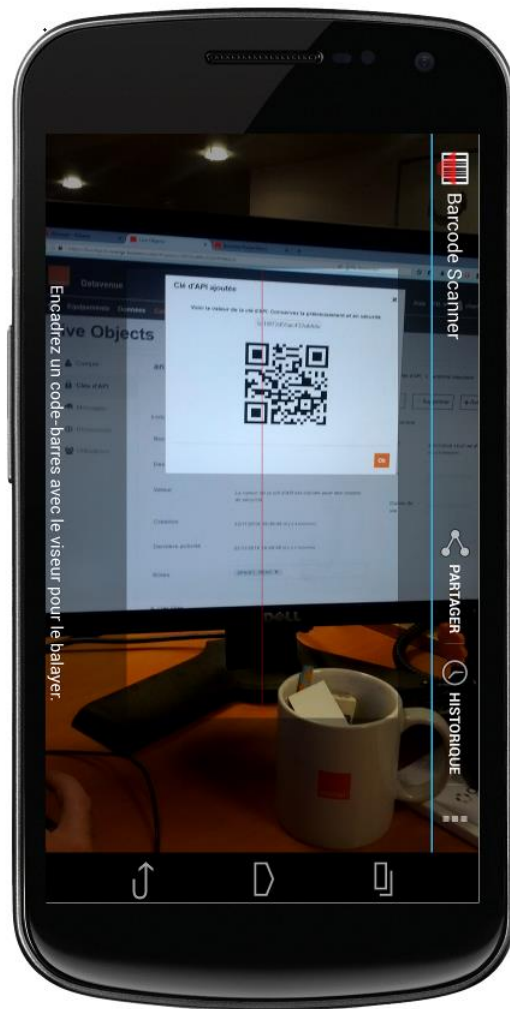
[Feedback](#)

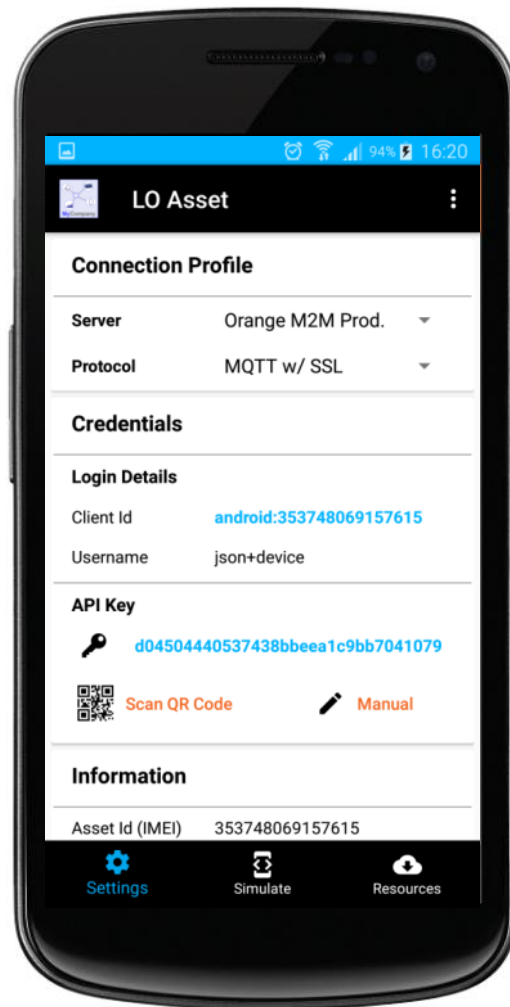
... API Key created

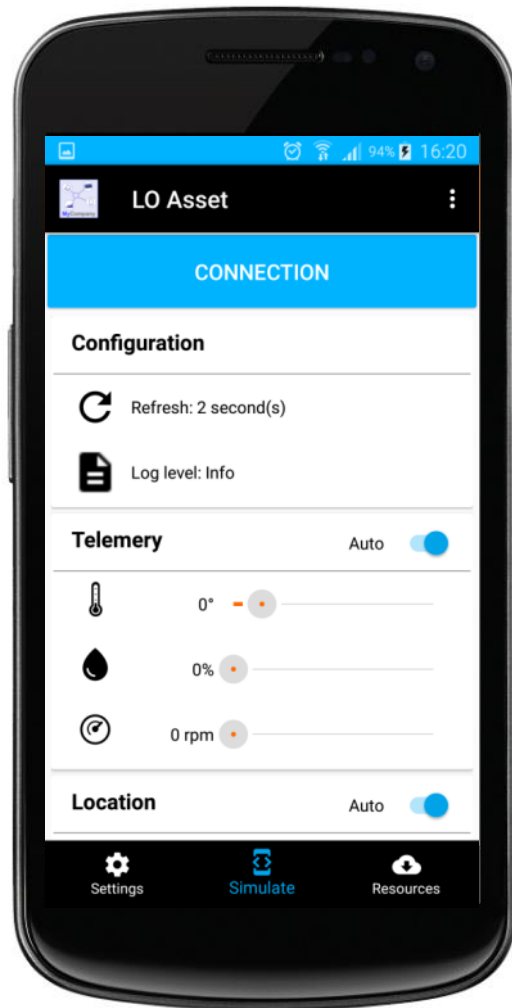
The screenshot shows the Orange Web Portal interface. The top navigation bar includes 'Dashboard', 'Devices', 'Data', 'Configuration' (selected), and 'Simulation'. The user 'FranckChezOrange' is logged in. The main section is 'Live Objects' with a sub-section 'Configuration > Api keys'. On the left, a sidebar lists 'Account', 'Users', 'Api keys' (selected), 'Message bus', 'Firmwares', and 'Decoders'. The main content area is titled 'Api keys - 7 api keys' and contains a table of API keys. A new key named 'test' is highlighted with an orange box, and an orange callout box labeled 'Created key' points to it.

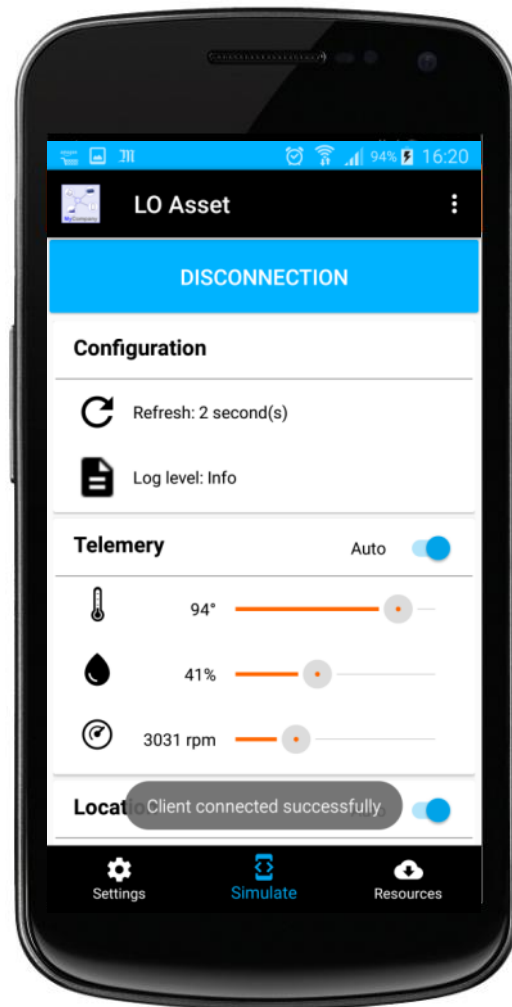
☐	Name	Active	Profile	Last activity
☐	App OAB	Enabled	Customized	34 minutes ago
☐	Jyse	Enabled	Customized	19 hours ago
☐	Clé Campaign	Enabled	Customized	4 months ago
☐	separate	Enabled	Customized	4 months ago
☐	testfig	Enabled	Application	2 months ago
☐	cle charly	Enabled	Customized	19 hours ago
☐	test	Enabled	Application	a few seconds ago











\\ Equipements

Orange Business Services Orange Partner EN ▾

orange Dashboard **Devices** Data Configuration Simulation Prototype ? ? ? FranckChezOrange ▾

Live Objects

Devices > Managed/MQTT

Managed/MQTT ▾ + Add device

Devices

Campaigns

All devices

France

All devices

Add filters Q

0 selected device / 8 devices.

☐	Name	Namespace ▾	Id ▾	Group	Tags	Status ▾	Last contact ▾	Path
☐	Auto-created device (mqtt / urn:lo:nsid:an droid:357329 073120059)	android	357329073120059	/	<u>testtest</u>	● Online	a few secon ds ago	direct

Connecting my devices

1

Get a free account

2

Create an API key



API keys are used for API to authenticate the customer's account on Live Objects

3

Enter it in your object



Use our device simulator on Android



<https://play.google.com/store/apps/details?id=com.orange.liveobjects&hl=en>

4

Visualise your data in Live Objects

Datavisualization

Currently available

	Portal Data tab	Inside Live Objects: list of all received payloads
	Kibana	Inside Live Objects: tool to analyze data and build simple & advanced dashboards
	Node-red	Above Live Objects : easy graphical tool to prototype simple dashboards and share them
	Freeboard.io	Above Live Objects: easy graphical tool to create simple dashboards and share them
	JYSE	Above Live Objects: easy graphical tool to build in drag and drop simple or advanced dashboards
	Bespoke development	Above Live Objects: turnkey application developed by integrator using Live Objects MQTT or REST APIs

Orange Business ServicesOrange PartnerFR

orange

Tableau de bordParcDonnéesConfigurationSimulation

Prototyper

FranckChezOrange

Live Objects

Données

Stream

De

Tags

Interface

78405 réponses

Date

Source

Stream

Valeur

Interface

Tags

04/09/2018 17:55:54

[urn:lo:nsid:android:357329073120059P](#)
RIMARY ⓘ

[android357329073120059P](#)
RIMARY

{ "nevmin": 5858, "CO2": 544, "doorOpen": false, "hygrometry": 68, "temp
erature": 90, "pressure": 1088 }

🔍

[matt](#)

-

04/09/2018 17:54:45

[urn:lo:nsid:android:357329073120059P](#)
RIMARY ⓘ

[android357329073120059P](#)
RIMARY

{ "nevmin": 5830, "CO2": 536, "doorOpen": false, "hygrometry": 62, "temp
erature": 89, "pressure": 1072 }

🔍

[matt](#)

-

04/09/2018 17:54:40

[urn:lo:nsid:android:357329073120059P](#)
RIMARY ⓘ

[android357329073120059P](#)
RIMARY

{ "nevmin": 5738, "CO2": 540, "doorOpen": false, "hygrometry": 60, "temp
erature": 88, "pressure": 1080 }

🔍

[matt](#)

-

🔍

🔄

📄

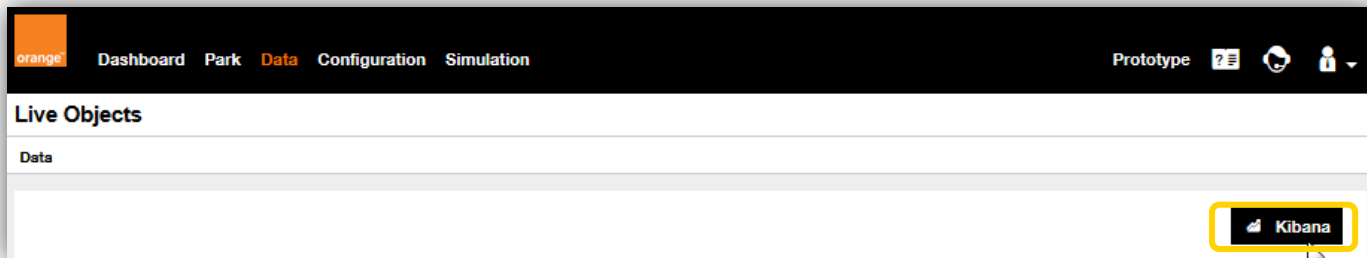
👍 Kibana

```
{
  "metadata": {
    "connector": "mqtt",
    "source": "urn:lo:nsid:android:357329073120059P/RIMARY"
  },
  "streamId": "android357329073120059P/RIMARY",
  "created": "2018-09-04T15:55:54.742Z",
  "extra": null,
  "location": {
    "provider": null,
    "alt": null,
    "accuracy": null,
    "lon": 2.29673,
    "lat": 48.80242
  },
  "model": "demo",
  "id": "5b5eab8a7676a76f44031e4f",
  "value": {
    "nevmin": 5858,
    "CO2": 544,
    "doorOpen": false,
    "hygrometry": 68,
    "temperature": 90,
    "pressure": 1088
  },
  "timestamp": "2018-09-04T15:55:54.740Z",
  "tags": null
}
```

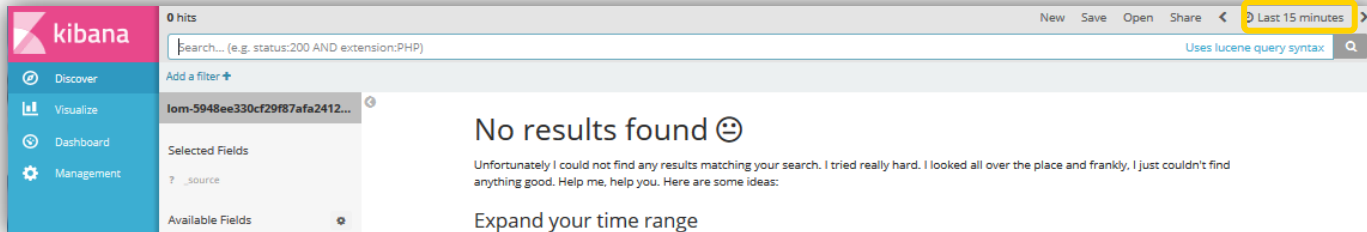


Kibana : small tricks that saves time 1/2

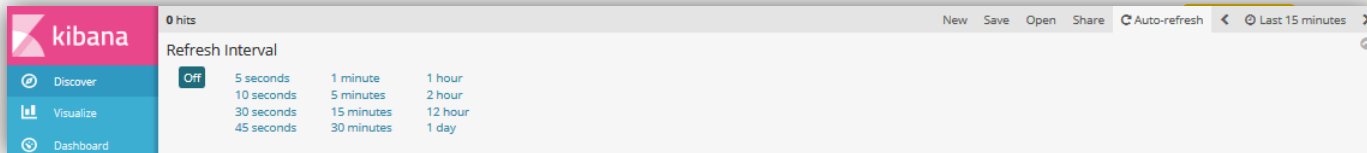
Go to the « Data » zone, click on Kibana button



1) No data : check the time range (default last 15mn)



2) Auto-refresh option





Kibana : small tricks that saves time 2/2

3) Still No data : it can be because of a new data model that has not been indexed => Go to the settings and refresh the index

The screenshot shows the Kibana Management interface for the index pattern `lom-5948ee330cf29f87afa24127-*`. The 'Refresh field list' button is highlighted with a yellow box. The page displays a table of fields with their associated core types and various properties.

Management / Kibana

Index Patterns Saved Objects Advanced Settings

★ lom-5948ee330cf29f87afa24127-*

Time Filter field name: timestamp

This page lists every field in the `lom-5948ee330cf29f87afa24127-*` index and the field's associated core type as recorded by Elasticsearch. While this list allows you to view the core type of each field, changing field types must be done using Elasticsearch's [Mapping API](#).

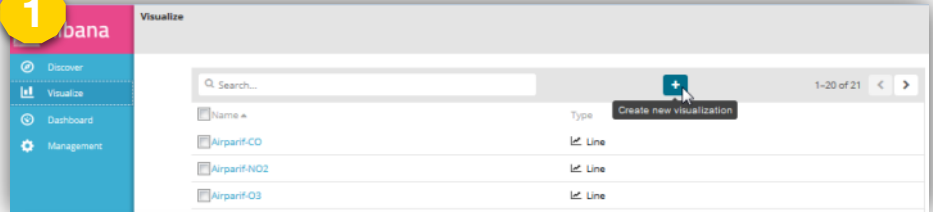
fields (296) scripted fields (0) source filters (0)

Filter All field types

name	type	format	searchable	aggregatable	excluded	controls
@ModelOABDemoApp00.value.hygrometry	number		✓	✓		
@ModelOABDemoApp00.value.revmin	number		✓	✓		
@ModelOABDemoApp00.value.temperature	number		✓	✓		
@ModelUDPToMQTT.value.UDPData	string		✓	✓		
@ModelUDPToMQTT.value.UDPDataHex	string		✓	✓		
@ModelUDPToMQTT.value.UDPDataStr	string		✓	✓		
@Sample02.value.DoorOpen	boolean		✓	✓		
@Sample02.value.DoorOpenDuration	number		✓	✓		
@Sample02.value.Hygrometry	number		✓	✓		
@Sample02.value.Speed	number		✓	✓		
@Sample02.value.engineOn	boolean		✓	✓		
@Sample02.value.tempC	number		✓	✓		
@Sample03.value.DoorOpen	boolean		✓	✓		

Kibana : Build visualizations

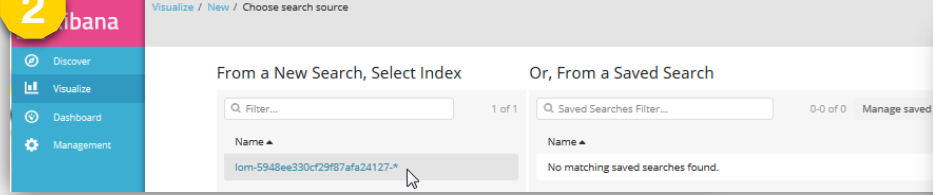
1



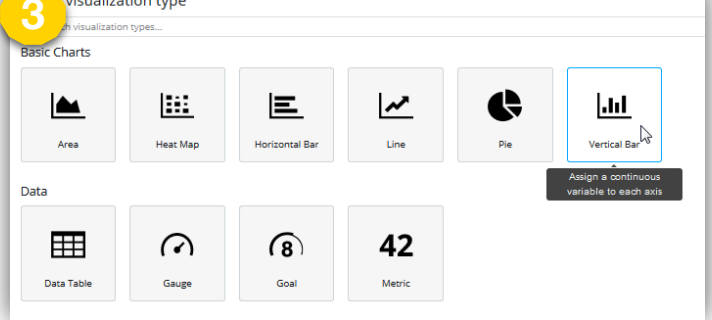
4

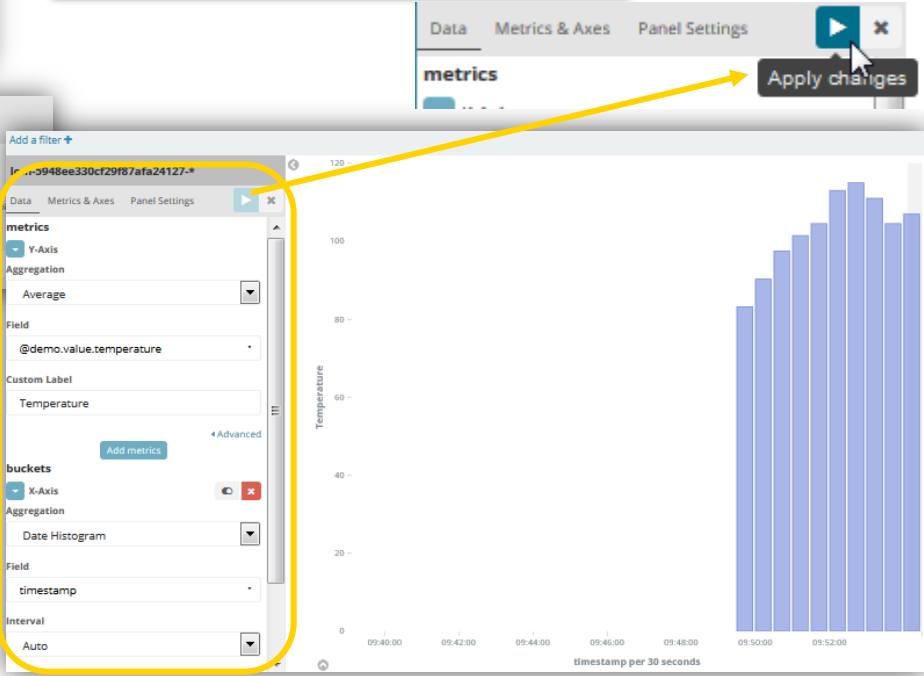
Select data sources for Y axis
Select timestamp for X axis
Click on « Apply changes »

2



3







Kibana : Build visualizations

Define ranges for the Rpm + sub aggregation on hygrometry

Data **Options** ▶ ⏏ ⏏ ⏏

metrics

+ Slice Size Count

buckets

+ Split Slices ⏏ ⏏ ⏏

Aggregation ▼

Range

Field ▼

@demo.value.revmin

From To

0	2000	⏏
2000	4000	⏏
4000	5000	⏏
5000	6000	⏏
6000	7000	⏏
7000	8000	⏏
8000	9000	⏏
9000	10000	⏏

Add Range

Sub Aggregation

Range

Field ▼

@demo.value.hygrometry

From To

0	30	⏏
30	60	⏏
60	100	⏏

Add Range

Custom Label

Hygrometry

Add Range

Data **Options** ▶ ⏏ ⏏ ⏏

metrics

+ Slice Size Count

buckets

+ Split Slices ⏏ ⏏ ⏏

Aggregation ▼

Range

Field ▼

@demo.value.revmin

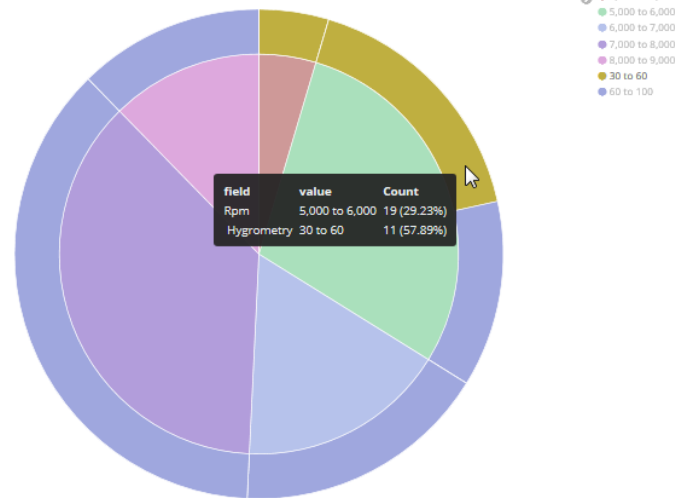
From To

0	30	⏏
30	60	⏏
60	100	⏏

Add Range

Custom Label

Hygrometry



Pie chart

My first steps... with SMS

#3.1

Select “SMS” into the device list

Orange Business Services

Orange Partner

EN



Dashboard

Devices

Data

Configuration

Simulation

Prototype







FranckChezOrange

Live Objects

Devices > MSISDNs

SMS

Managed/MQTT

LWM2M

SMS

+ Add device

Choose the 'SMS server - content decoder' couple for which to see declared MSISDNs.

Server phone number

20259

Decoder

No decoder

Phone number of the device

33671278017

<

1

>

Feedback

43

Interne Orange



SMS device provisioning

Use this fields to display the list of devices based on their decoder type or server phone number. At the beginning the list is empty

Live Objects

Devices > MSISDNs

SMS

MSISDNs - No msisdn

Choose the 'SMS server - content decoder' couple for which to see declared MSISDNs.

Server phone number: 20259

Decoder: No decoder

☐ Phone number of the device

+ Add device

Click here to start adding devices

Use this fields to display the list of devices based on their decoder type or server phone number. At the beginning the list is empty

NB: Live Objects uses XMS hub enabler to work with Orange Countries GSM networks. The « Server phone number » is the short code that the devices will use to send SMS. This will have to be setup in the integration phase of Live Objects in the country



SMS

Choose the SMS server number to be used by the device (provisioned in the offer setting of the account)

SMS device provisioning

Choose a payload decoder. The list contains private decoder (created by the customer himself, or public (available for all customers)

Live Objects

Devices > MSISDNs > Add MSISDNs

Managed/MQTT

LoRa

LWM2M

SMS

device MSISDN provisioning for SMS service use

Server phone number *

20259

Decoder

No decoder

MSISDNs list *

33608090909

example: 33655443322



Cancel

Create

Click here to add the device. The button « Create » become clickable when at least one device is added. Click on « create » to validate the devices creation

Type the msisdn of the device with the international prefix (without « + »)

NB: Creation is made for all devices with the same Server number/decoder as specified. To create other devices with a different configuration (different decoder for example) repeat the process from the previous slide.



SMS device provisioning

Live Objects

Devices > MSISDNs

SMS

MSISDNs - 1 msisdn

Choose the 'SMS server - content decoder' couple for which to see declared MSISDNs.

Server phone number * 20259

Decoder No decoder

☐ Phone number of the device

☐ 33608090909

1

+ Add device

Two devices created with two different decoders. Ready to communicate !

Live Objects

Devices > MSISDNs

SMS

MSISDNs - 1 msisdn

Choose the 'SMS server - content decoder' couple for which to see declared MSISDNs.

Server phone number * 20259

Decoder arcueil

☐ Phone number of the device

☐ 33607681808

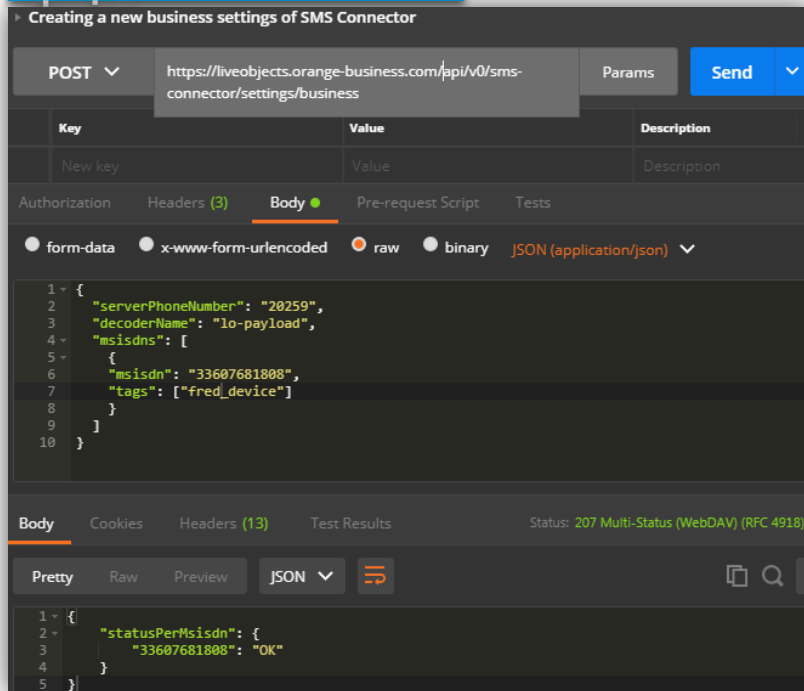
1

+ Add device



SMS device provisioning

Creating an SMS



#4

Manage my device park

Manage my device park

Currently available



Send commands, change configurations

Send a command to open a door
Ask a tracker to give its GPS coordinates to get a precise localisation



Update firmware of a device

Update the firmware of a device



Set up a Campaign

Manage actions on a fleet of devices



Silent devices

Go to “Use my data” chapter (⇔ event processing)



Group management

Organize my device fleet as a group hierarchy



... device details

Datavue FR

orange Dashboard Park Data Configuration Simulation Prototype ? ? ? ? ?

Live Objects

Park > MANAGED/MQTT > android / 357329073120059

Identity

Status

Parameters

Commands

Firmwares

android / 357329073120059

Identity

Name [Click to edit](#)

Identifier namespace: android / id: 357329073120059

URN urn:io:inside:android:357329073120059

Tags - [+](#)

Properties - [+](#)

Creation date 4 months ago

Datavue FR

orange Dashboard Park Data Configuration Simulation Prototype ? ? ? ? ?

Live Objects

Park > MANAGED/MQTT > android / 357329073120059 > Status

Identity

Status

Parameters

Commands

Firmwares

android / 357329073120059

Status online

Last contact a minute ago

Info

connection_start_time	2017-11-06T18:24:03.214Z
mqtt_timeout	20
mqtt_version	4
model	SM-G935F
mqtt_username	json+device
version	1.1.2
api_key_id	5a00a3c391fd99660b501cd2

Topic for parameters updates pubsub/~00befd2ea6504e35acd37779f7845e0

Topic for commands pubsub/~8f2a06bc8c2c4d0b95ecf169275e55ea

Topic for firmwares updates pubsub/~97757b0087cb4a8383bcc51b82a58823



... Sending a command

Datsavenue FR

orange Dashboard Park Data Configuration Simulation Prototype ? ? ? ? ?

Live Objects

Park > MANAGED/MQTT > android / 357329073120059 > Register new command

Identity

Status

Parameters

Commands

Firmwares

android / 357329073120059

Register new command

Namespace: android

Id: 357329073120059

Event: buzzer

Payload: enter the command payload non base64 encoded (ex: RC:98:A:1-AZ:EZEZA)

Data: {"key1":"","string_value1":"","key2":"","int_value2"}

Cancel Register

Orange F ... 44% 19:34

LO Asset

DÉCONNECTER

Configuration

Rafraichissement : 10 second(s)

Niveau de log : Info

Télémétrie Auto

107°

24%

388 rpm

Localisation commande Buzzer Reçue auto

Paramètres Simuler Ressources



Also in LoRa device downlink data

Datavue

orange Dashboard Park Data Configuration Simulation

Prototype 72

Live Objects

Park > LoRa > 70B3D59BA00004AE > Downlink

Status

Identity

Uplink

Downlink

70B3D59BA00004AE ✓

From To

+ Add command

☐	Date	Payload	Status	Port
☐	08/07/2017 1:58:18 PM	01	Sent	5
☐	08/04/2017 3:37:21 PM	01	Sent	5
☐	07/12/2017 7:10:43 PM	02	Sent	5
☐	07/10/2017 7:53:50 PM	01	Sent	5
☐	07/10/2017 7:53:38 PM	00	Sent	5
☐	05/29/2017 5:09:38 PM	87	Sent	4

Possibility to send a command

70B3D59BA00004AE ✓

Send Cancel

Register new command

Port *

5

☒ Confirmed

Enter the data in hexadecimal *

01

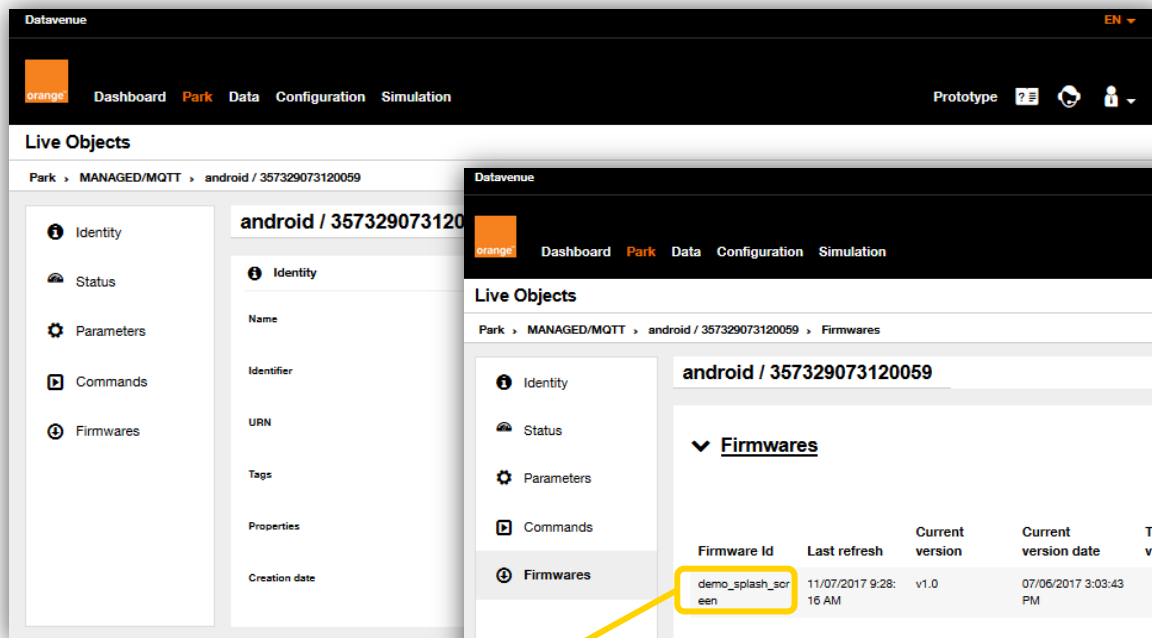
Confirmed means “received by network” not received by device



Get the device firmware Id

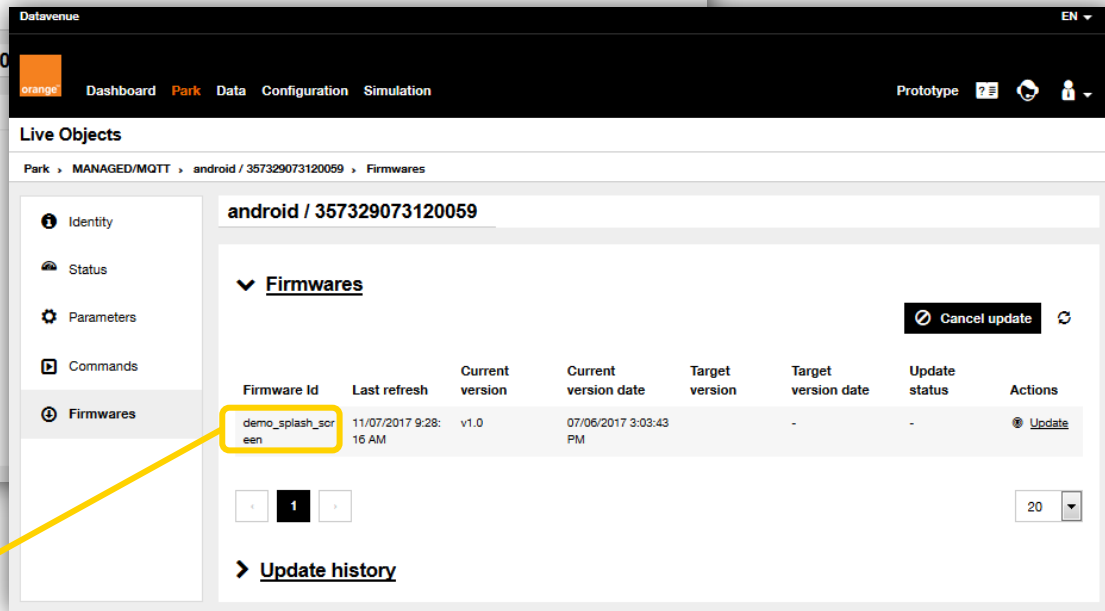
1

Step into the device properties => Firmware



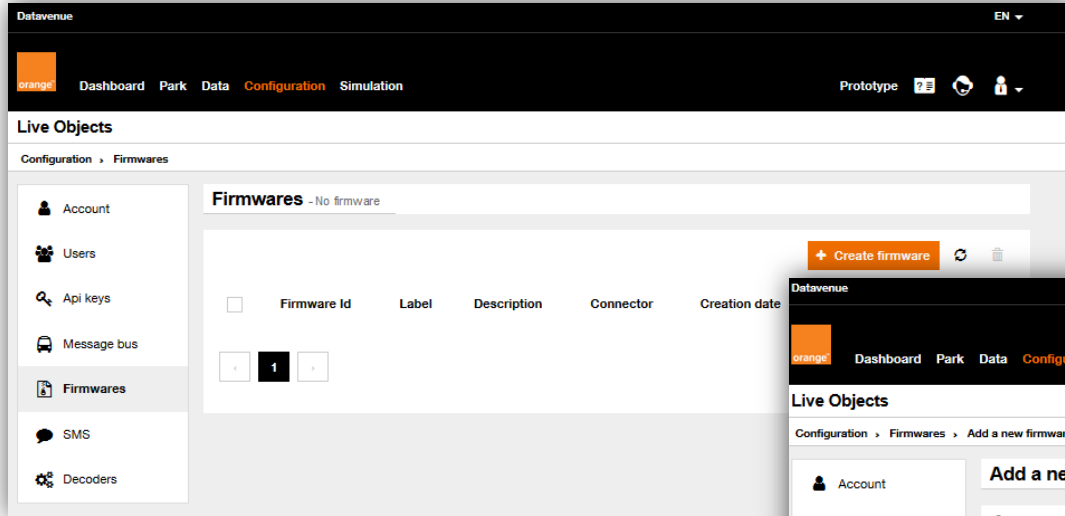
2

Get the firmware Id :
« demo_splash_screen »





Create a new firmware version 1/2



Step into Configuration/
Firmware => Create

- Put the current firmware Id
- Choose the « http-updater » connector

Add a new firmware

Information

Firmware Id * demo_splash_screen

Label enter the new firmware's caption

Description enter the new firmware's description

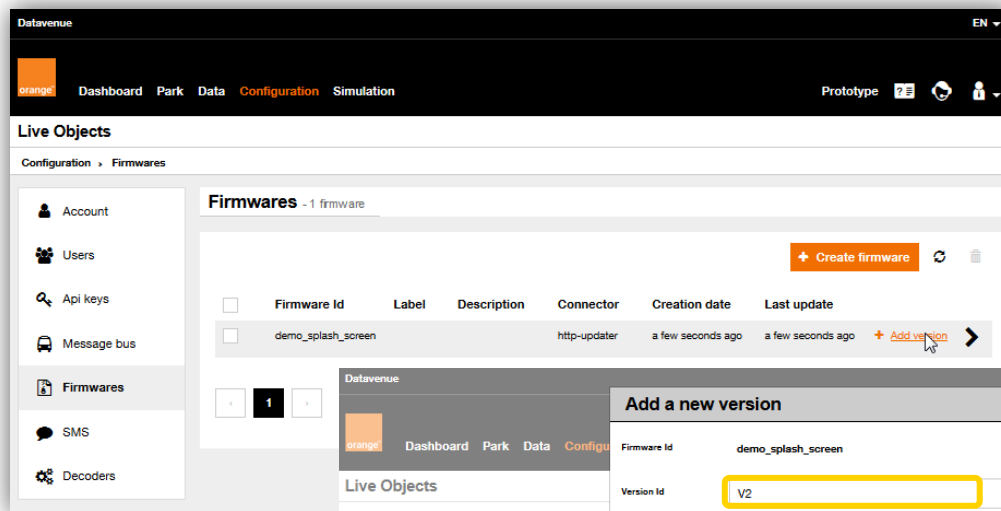
Connector * http-updater

Cancel Create a new firmware

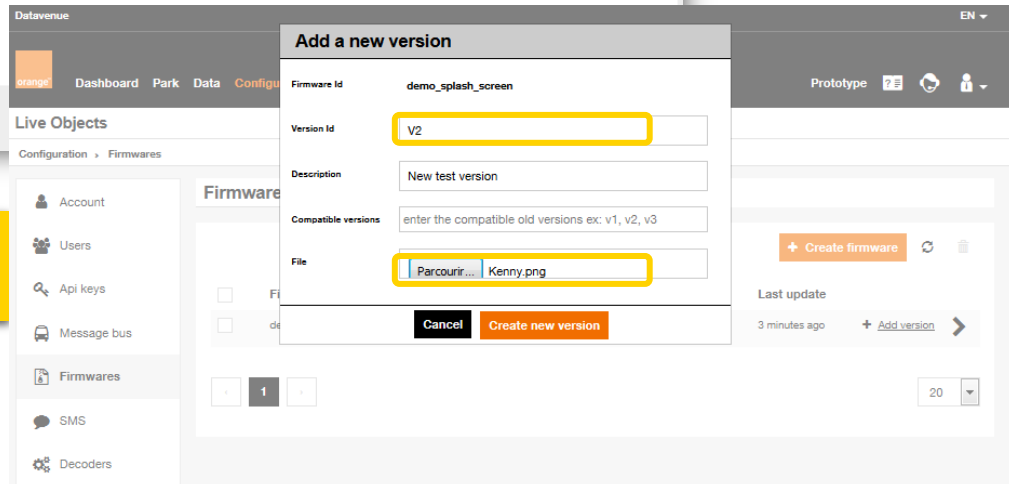


Create a new firmware version 2/2

Click « Add version »



Enter the new version Id
Choose the file (it must be < 15Kb)





Set the update rule 1/2

- Come back to the Park/
targeted device/ Firmware
- Click « Update »

The screenshot shows the Orange Web Portal interface. The top navigation bar includes 'Dashboard', 'Park', 'Data', 'Configuration', and 'Simulation'. The 'Park' tab is active. Below the navigation bar, the 'Live Objects' section is visible. The breadcrumb trail is 'Park > MANAGED/MQTT > android / 357329073120059 > Firmwares'. The main content area is titled 'android / 357329073120059' and contains a section for 'Firmwares'. A table lists the firmware details:

Firmware Id	Last refresh	Current version	Current version date	Target version	Target version date	Update status	Actions
demo_splash_screen	11/07/2017 9:28:16 AM	v1.0	07/06/2017 3:03:43 PM	-	-	-	Update

Below the table, there is a pagination control showing '1' and a dropdown menu set to '20'. At the bottom, there is a link for 'Update history'.



Set the update rule 2/2

Select the targeted version

Set firmware's target version

Target version

V2

Cancel

Save

The new version is pending, waiting for the device connection

orange Dashboard Park Data Configuration Simulation Prototype ? ? ? ?

Live Objects

Park > MANAGED/MQTT > android / 357329073120059 > Firmwares

android / 357329073120059

Identity

Status

Parameters

Commands

Firmwares

▼ Firmwares

Firmware Id	Last refresh	Current version	Current version date	Target version	Target version date	Update status	Actions
demo_splash_screen	11/07/2017 9:28:16 AM	v1.0	07/06/2017 3:03:43 PM	V2	11/15/2017 9:09:56 AM	PENDING - 0%	Update

< 1 >

20

[Update history](#)

[Cancel update](#)

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EN

 Dashboard **Devices** Data Configuration Simulation

Prototype     FranckChezOrange

Live Objects

Devices > Campaigns

Managed/MQTT

 Devices

 Campaigns

Campaigns

ScheduledOngoingCompleted

+ Create a campaign

☐	Creation date	Name	Progress	Failures	Ending date
☐	04/27/2018 6:37:00 PM	My Campaign Android Franck upx	0/1	-	07/20/2119 5:23:11 PM



Create a MQTT Campaign

Orange Business Services Orange Partner EN ▾

Dashboard Devices Data Configuration Simulation Prototype ? ? ? FranckChezOrange ▾

Live Objects

Devices > Campaigns > Create > Target devices

1. Target devices

2. Operations

3. Planning

Select the target devices for this campaign by importing a CSV file ?

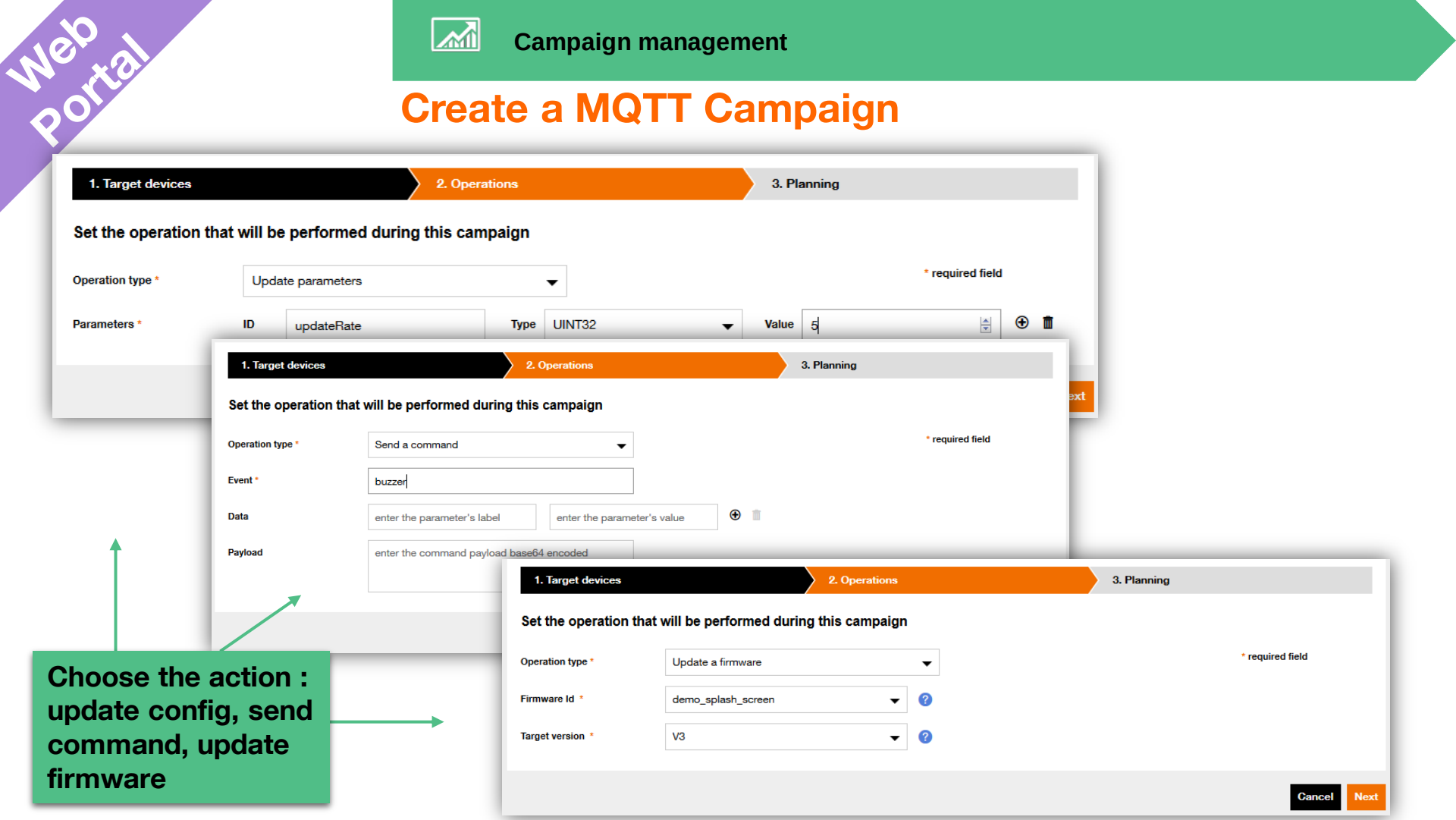
Import

Download a sample

Cancel Next

Fill the list of the targeted devices into a CSV file and import it

A2 ▾		fx		urn:lo:nsid:android:357329073120059PRIMARY			
	A	B	C	D	E	F	G
1	urn						
2	urn:lo:nsid:android:357329073120059PRIMARY						
3	urn:lo:nsid:android:357329073120059SECONDARY						
4							



Create a MQTT Campaign

1. Target devices

2. Operations

3. Planning

Set the operation that will be performed during this campaign

Operation type * * required field

Parameters *

ID	Type	Value
updateRate	UINT32	5

1. Target devices

2. Operations

3. Planning

Set the operation that will be performed during this campaign

Operation type * * required field

Event *

Data

enter the parameter's label	enter the parameter's value
-----------------------------	-----------------------------

Payload

enter the command payload base64 encoded

1. Target devices

2. Operations

3. Planning

Set the operation that will be performed during this campaign

Operation type * * required field

Firmware Id * ?

Target version * ?

Cancel

Next

Choose the action :
update config, send
command, update
firmware



Create a MQTT Campaign

Define a schedule

1. Target devices 2. Operations 3. Planning

Select a name and a processing date range for this campaign

Name * * required field

Start date * :

End date * :

The campaign will be launched from the starting date

Live Objects

Devices > Campaigns

Managed/MQTT

Campaigns	
Scheduled Ongoing Completed	
☐	
Creation date	Name
☐	04/27/2018 6:37:00 PM My Campaign Android Franck upx
☐	06/13/2018 5:08:12 PM test 13 06

Progress	Failures	Ending date
0/1	-	07/20/2119 5:23:11 PM
0/2	-	06/14/2018 12:00:00 AM



Create a MQTT Campaign

The campaign will be launched from the starting date

Live Objects

Devices > Campaigns

Managed/MQTT

Devices

Campaigns

Campaigns

Scheduled Ongoing Completed

☐	Creation date	Name	Progress	Failures	Ending date
☐	04/27/2018 6:37:00 PM	My Campaign Android Franck upi	0/1	-	07/20/2119 5:23:11 PM
☐	06/13/2018 5:08:12 PM	test 13 06	0/2	-	06/14/2018 12:00:00 AM



+ Create a campaign

Devices

Campaigns

test 13 06 - Devices - Running

Progress

Success

0 devices

0%

Failure

0 devices

0%

In progress

2 devices

100%

Not started

0 devices

0%

All devices

2 servers

Device	Status	Failed	Duration	Last date status
umfsmalandroid.35732607312005955	In progress			06/13/2018 5:08:12 PM
umfsmalandroid.35732607312005956	In progress			06/13/2018 5:08:12 PM

1

20

Operation

Operation type

Firmware update

Resource id

demo_tplash_screen

Target version

1/2

Planning

Date Range

06/13/2018 12:00:00 AM - 06/14/2018 12:00:00 AM



Create a MQTT Campaign

POST `{{httpHost}}/api/v0/deviceMgt/campaigns` Params Send Save

Authorization Headers (3) Body Pre-request Script Tests Code

☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary JSON (application/json)

```
1 {
2   "description": "A campaign that configures parameters, sends command or updates a resource",
3   "name": "My Campaign Android Franck",
4   "operations": [
5     {
6       "action": "configure",
7       "definition": {
8         "assetParameters": {
9           "updateRate": {
10            "type": "INT32",
11            "valueInt32": 10
12          }
13        }
14      }
15    },
16    {
17      "action": "command",
18      "definition": {
19        "event": "buzzer"
20      }
21    }
22  ],
23  "planning": {
24    "startDate": "2018-01-18T09:23:11Z",
25    "endDate": "2119-07-20T15:23:11Z"
26  },
27  "targets": {
28    "deviceId": "urn:lo:nsid:android:357329073120059"
29  }
30 }
31
32
33
```

Campaign planning

Config : change the update rate

Command : send a « buzzer »

Device list : My MQTT Android app



Create a MQTT Campaign : the result

```
Body    Cookies    Headers (14)    Test Results    Status: 201 Created    Time: 97 ms

Pretty    Raw    Preview    JSON    Save Response

1  {
2    "id": "bca1ce3e3f7145c0916c4ed228232319",
3    "name": "My Campaign Android Franck",
4    "description": "A campaign that configures parameters, sends command or updates a resource",
5    "planning": {
6      "startDate": "2018-01-18T09:23:11Z",
7      "endDate": "2119-07-20T15:23:11Z"
8    },
9    "target": {
10     "idList": [
11       "urn:lo:nsid:android:357329073120059"
12     ]
13   },
14   "operations": [
15     {
16       "action": "configure",
17       "definition": {
18         "assetParameters": {
19           "updateRate": {
20             "type": "INT32",
21             "valueInt32": 10
22           }
23         }
24       },
25     },
26     {
27       "action": "command",
28       "definition": {
29         "event": "buzzer"
30       }
31     }
32   ],
33   "numberOfTargets": 1,
34   "totalTargetsPerStatus": {
35     "notStarted": 1,
36     "pending": 0,
37     "success": 0,
38     "failure": 0
39   },
40   "campaignStatus": "SCHEDULED",
41   "created": "2018-01-16T18:15:08.310Z",
42   "updated": "2018-01-16T18:15:08.310Z"
43 }
```

SCHEDULED

The campaign has not yet started

RUNNING

The campaign is in progress

COMPLETE

The campaign is finished and all devices have properly been configured

INCOMPLETE

The campaign is finished but some devices could not be configured

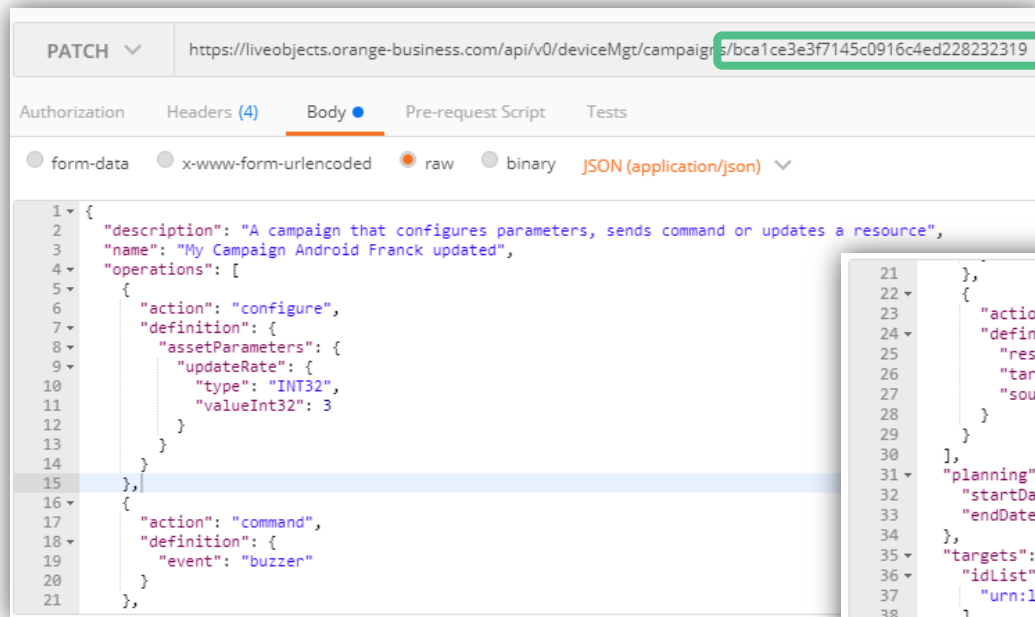
SERVER_ERROR

An internal error occurred in the platform and the campaign could not be completed

**Scheduled : not started
and can be updated**



Create a MQTT Campaign : Update – add firmware update



Use de Campaign Id



Add a firmware update

Launch ASAP =>
The status will be
"Running"



Organize my device fleet as a group hierarchy

Manage a hierarchical device tree with the portal

Create new groups into the tree

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Dashboard Devices Data Configuration Simulation

Prototype ? ? ? FranckChezOrange

Live Objects

Devices > Managed/MQTT > france

Managed/MQTT

Devices

Campaigns

All devices

- France
 - Paris
- Romania
 - Bucarest

1 device.

Add filters

- Add subgroup
- Edit
- Delete

Name	Namespace	Id	Group	Tags
Auto-created device (mqtt / urn:lo:nsid:android:0000000000000000)	android	0000000000000000	.../paris	

Move devices into the tree

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Dashboard Devices Data

Prototype ? ? ? FranckChezOrange

Move selection to

Destination

select a group

- root
- france
- paris
- romania
- bucarest

Name	Namespace	Id	Group	Tags	Status	Last contact	Path
Auto-created device (mqtt / MQTT_FX_Client)	mqtt	MQTT_FX_Client	/		Offline	2 months ago	direct o
Auto-created device (mqtt / urn:lo:nsid:android:0000000000000000)	android	0000000000000000	.../paris		Offline	5 minutes ago	direct o
Auto-created device (mqtt / urn:lo:nsid:android:123456789012345)	android	123456789012345	/		Offline	2 months ago	direct o
Auto-created device (mqtt / urn:lo:nsid:android:357329073120059)	android	357329073120059	/	testtest	Online	20 hours ago	direct o

Feedback



Organize my device fleet as a group hierarchy

2 Sets of API to manage Groups and device assignment

You can create/update/delete/list groups

Device management - Groups - V1 : Group management

Show/Hide | List Operations | Expand Operations

GET	/api/v1/deviceMgt/groups	List registered groups
POST	/api/v1/deviceMgt/groups	Create a new group
DELETE	/api/v1/deviceMgt/groups/{groupId}	Delete a specific group
GET	/api/v1/deviceMgt/groups/{groupId}	Get a specific group
PUT	/api/v1/deviceMgt/groups/{groupId}	Update group inventory

You can assign groups to the devices

Device management - Inventory - V1 : Devices inventory

Show/Hide | List Operations | Expand Operations

GET	/api/v1/deviceMgt/devices	List registered devices status
POST	/api/v1/deviceMgt/devices	Create a new device into the device manager
DELETE	/api/v1/deviceMgt/devices/{deviceId}	Delete a device
GET	/api/v1/deviceMgt/devices/{deviceId}	Get a device
PATCH	/api/v1/deviceMgt/devices/{deviceId}	Update a device

#5 Use my data

Use my data

Currently available

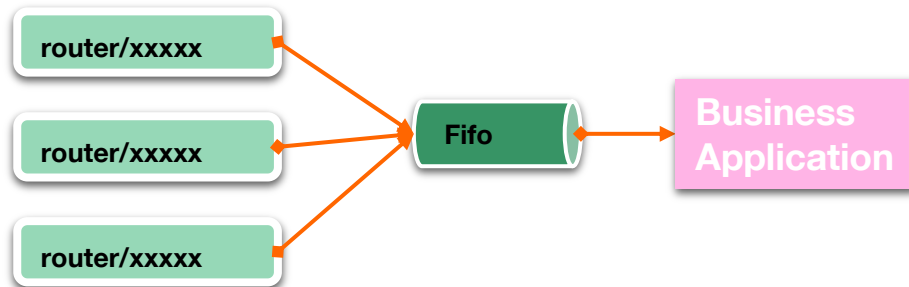
	FIFO	Retrieve my data in a business application using MQTT or Rest via queues (FIFO)
	Decoders	Create or use decoders to structure and index LoRa object data
	Data management	Perform Complex Queries (BI) on my indexed data with Elastic Search
	Event/state processing	Create rules for triggering alerts on object data sent to the business application
	Notifications & Event to Action	Live Objects or the business application can send SMS, email or push Http notifications following an event
	Silent devices	Create alarms on unexpected device behavior



The Fifo

Benefit : it guarantees that the messages are delivery to the Application. Messages are stored in a queue on disk until consumed and acknowledged

- 1) Create the Fifo
- 2) Create links between routes and the Fifo



The Fifo don't replicate the messages for each consumer : if 2 Business applications consume the same Fifo, each of them will share a random distribution of the messages



Creating a Fifo

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orange Dashboard Devices Data Configuration Simulation Prototype ? ? ? FranckChezOrange

Live Objects

Configuration > Message bus

Account

Users

Api keys

Message bus

Firmwares

Decoders

Message bus

FIFO queues Routing keys

+ Add

C

☐	FIFO	Message ready	Message unacked	# of consumers	Max size	Used %
☐	testFifo	16974 (7564038 bytes)	0 (0 bytes)	0	10 Mbytes	72%

<

1

>

20

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Live Objects

Configuration > Message bus

Account

Users

Api keys

Message bus

Firmwares

Decoders

Message bus

FIFO queues Routing keys

+ Add

	FIFO	Message ready	Message unacked	# of consumers	Max size	Used %
☐	testFifo	16974 (7564038 bytes)	0 (0 bytes)	0	10 Mbytes	72%
☐	testFifo2	0 (0 bytes)	0 (0 bytes)	0	10 Mbytes	0%

< 1 >

20



Restrict an API Key to a Fifo

Goal : Provide to 3rd parties an API Key with a restricted access

The screenshot shows the Orange web portal interface for managing API keys. The navigation bar includes 'Dashboard', 'Devices', 'Data', 'Configuration', and 'Simulation'. The user is logged in as 'FranckChezOrange'. The current view is 'Configuration > Api keys > testflg'.

On the left sidebar, the 'Api keys' menu item is selected. The main content area displays the configuration for the 'testflg' API key. It includes buttons for 'Regenerate', 'Disable', and 'Delete'. The 'Information' section shows the following details:

- Name: testflg
- Status: Enabled
- Description: Child of MasterKey
- Value: The api key value is hidden for security reasons
- Creation: 04/25/2018 10:42:13 AM (2 months ago)
- Last activity: 04/25/2018 10:42:13 AM (2 months ago)

The 'Queues restriction' field is set to 'testFifo'. A dropdown menu is open for the 'Valid from' field, showing options 'testFifo' and 'testFifo2'. A blue arrow points from the goal text to the 'testFifo2' option in the dropdown.



Payload to be decoded

123220

to this

Result

```
{  
  "lightsensor": 18,  
  "leds": 50,  
  "temp": 32  
}
```

3 kinds of decoders available

Binary

- Bit per bit decoding

- Bit per bit decoding
- Depending on the device behavior
- For devices with variable payload
- Customers can develop their own decoder

CSV

- Byte per byte decoding

JavaScript

- For devices with complex behavior
- For devices with variable payloads
- JS decoders must be qualified only by Live Objects team

Decoders created by the users

Decoders published by Orange cannot be modified

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Dashboard

Devices

Data

Configuration

Simulation

Prototype

ZZZ Equipe LOM

Live Objects

Configuration > Decoders

Account

Users

Api keys

Message bus

Firmwares

Decoders

Decoders - 42 decoders

Select a decoder type

+

Add

	Name	Type	Model	State	Visibility
☐	LoRaDemonstrator	Parameterized (Binary)		Enabled	Private
☐	LoRaDemonstratorTemp	Parameterized (Binary)		Enabled	Private
☐	StarterKit	Parameterized (Binary)		Enabled	Private
☐	sagemcom_siconia_v0	Parameterized (Binary)		Enabled	Private
☐	StarterKitLight	Parameterized (Binary)		Enabled	Private
☐	LoRaMoteV0	Parameterized (Binary)	LoRaMoteV0	Enabled	Private
☐	StarterKitLightv2	Parameterized (Binary)		Enabled	Private
...					
☐	ercogener_eg1114_v1.0	Predefined (Script)	model_ercogener_1114_v1	Enabled	Public
☐	meitrack_t355_v1.0	Predefined (Script)	model_meitrack_t355_v1	Enabled	Public
☐	ascoel_ir668r_v1.0	Predefined (Script)	model_ascoel_ir668r_v1	Enabled	Public
☐	adeunis_arf8180ba_v1.0	Predefined (Script)	model_adeunis_arf8180ba_v1	Enabled	Public
☐	atim_acw_th_v1.0	Predefined (Script)	model_atim_acw_th_v1	Enabled	Public

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orange

Dashboard

Devices

Data

Configuration

Simulation

Prototype

ZZZ Equipe LOM

Live Objects

Configuration > Decoders

Account

Users

Api keys

Message bus

Firmwares

Decoders

Decoders - 42 decoders

Select a decoder type

+ Add

	Name	Type	Model	State	Visibility
☐	LoRaDemonstrator	Parameterized (Binary)		Enabled	Private
☐	LoRaDemonstratorTemp	Parameterized (Binary)		Enabled	Private
☐	StarterKit	Parameterized (Binary)		Enabled	Private
☐	sagemcom_siconia_v0	Parameterized (Binary)		Enabled	Private
☐	StarterKitLight	Parameterized (Binary)		Enabled	Private
☐	LoRaMoteV0	Parameterized (Binary)	LoRaMoteV0	Enabled	Private
☐	StarterKitLightv2	Parameterized (Binary)		Enabled	Private



Creating and testing a binary decoder

Example based on a 3 Bytes payload :
38AAFF

to be structured into a 4 fields

bit:3 test3;
bit:5 test5;
byte pressure;
byte temperature;

and to be presented following this
template

```
"networkStat":{{test3}},  
"batStat":{{test5}},  
"pressure": "{{#math}}{{pressure}}+100{/math}} Pa",  
"temperature" :  
"{{#math}}{{temperature}}/10{/math}} celsius"  
}
```

Datavue

orange Dashboard Park Data Configuration Simulation

Prototype ? ? ? ? ?

Live Objects

Configuration > Decoders > Add a decoder

Account
Users
Api keys
Message bus
Firmwares
Decoders

Add a decoder

Decoder information * required

Encoding *
TestFranck3

Type *
Binary

Binary payload description *

bit:3 test3;
bit:5 test5;
byte pressure;
byte temperature;

Template

```
{  
  "networkStat":{{test3}},  
  "batStat":{{test5}},  
  "pressure": "{{#math}}{{pressure}}+100{/math}} Pa",  
  "temperature" :  
  "{{#math}}{{temperature}}/10{/math}} celsius"  
}
```

Decoder test

Payload to be decoded
38AAFF

Test

Result

```
{  
  "networkStat": 0,  
  "temperature": "-0.1 celsius",  
  "batStat": 7,  
  "pressure": "14.0 Pa"  
}
```

Test the decoder

Cancel Create



Retreive time series data

Datavenue EN

orange Dashboard Park Data Configuration Simulation Prototype

Live Objects

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Data management data search : APIs to search through injected data

Show/Hide | List Operations | Expand Operations

POST	/api/v0/data/search	Query an Elasticsearch Domain Specific Language request
POST	/api/v0/data/search/hits	Query an Elasticsearch Domain Specific Language request and get only hits result

Data management data store : APIs to store and retrieve data

Show/Hide | List Operations | Expand Operations

GET	/api/v0/data/streams/{streamId}	Retrieve data from the streamId
POST	/api/v0/data/streams/{streamId}	Insert a new Data into the stream

Decoders : list all decoders for a tenant

Show/Hide | List Operations | Expand Operations

Decoders - CSV : CSV decoder provisioning

Show/Hide | List Operations | Expand Operations

Decoders - binary : binary decoder provisioning

Show/Hide | List Operations | Expand Operations

Decoders - public : public decoder management

Show/Hide | List Operations | Expand Operations

Device management asset resources : Resource Management

Show/Hide | List Operations | Expand Operations



Retreive time series data

Data management data store : APIs to store and retrieve data

GA* /api/v0/data/stores/{streamid}

[Return data from the streamid](#)

Implementation Notes
return an array of StoredDataMessage matching the request parameters.
Restricted to API keys with at least one of the following roles : DATA_R.

Response Class (Status 200)
array of StoredDataMessage matching the request parameters

Model: **Example Value**

```
{
  "created": "2016-08-27T00:00:00.000Z",
  "id": "string",
  "location": {
    "accuracy": 30,
    "alt": 5.00000,
    "lat": 40.000000,
    "lon": -20.00000,
    "provider": "GPS"
  }
}
```

Response Content Type: application/json

Parameters

Parameter	Value	Description	Parameter Type	Data Type
streamid	android357329073120059	Streamid from which the data will be retrieved	path	string
limit	100	max number of data to return, value is limited to 1000	query	integer
timeRange	Provide multiple values in new lines. The data whose timestamp is in timeRange (must be ISO 8601 formatted) : TimeRange (lowerbound,upperbound). Come is mandatory, lowerbound and upperbound are optional. Lowerbound is inclusive, upperbound is exclusive.		query	Array(string)
documentId		id of the last document retrieved that can be used to paginate : first result will be the one following the document id	query	string
X-API-KEY	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	valid API key	header	string

[Try it out](#) [View Response](#)

Request URL

```
https://liveobjects.orange-business.com/api/v0/data/stores/android357329073120059?limit=100
```

Response Body

```
{
  "id": "5a022299c74a4951f5518ec4",
  "streamId": "android357329073120059",
  "timestamp": "2017-11-07T21:16:09.861Z",
  "location": {
    "lat": 48.872815,
    "lon": 2.348264
  },
  "model": "Model10ABDemoApp00",
  "value": {
    "revmin": 4437,
    "hygrometry": 47,
    "temperature": 12
  },
  "tags": [
    "OABDemoApp.00"
  ],
  "metadata": {
    "..."
  }
}
```

Response Code

```
200
```

```
curl -X GET --header 'Accept: application/json' --header 'X-API-KEY: xxxxxxxxxxxxxxxxxxxxxxxxxxxx' 'https://liveobjects.orange-business.com/api/v0/data/stores/android357329073120059?limit=100'
```



Retreive time series data

Retrieve data from the streamId

GET `https://liveobjects.orange-business.com/api/v0/data/streams/android357329073120059?limit=100` Params Send Save

Authorization Headers (1) Body Pre-request Script Tests Code

Key	Value	Description
☒ X-API-KEY	[REDACTED]	
New key	Value	Description

Body Cookies Headers (15) Test Results Status: 200 OK Time: 2226 ms

Pretty Raw Preview JSON

```
1 [
2   {
3     "id": "5a022299c74a4951f5518ec4",
4     "streamId": "android357329073120059",
5     "timestamp": "2017-11-07T21:16:09.861Z",
6     "location": {
7       "lat": 48.872015,
8       "lon": 2.348264
9     },
10    "model": "ModelOABDemoApp00",
11    "value": {
12      "revmin": 4437,
13      "hygrometry": 47,
14      "temperature": 12
15    },
16    "tags": [
17      "OABDemoApp.00"
18    ]
19  }
20 ]
```

**Request : « 100 last data from the stream
Id : android357329073120059 »**



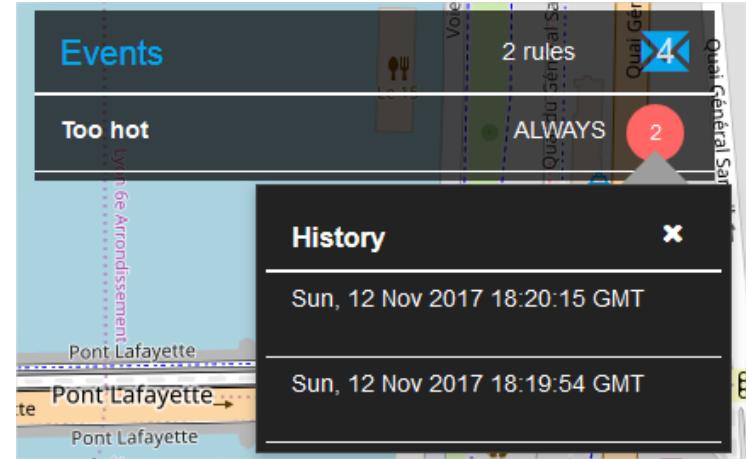
Configure matching and firing rules

to

Get events

Edit event rule

Name :	Too hot
Data :	Temperature
Operator :	Higher
Value :	25
Event Type :	ALWAYS
Notification :	☐ Activate : --- Select a notification rule ---



Event process = 1 matching & 1 firing rule

Matching rule	Define when the event occurs
Firing rule	Frequency function (firing rule) which defines when “event must be sent



Create a Matching Rule

POST ▼ https://liveobjects.orange-business.com/api/v0/eventprocessing/matching-rule Params Send ▼ Save ▼

Authorization Headers (2) Body ● Pre-request Script Tests Code

	Key	Value	Description	...	Bulk Edit	Presets ▼
☰	☒ X-API-KEY	xxxxxxxxxxxxxxxxxxxxxxxxxxxx				X
	☒ Content-Type	application/json				

Create the rule
“hygrometry < 20 and
temperature > 20”

POST ▼ https://liveobjects.orange-business.com/api/v0/eventprocessing/matching-rule Params Send ▼ Save ▼

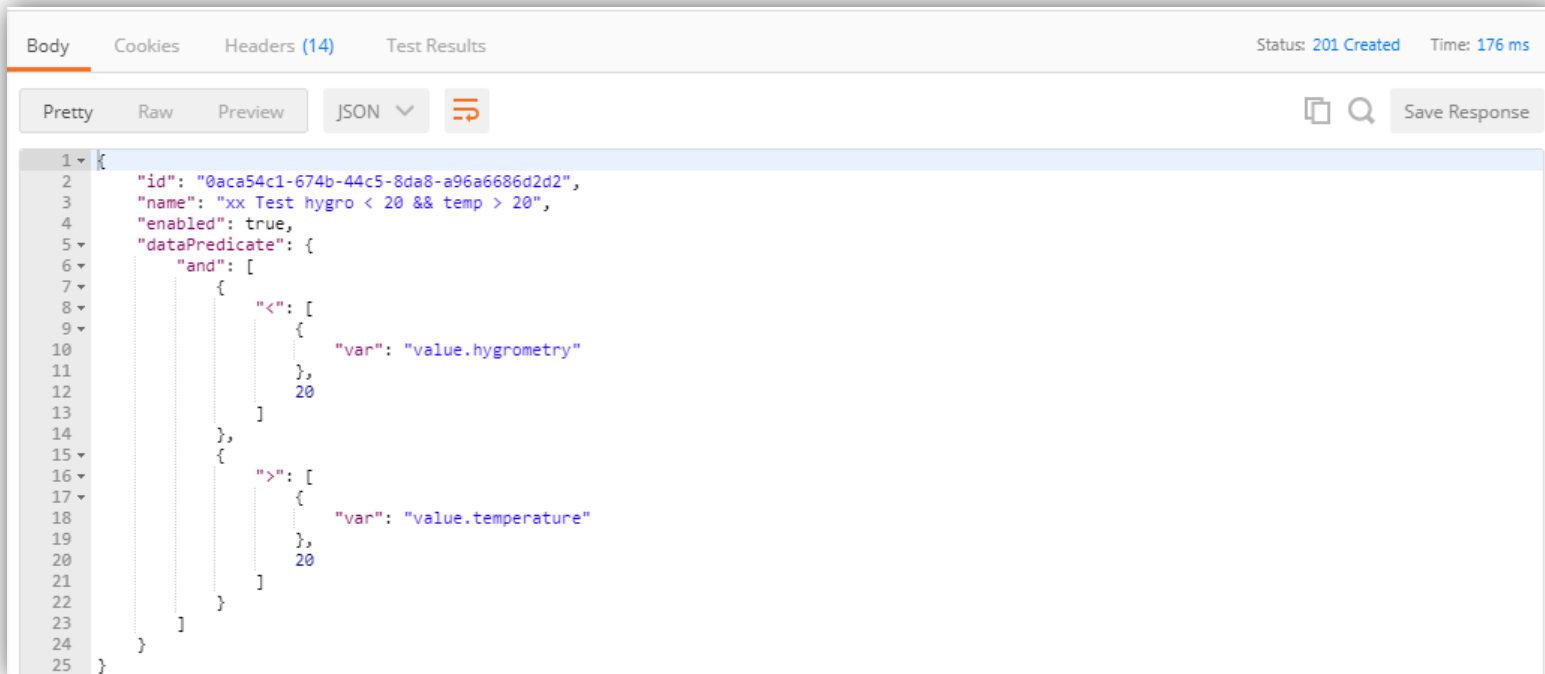
Authorization Headers (2) Body ● Pre-request Script Tests Code

☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary JSON (application/json) ▼

```
1 {
2   "dataPredicate":
3   {
4     "and":
5     [
6       {
7         "<": {
8           {
9             "var": "value.hygrometry"
10          },
11          20
12        }
13      },
14      {
15        ">": {
16          {
17            "var": "value.temperature"
18          },
19          20
20        }
21      }
22    ]
23  },
24  "enabled": true,
25  "name": "xx Test hygro < 20 && temp > 20"
26 }
27
28 }
```



Create a Matching Rule : the response





Retreive the list of Matching Rules

The screenshot displays two overlapping Postman windows. The top window shows a GET request to `https://liveobjects.orange-business.com/api/v0/eventprocessing/matching-rule` with headers `X-API-KEY` and `Content-Type: application/json`. The bottom window shows the JSON response for the same request.

Request Headers:

Key	Value	Description
X-API-KEY	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
Content-Type	application/json	

Response Body (JSON):

```
1 [
2   {
3     "id": "0aca54c1-674b-44c5-8da8-a96a6686d2d2",
4     "name": "xx Test hygro < 20 && temp > 20",
5     "enabled": true,
6     "dataPredicate": {
7       "and": [
8         {
9           "<": [
10            {
11              "var": "value.hygrometry"
12            },
13            20
14          ]
15        },
16        {
17          ">": [
18            {
19              "var": "value.temperature"
20            },
21            20
22          ]
23        }
24      ]
25    }
26  }
27 ]
```




Delete a Matching Rule

DELETE ☐ <https://liveobjects.orange-business.com/api/v0/eventprocessing/matching-rule/0aca54c1-674b-44c5-8da8-a96a66...> Params [Send](#) ☐ [Save](#) ☐

Authorization Headers (2) Body ☒ Pre-request Script Tests [Code](#)

	Key	Value	Description	...	Bulk Edit	Presets
☒	X-API-KEY	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx				

Put the Matching rule Id into the request



Create a Firing Rule

POST ▼ https://liveobjects.orange-business.com/api/v0/eventprocessing/firing-rule Params Send ▼ Save ▼

Authorization Headers (2) Body ● Pre-request Script Tests Code

	Key	Value	Description	...	Bulk Edit	Presets ▼
☒	X-API-KEY	xxxxxxxxxxxxxxxxxxxxxxxxxxxx				×
☒	Content-Type	application/json				

The Firing rule will trigger the events

This Firing rule will ALWAYS trigger the previously create Matching rule

Authorization Headers (2) Body ● Pre-request Script Tests Code

☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary JSON (application/json) ▼

```
1 {
2   "name": "testFR0StreamSample02",
3   "enabled": true,
4   "matchingRuleIds": ["0ace54c1-674b-44c5-8da8-a96a6686d2d2"],
5   "aggregationKeys": ["metadata.source"],
6   "firingType": "ALWAYS"
7 }
8
```

Firing rules type = frequency function which defines when "fired events" must be generated

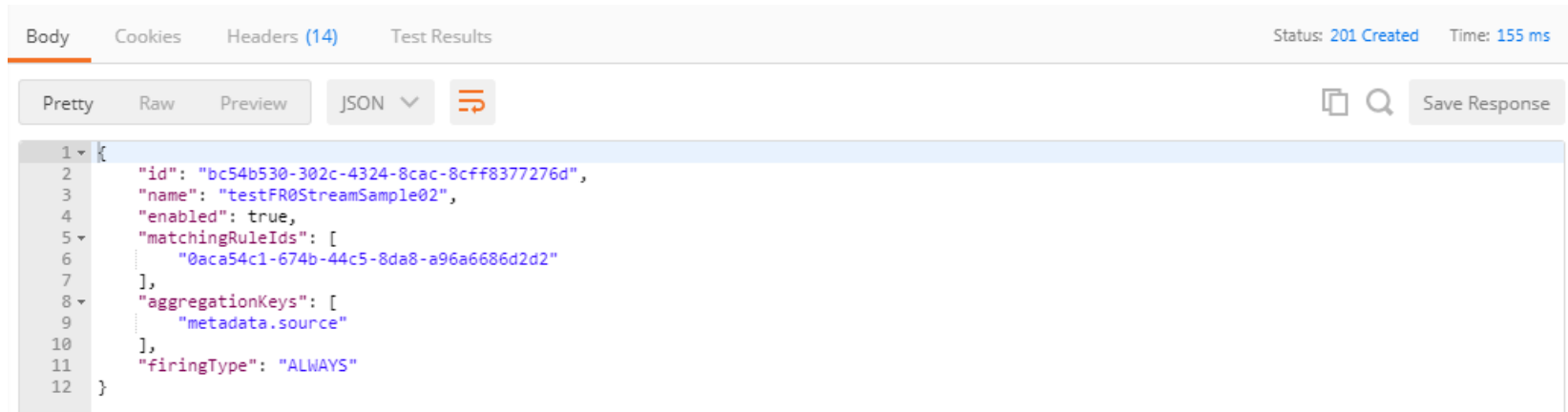
ONCE	Once only, firing guard must be removed to reactivate the rule
------	--

ALWAYS	Each time the match occurs
--------	----------------------------

SLEEP	Once only, then wait the sleep duration to automatically reactivate the rule
-------	--



Create a Firing Rule : the response





Retreive the list of Firing Rules

GET ▼ https://liveobjects.orange-business.com/api/v0/eventprocessing/firing-rule Params Send ▼ Save ▼

Authorization Headers (2) Body Pre-request Script Tests Code

	Key	Value	Description	***	Bulk Edit	Presets ▼
☒	X-API-KEY	xxxxxxxxxxxxxxxxxxxxxxxxxxxx				
☒	Content-Type	application/json				

GET ▼ https://liveobjects.orange-business.com/api/v0/eventprocessing/firing-rule Params Send ▼ Save ▼

Authorization Headers (2) Body Pre-request Script Tests Code

	Key	Value	Description	***	Bulk Edit	Presets ▼
☒	X-API-KEY	a9693915fac54fba85a646def7b0c42a				
☒	Content-Type	application/json				
	New key	Value	Description			

Body Cookies Headers (14) Test Results Status: 200 OK Time: 123 ms

Pretty Raw Preview JSON ▼ ≡ 🔍 📄 Save Response

```
1 [
2   {
3     "id": "bc54b530-302c-4324-8cac-8cff8377276d",
4     "name": "testFR0StreamSample02",
5     "enabled": true,
6     "matchingRuleIds": [
7       "0aca54c1-674b-44c5-8da8-a96a6686d2d2"
8     ],
9     "aggregationKeys": [
10      "metadata.source"
11    ],
12    "firingType": "ALWAYS"
13  }
14 ]
```



Event Processing : Test it !

Subscribe to : `route/~event/v1/data/eventprocessing/fired`

Event fired :

- type of firing rule : ALWAYS
- hygrometry < 80 and temperature > 20



router/~event/v1/data/eventprocessing/fired

3

QoS 0

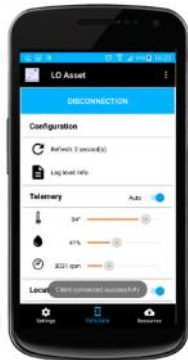
router/~event/v1/data/eventprocessing/fired

3

QoS 0

26-01-2018 18:57:55.68275983

```
{
  "tenantId": "5948ee330cf29f87afa24127",
  "timestamp": "2018-01-26T17:57:57.003Z",
  "firingRule": {
    "id": "b87900ce-16f8-4b37-a723-78d23635ab10",
    "name": "testFR0StreamSample02",
    "enabled": true,
    "matchingRuleIds": [
      "31826629-94a5-410c-ad6d-4c201ce47330"
    ],
    "aggregationKeys": [
      "metadata.source"
    ],
    "firingType": "ALWAYS",
    "matchingContext": {
      "tenantId": "5948ee330cf29f87afa24127",
      "timestamp": "2018-01-26T17:57:57.001Z",
      "matchingRule": {
        "id": "31826629-94a5-410c-ad6d-4c201ce47330",
        "name": "xx Test hygro < 80 && temp > 20",
        "enabled": true,
        "dataPredicate": {
          "and": [
            {
              "var": "value.hygrometry",
              "lt": 80
            },
            {
              "var": "value.temperature",
              "gt": 20
            }
          ]
        },
        "data": {
          "streamId": "android357329073120059",
          "timestamp": "2018-01-26T17:57:56.321Z",
          "location": {
            "lat": 45.76266,
            "lon": 4.83817,
            "model": "demo",
            "value": {
              "hygrometry": 55,
              "revmin": 5280,
              "temperature": 64
            },
            "metadata": {
              "source": "urn:lo:nsid:android:357329073120059",
              "connector": "mqtt"
            }
          }
        }
      }
    }
  }
}
```





Managing a Firing Guard : update the firing rule to the firing type « ONCE »

PUT ▼ https://liveobjects.orange-business.com/api/v0/eventprocessing/firing-rule-b87900ce-16f8-4b37-a723-78d23635ab10 Params Send ▼ Save ▼

Authorization Headers (2) Body ● Pre-request Script Tests Code

☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary JSON (application/json) ▼

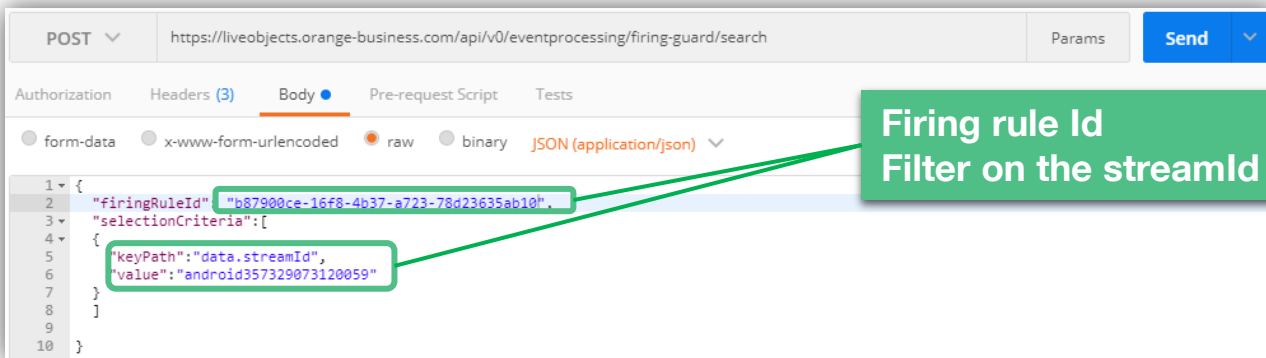
```
1 {
2   "aggregationKeys": [
3     "metadata.source"
4   ],
5   "enabled": true,
6   "firingType": "ONCE",
7   "id": "b87900ce-16f8-4b37-a723-78d23635ab10",
8   "matchingRuleIds": [
9     "31826629-94a5-410c-ad6d-4c201ce47330"
10  ],
11   "name": "Test hygro < 80 && temp > 20"
12 }
```

Set the firing type to "ONCE"



Managing a Firing Guard : get the list of firing guards

The request





Managing a Firing Guard : get the list of firing guards the response

Firing guard Id
Matching rule
Last triggered value

```
{
  "id": "b87900ce-16f8-4b37-a723-78d23635ab10-9403139ba9a13557e0e32ee7e47b1489",
  "firingRuleId": "b87900ce-16f8-4b37-a723-78d23635ab10",
  "tenantId": "5948ee330cf29f87a24127",
  "matchingContext": {
    "tenantId": "5948ee330cf29f87a24127",
    "timestamp": "2018-03-14T12:25:28.622Z"
  },
  "matchingRule": {
    "id": "31826629-94a5-410c-ad6d-4c201ce47330",
    "name": "xx Test hygro < 80 && temp > 20",
    "enabled": true,
    "dataPredicate": {
      "and": [
        {
          "<": [
            {
              "var": "value.hygrometry",
              "value": 80
            }
          ]
        },
        {
          ">": [
            {
              "var": "value.temperature",
              "value": 20
            }
          ]
        }
      ]
    }
  }
}
```

```
data: {
  "streamId": "android357329073120059",
  "timestamp": "2018-03-14T12:25:28.609Z",
  "location": {
    "lat": 45.76756,
    "lon": 4.83636
  },
  "model": "demo",
  "value": {
    "hygrometry": 9,
    "revmin": 8760,
    "temperature": 115
  },
  "metadata": {
    "source": "urn:lo:nsid:android:357329073120059",
    "connector": "mqtt"
  }
},
guardCriteria: [
  {
    "keyPath": "metadata.source",
    "value": "urn:lo:nsid:android:357329073120059"
  }
],
"created": "2018-03-14T12:25:28.625Z"
```




Delete the Firing Guard

Put the Firing guard Id into the request

DELETE `https://liveobjects.orange-business.com/api/v0/eventprocessing/firing-guard/``b87900ce-16f8-4637-a723-78d23635ab..` Params Send Save

Authorization Headers (3) Body Pre-request Script Tests Code

	Key	Value	Description	...	Bulk Edit	Presets ▼
☒	Accept	application/json				
☒	Content-Type	application/json				
☒	X-API-KEY	{{X-API-KEY}}				

The event will trigger « ONCE » again



Delete a Firing Rule

DELETE ▼ https://liveobjects.orange-business.com/api/v0/eventprocessing/firing-rule/bc54b530-302c-4324-8cac-8cff8377276d Params Send ▼ Save ▼

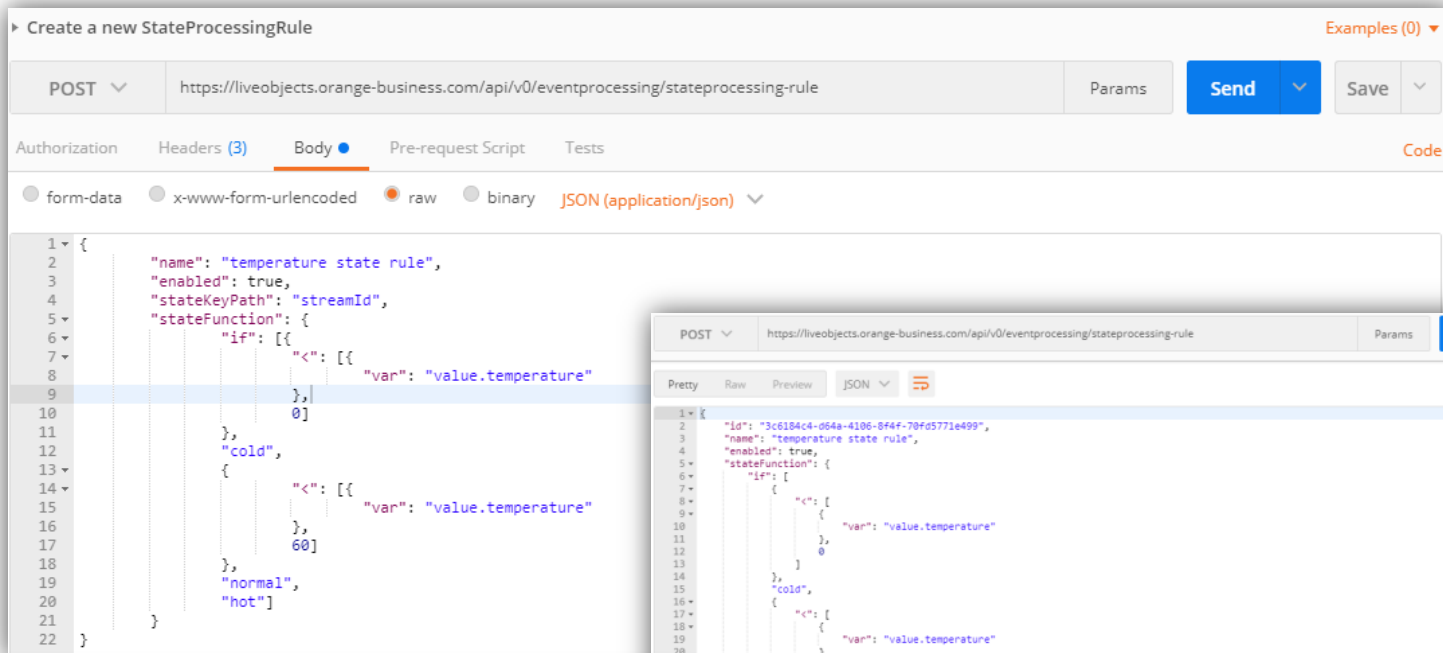
Authorization Headers (2) Body ● Pre-request Script Tests Code

	Key	Value	Description	...	Bulk Edit	Presets ▼
☒	X-API-KEY	xx				

Put the Firing rule Id into the request



State Processing : create a rule



Set 3 temperature ranges :

- Cold : temperature is below 0 degree
- Normal : if temperature is between 0 and 60 degrees
- Hot : temperature is higher than 60 degree

(*) Same header as Matching rules



State Processing : list rules

```
GET https://liveobjects.orange-business.com/api/v0/eventprocessing/stateprocessing-rule

Pretty Raw Preview JSON

1 [
2   {
3     "id": "3c6184c4-d64a-4106-8f4f-70fd5771e499",
4     "name": "temperature state rule",
5     "enabled": true,
6     "stateFunction": {
7       "if": [
8         {
9           "<": [
10            {
11              "var": "value.temperature"
12            },
13            0
14          ]
15        },
16        "cold",
17        {
18          "<": [
19            {
20              "var": "value.temperature"
21            },
22            60
23          ]
24        },
25        "normal",
26        "hot"
27      ]
28    },
29    "stateKeyPath": "streamId"
30  }
31 ]
```



State Processing : Test it !

Subscribe to :

router/~event/v1/data/eventprocessing/statechange



State changed from normal to cold, following the new temperature value (-11)



router/~event/v1/data/eventprocessing/statechange

1

QoS 0

router/~event/v1/data/eventprocessing/statechange

2

QoS 0

router/~event/v1/data/eventprocessing/statechange

1

QoS 0

26-01-2018 18:52:10.67930023

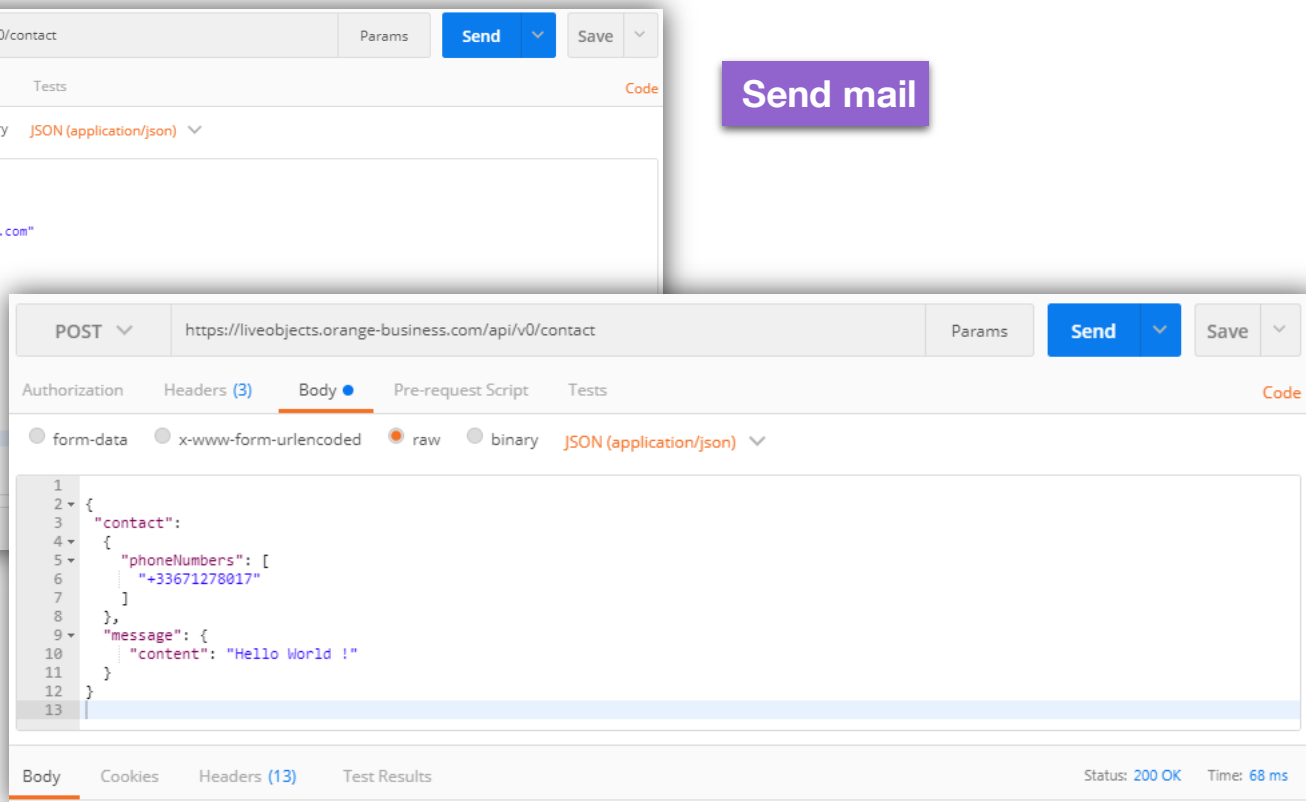
```
{
  "tenantId": "5948ee330cf29f87afa24127",
  "stateKey": "android357329073120059",
  "previousState": "cold",
  "newState": "hot",
  "timestamp": "2018-01-26T17:52:10.999Z",
  "stateProcessingRuleId": "5dd059d6-19c0-4150-a054-ccallcd9134",
  "data": {
    "streamId": "android357329073120059",
    "timestamp": "2018-01-26T17:52:10.992Z",
    "location": {
      "lat": 45.76302,
      "lon": 4.83817
    },
    "model": "demo",
    "value": {
      "hygrometry": 41,
      "revmin": 3304,
      "temperature": 93
    },
    "metadata": {
      "source": "urn:lo:nsid:android:357329073120059",
      "connector": "mqtt"
    }
  }
}
```



Send email and SMS notification

Send mail

Send SMS





Link actions to events

When Live Objects detects an event, it sends notifications without depending on another business application. Events works quickly and even if the business application is down.

Event to Action - Provisioning : Action policies management on event

		Show/Hide	List Operations	Expand Operations
GET	/api/v0/event2action/actionPolicies			List action policies
POST	/api/v0/event2action/actionPolicies			Create a new action policy
DELETE	/api/v0/event2action/actionPolicies/{policyId}			delete an action policy
GET	/api/v0/event2action/actionPolicies/{policyId}			retrieve an action policy
PUT	/api/v0/event2action/actionPolicies/{policyId}			Save or update an action policy



Create a new Action Policy to send Mail & SMS

POST ▼ https://liveobjects.orange-business.com/api/v0/event2action/actionPolicies Params Send ▼ Save ▼

Authorization Headers (3) Body ● Pre-request Script Tests Code

Key	Value	Description	...	Bulk Edit	Presets ▼
☒ Accept	application/json				
☒ Content-Type	application/json				
☒ X-API-KEY					

De: ☐ liveobjects-notification-noreply <notilus-inbox@contact-everyone.fr>
 À: ☒ LELONG Franck IMT TECHNO
 Cc:
 Objet: Hygro < 80 && Temp > 20

seuil dépassé.
 Localisation GPS : {lat=45.76059, lon=4.83782}
 Temperature 63
 Hygrometry 20

Firing rule Id containing a matching rule that triggers when Hygro < 80 and Temp > 20

Actions :

- send mails with HTML layout
- send SMS

POST ▼ https://liveobjects.orange-business.com/api/v0/event2action/actionPolicies Params Send ▼ Save ▼

Authorization Headers (3) Body ● Pre-request Script Tests Code

☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary JSON (application/json) ▼

```

1 {
2   "name": "Test EventToAction app Android",
3   "enabled": true,
4   "triggers": {
5     "eventRuleIds": ["b87900ce-16f8-4b37-a723-78d23635ab10"]
6   },
7   "actions": {
8     "emails": [{
9       "cc": ["franck.lelong@orange.fr"], "cci": [], "to": ["franck.lelong@orange.com"],
10      "subjectTemplate": "Hygro < 80 && Temp > 20",
11      "contentTemplate": "seuil dépassé. <br/> Localisation GPS : {{matchingContext.data.location}} <br/> Temperature {{matchingContext.data.value.temperature}} <br/> Hygrometry {{matchingContext.data.value.hygrometry}}"
12    }],
13     "sms": [{
14       "destinationPhoneNumbers": ["+33607681808"],
15       "contentTemplate": "seuil dépassé. Localisation GPS : {{matchingContext.data.location}}, temperature {{matchingContext.data.value.temperature}}"
16     }]
17   }
18 }
```




Update an Action Policy : make a more complex mail

Toggle the rule activation : true/false

Change rules, receivers...The Mail/SMS bodies - ex: add a google map

PUT `https://liveobjects.orange-business.com/api/v0/event2action/actionPolicies/f3a1f839-31fc-4f80-a7d2-f1...` Params Send Save

Authorization Headers (3) Body Pre-request Script Tests Code

form-data x-www-form-urlencoded raw binary JSON (application/json)

```
1 {
2   "name": "Test EventToAction app Android updated",
3   "enabled": true,
4   "triggers": {
5     "eventRuleIds": ["b87900ce-16f8-4b37-a723-78d23635ab10"]
6   },
7   "actions": {
8     "emails": [{"cc": ["franck.lelong@orange.fr"], "cci": [], "to": ["franck.lelong@orange.com"],
9     "subjectTemplate": "Hygro < 80 && Temp > 20",
10    "contentTemplate": "Threshold exceeded. <br/> - Temperature: {{matchingContext.data.value.temperature}} <br/> - Hygrometry:
11      {{matchingContext.data.value.hygrometry}} <br/> <br/> - GPS Location: {{matchingContext.data.location}} <br/> <img width=\"300\"
12      src=\"https://maps.googleapis.com/maps/api/staticmap?center={{matchingContext.data.location.lat}},{{matchingContext.data.location
13      .lon}}&zoom=18&size=300x300&markers=color:red%7Clabel:A%7C{{matchingContext.data.location.lat}},{{matchingContext.data.location
14      .lon}}\" <br/> <p> https://www.google.fr/maps/@{{matchingContext.data.location.lat}},{{matchingContext.data.location.lon}},13z
15      </p>"
16    }],
17    "sms": [{
18      "destinationPhoneNumbers": ["+33676767745"],
19      "contentTemplate": "Seuil dépassé Hygro < 80 && Temp > 20"
20    }]
21  }
```

De : liveobjects-notification-moreply <notlus-inbox@contact-everyone.fr>
À : LELONG Franck IMT TECHNO
Cc :
Objet : Hygro < 80 && Temp > 20

Threshold exceeded.
- Temperature: 63
- Hygrometry: 20
- GPS Location: {lat=45.76059, lon=4.83782}

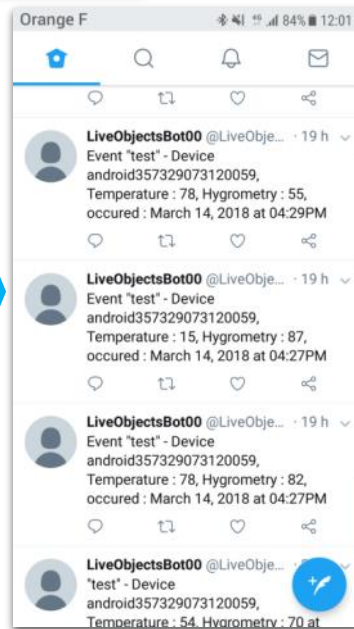
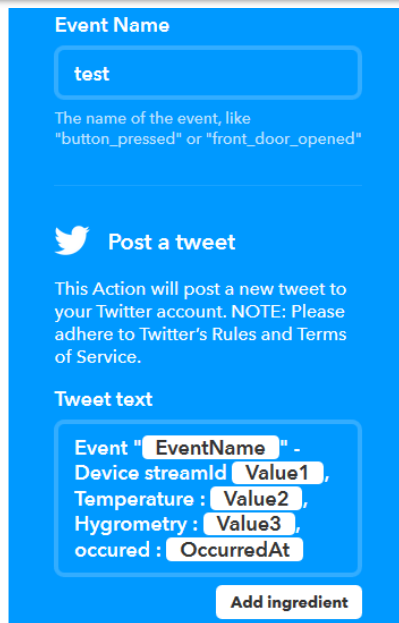
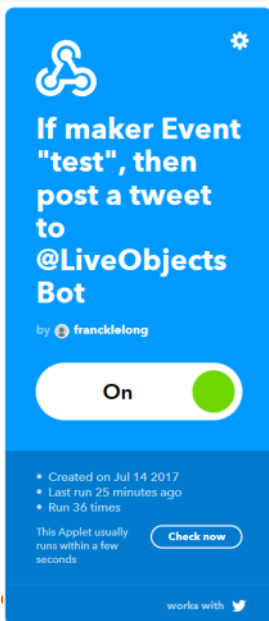


<https://www.google.fr/maps/@45.76059,4.83782,13z>



Make a Push http for all the coming data

Use case : push all the coming data to the @LiveObjectsBot account
Solution : use the IFTTT Webhooks





Make a Push http for all the coming data

POST `https://liveobjects.orange-business.com/api/v0/event2action/actionPolicies` Params Send Save

Authorization Headers (3) Body Pre-request Script Tests Code

form-data x-www-form-urlencoded raw binary JSON (application/json)

```
1 {
2   "name": "Push to IFTTT - Twitter",
3   "enabled": true,
4   "triggers": {
5     "messageSelector": {
6       "origin": "data_new"
7     }
8   },
9   "actions": {
10    "httpPush": [{
11      "webhookUrl": "https://maker.ifttt.com/trigger/test/with/key/...",
12      "retryOnFailure": true,
13      "content": "{ \"value1\" : \"{{streamId}}\", \"value2\" : \"{{value.temperature}}\", \"value3\" : \"{{value.hygrometry}}\" }"
14    }]
15  }
16 }
```

The event

Key to be generated on your IFTTT account

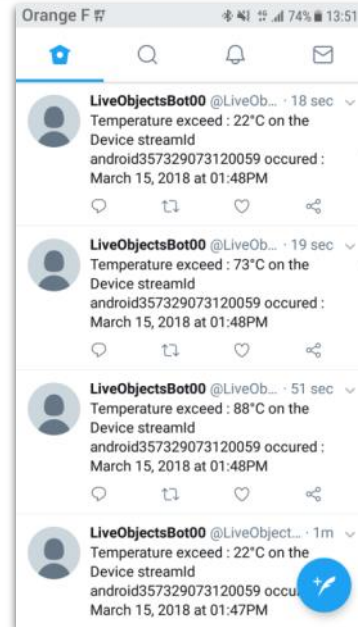
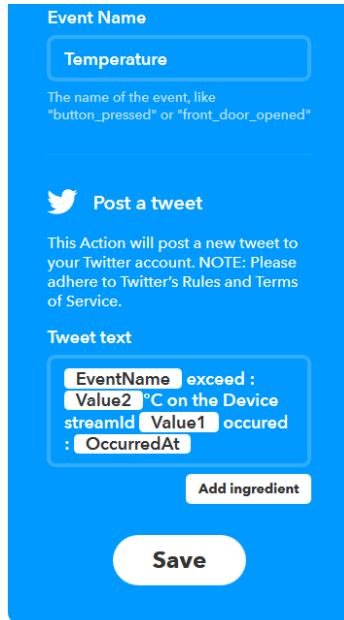
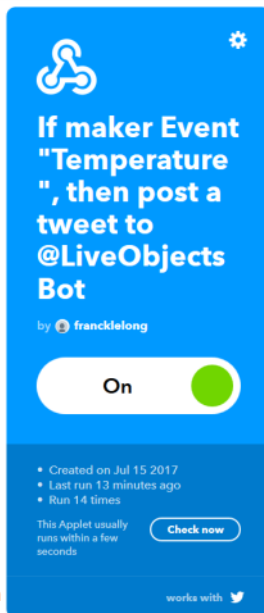
```
{
  "metadata": {
    "connector": "mqtt",
    "source": "urn:lnsId:android:357329073120059"
  },
  "streamId": "android:357329073120059",
  "createdAt": "2018-03-14T17:35:02:557Z",
  "extra": null,
  "location": {
    "provider": null,
    "alt": null,
    "accuracy": null,
    "lon": 4.83749,
    "lat": 45.75913
  },
  "model": "demo",
  "id": "5aa95d467676a75633fb7016",
  "value": {
    "revmin": 6431,
    "temperature": 66,
    "hygrometry": 12
  },
  "timestamp": "2018-03-14T17:35:02:555Z",
  "tags": null
}
```



Make a Push http for triggered events

Use case : push data that has triggered the “Test hygro < 80 && temp > 20” rule to the @LiveObjectsBot account

Solution : use the IFTTT Webhooks





Make a Push http for triggered events

POST ▼ https://liveobjects.orange-business.com/api/v0/event2action/actionPolicies Params Send ▼ Save ▼

Authorization Headers (3) **Body** ● Pre-request Script Tests Code

☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary JSON (application/json) ▼

```

1 {
2   "name": "Push to IFTTT on triggered event - Twitter"
3   "enabled": true,
4   "triggers": {
5     "eventRuleIds": ["b87900ce-16f8-4b37-a723-78d23635ab10"]
6   },
7   "actions": {
8     "httpPush": [{
9       "webhookUrl": "https://maker.ifttt.com/trigger/Temperature/with/key/[redacted]",
10      "retryOnFailure": true,
11      "content": "{ \"value1\" : \"{{matchingContext.data.streamId}}\", \"value2\" : \"{{matchingContext.data.value.temperature}}\",
12                \"value3\" : \"{{matchingContext.data.value.hygrometry}}\" }"
13    }
14  ]
15 }

```

The event

Key to be generated on your IFTTT account

Beware of the prefix

```

{
  "matchingContext": {
    "data": {
      "streamId": "android357329073120059",
      "location": {
        "lon": 4.8371,
        "lat": 45.75042
      },
      "model": "demo",
      "value": {
        "level": 8512,
        "hygrometry": 8,
        "temperature": 73
      },
      "timestamp": "2018-03-15T12:48:41.022Z"
    },
    "tenantId": "5948ee330cf29f87afa24127",
    "timestamp": "2018-03-15T12:48:41.164Z"
  },
  "tenantId": "5948ee330cf29f87afa24127",
  "timestamp": "2018-03-15T12:48:41.164Z"
}

```



Make a Push http for tagged devices

1) Set a tag to the devices, here : “httppush”

☐	70B3D59BA00004AE	Starter Kit Fr anck	httppush	● Activé	A distance	StarterKIT	15/03/2018 14:1 2:08 il y a une minute
--------------------------	----------------------------------	------------------------	--------------------------	----------	------------	------------	--

2) Create a matching rule related to this tag + a firing rule set at “ALWAYS”

POST <https://liveobjects.orange-business.com/api/v0/eventprocessing/matching-rule> Params Send Save

Authorization Headers (2) Body Pre-request Script Tests Code

☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary JSON (application/json)

```
1 {  
2   "dataPredicate":  
3   {  
4     "in":  
5     {  
6       [  
7         "httppush", {"var" : "tags"}  
8       ]  
9     },  
10    "enabled": true,  
11    "name": "Test tag pour http push"  
12  }  
13 }
```

3) Create an event to action policy

Thank you

