
SynchroniCity IoT Data Marketplace

Release latest

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1	Index	3
1.1	Installation and Administration Guide	3
1.2	User Guide	15

This project is part of the EU H2020 [SynchroniCity](#) project and it is based on the [FIWARE Business API Ecosystem](#).

The [SynchroniCity IoT Data Marketplace](#) is a joint component made up of the FIWARE Business Framework and a set of APIs (and its reference implementations) provided by the TMForum. This component allows the monetization of different kind of assets (both digital and physical) during the whole service life cycle, from offering creation to its charging, accounting and revenue settlement and sharing. The SynchroniCity IoT Data Marketplace exposes its complete functionality through TMForum standard APIs; concretely, it includes the catalog management, ordering management, inventory management, usage management, billing, customer, and party APIs.

The SynchroniCity IoT Data Marketplace is not a single software repository, but it is composed of different projects which work coordinately to provide the complete functionality.

Concretely, the SynchroniCity IoT Data Marketplace is made of the following components:

- *Reference implementations of TM Forum APIs*: Reference implementation of the catalog management, ordering management, inventory management, usage management, billing, customer, and party APIs.
- *Business Ecosystem Charging Backend*: Is the component in charge of processing the different pricing models, the accounting information, and the revenue sharing reports. With this information, the Business Ecosystem Charging Backend is able to calculate amounts to be charged, charge customers, and pay sellers.
- *Business Ecosystem RSS*: Is in charge of distributing the revenues originated by the usage of a given data source among the involved stakeholders. In particular, it focuses on distributing part of the revenue generated by a data source between the SynchroniCity IoT Data Marketplace instance provider and the Data Provider(s) responsible for the data source.
- *Business Ecosystem Logic Proxy*: Acts as the endpoint for accessing the SynchroniCity IoT Data Marketplace. On the one hand, it orchestrates the APIs validating user requests, including authentication, authorization, and the content of the request from a business logic point of view. On the other hand, it serves a web portal that can be used to interact with the system.

Installation and Administration Guide The guide for maintainers that explains how to install it.

User Guide The guide for users that explains how to use it.

1.1 Installation and Administration Guide

1.1.1 Introduction

This installation and administration guide covers the [SynchroniCity IoT Data Marketplace](#) based on the [Business API Ecosystem](#) version 6.4.0, corresponding to FIWARE release 6. Any feedback on this document is highly welcomed, including bugs, typos or things you think should be included but aren't. Please send them by creating an issue at [GitHub Issues](#)

1.1.2 Installation

The SynchroniCity IoT Data Marketplace can be deployed with Docker. For all the components that made up the SynchroniCity IoT Data Marketplace (based on the [Business API Ecosystem](#) it has been provided a Docker image that can be used jointly with docker-compose in order to deploy and configure the ecosystem.

Requirements

The SynchroniCity IoT Data Marketplace is not a single software, but a set of modules that work together for proving business capabilities. In this regard, this section contains the basic dependencies of the different components that made up the SynchroniCity IoT Data Marketplace.

Note: The SynchroniCity IoT Data Marketplace requires instances of MySQL and MongoDB running. In this regard, you have three possibilities:

- You can have your own instances deployed in your machine

- You can manually run docker containers before executing the SynchroniCity IoT Data Marketplace
 - You can use docker-compose to automatically deploy both components
-

OAuth2 Authentication requirements

The SynchroniCity IoT Data Marketplace authenticates with the [FIWARE identity manager](<http://fiware-idm.readthedocs.io/en/latest/>). It is needed to register an application in this portal in order to acquire the OAuth2 credentials.

There you have to use the following info for registering the app:

- Name: The name you want for your instance
- URL: Host and port where you plan to run the instance. [http]https://host:port/
- Callback URL: URL to be called in the OAuth process. [http]https://host:port/auth/fiware/callback

You must also create a new role called 'seller' and assign this role to the user authorized to be seller (data provider) in the marketplace.

Deploying the SynchroniCity IoT Data Marketplace

As stated, it is possible to deploy the SynchroniCity IoT Data Marketplace using the Docker images available for each of its modules with *docker-compose*. In particular, the following images have to be deployed:

- *bae-apis-synchronicity* (<https://hub.docker.com/r/angelocapossele/bae-apis-synchronicity/>): Image including the TMForum APIs
- *biz-ecosystem-rss* (<https://hub.docker.com/r/conwetlab/biz-ecosystem-rss/>): Image Including the BAE RSS module
- *charging-backend-synchronicity* (<https://hub.docker.com/r/angelocapossele/charging-backend-synchronicity/>): Image including the charging backend module
- *logic-proxy-synchronicity* (<https://hub.docker.com/r/conwetlab/angelocapossele/logic-proxy-synchronicity/>): Image including the logic proxy module

For deploying the SynchroniCity IoT Data Marketplace the first step is creating a *docker-compose.yml* file with the following contents (or use the one provided in this GitHub repo):

```
version: '3'
services:
  mongo:
    image: mongo:3.2
    restart: always
    ports:
      - 27017:27017
    networks:
      main:
    volumes:
      - ./mongo-data:/data/db

  mysql:
    image: mysql:latest
    restart: always
    ports:
```

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```

    - 3333:3306
  volumes:
    - ./mysql-data:/var/lib/mysql
  networks:
    main:
  environment:
    - MYSQL_ROOT_PASSWORD=my-secret-pw
    - MYSQL_DATABASE=RSS

charging:
  image: angelocapossele/charging-backend-synchronicity:v6.4.0
  restart: always
  links:
    - mongo
  depends_on:
    - mongo
    - apis
    - rss
  ports:
    - 8006:8006
  networks:
    main:
      aliases:
        - charging.docker
  volumes:
    - ./charging-bills:/business-ecosystem-charging-backend/src/media/bills
    - ./charging-assets:/business-ecosystem-charging-backend/src/media/assets
    - ./charging-plugins:/business-ecosystem-charging-backend/src/plugins
    - ./charging-settings:/business-ecosystem-charging-backend/src/user_
↪ settings
  environment:
    - PAYPAL_CLIENT_ID=client_id_here
    - PAYPAL_CLIENT_SECRET=client_secret_here

proxy:
  image: angelocapossele/logic-proxy-synchronicity:v6.4.0
  restart: always
  links:
    - mongo
  depends_on:
    - mongo
    - apis
  ports:
    - 8004:8004
  networks:
    main:
      aliases:
        - proxy.docker
  volumes:
    - ./proxy-conf:/business-ecosystem-logic-proxy/etc
    - ./proxy-indexes:/business-ecosystem-logic-proxy/indexes
    - ./proxy-themes:/business-ecosystem-logic-proxy/themes
    - ./proxy-static:/business-ecosystem-logic-proxy/static
  environment:
    - NODE_ENV=development

apis:

```

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```
image: angelocapossele/bae-apis-synchronicity:v6.4.0
restart: always
ports:
  - 4848:4848
  - 8080:8080
links:
  - mysql
depends_on:
  - mysql
networks:
  main:
    aliases:
      - apis.docker
volumes:
  - ./apis-conf:/etc/default/tmf/
environment:
  - MYSQL_ROOT_PASSWORD=my-secret-pw
  - MYSQL_HOST=mysql

rss:
image: conwetlab/biz-ecosystem-rss:v6.4.0
restart: always
ports:
  - 9999:8080
  - 4444:4848
  - 1111:8181
links:
  - mysql
depends_on:
  - mysql
networks:
  main:
    aliases:
      - rss.docker
volumes:
  - ./rss-conf:/etc/default/rss

networks:
  main:
    external: true
```

1.1.3 Configuration

The next step is providing all the configuration files required by the different components using the configured volumes. It is possible to find valid configuration files (as well as the *docker-compose.yml*) in this [GitHub repo](#).

As you can see, the different modules include environment variables and volumes. In particular:

Charging

The charging-backend-synchronicity needs the following environment variables:

- **PAYPAL_CLIENT_ID**: the client id of your application PayPal credentials used for charging users (a Sandbox account can be used for testing).

- **PAYPAL_CLIENT_SECRET:** the client secret of your application PayPal credentials used for charging users (a Sandbox account can be used for testing).

Additionally, the `charging-backend-synchronicity` image contains 4 volumes. In particular:

- `/business-ecosystem-charging-backend/src/media/bills:` This directory contains the PDF invoices generated by the Business Ecosystem Charging Backend
- `/business-ecosystem-charging-backend/src/media/assets:` This directory contains the different digital assets uploaded by sellers to the Business Ecosystem Charging Backend
- `/business-ecosystem-charging-backend/src/plugins:` This directory is used for providing asset plugins (see section *Installing the Orion Query Plugin*)
- `/business-ecosystem-charging-backend/src/user_settings:` This directory must include the `settings.py` and `services_settings.py` files with the software configuration.

More specifically, the `services_settings.py` includes:

- **KEYSTONE_PROTOCOL:** http or https
- **KEYSTONE_HOST:** host where is running the IDM (e.g., 'idm.docker')
- **KEYROCK_PORT:** port number where the *Keyrock* instance is listening (e.g., '8000')
- **KEYSTONE_PORT:** port number where the *Keystone* instance is listening (e.g., '5000')
- **KEYSTONE_USER:** admin username of the IDM (e.g., 'idm')
- **KEYSTONE_PWD:** admin password of the IDM (e.g., 'idm')
- **ADMIN_DOMAIN:** admin domain on the IDM (e.g., 'Default')
- **APP_CLIENT_ID:** Client ID of the Orion context broker registered on the IDM
- **APP_CLIENT_SECRET:** Client Secret of the Orion Context Broker registered on the IDM

Logic Proxy

The `logic-proxy-synchronicity` image contains 4 volumes. In particular:

- `/business-ecosystem-logic-proxy/etc:` This directory must include the `config.js` file with the software configuration
- `/business-ecosystem-logic-proxy/indexes:` This directory contains the indexes used by the SynchroniCity IoT Data Marketplace for searching
- `/business-ecosystem-logic-proxy/themes:` This directory contains the themes that can be used to customize the web portal
- `/business-ecosystem-logic-proxy/static:` This directory includes the static files ready to be rendered including the selected theme and js files

Finally, the `logic-proxy-synchronicity` uses the environment variable `NODE_ENV` to determine if the software is being used in *development* or in *production* mode.

Note: The `config.js` file must include an extra setting not provided by default called `config.extPort` that must include the port where the proxy is going to run in the host machine

Once you have created the files, run the following command

```
$ docker-compose up
```

Then, the SynchroniCity IoT Data Marketplace should be up and running in *http://YOUR_HOST:PORT/* replacing *YOUR_HOST* by the host of your machine and *PORT* by the port provided in the Business Ecosystem Logic Proxy configuration

Once the different containers are running, you can stop them using

```
$ docker-compose stop
```

And start them again using

```
$ docker-compose start
```

Additionally, you can terminate the different containers by executing

```
$ docker-compose down
```

Installing the Orion Query Plugin

The SynchroniCity IoT Data Marketplace is intended to support the monetization of different kind of data sources. The different kind of data sources that may be wanted to be monetized will be heterogeneous and potentially very different between them.

Additionally, for each type of data source different validations and activation mechanisms will be required. For example, if the data source is an NGSI entity, it will be required to validate that the provider is the owner of that entity. Moreover, when a customer acquires the access to that entity, it will be required to notify the Identity Management component that a new user has access to it.

The huge differences between the different types of data sources that can be monetized in the SynchroniCity IoT Data Marketplace makes impossible to include its validations and characteristics as part of the core software. For this reason, it has been created a plugin based solution, where all the characteristics of a data source type are implemented in a plugin that can be loaded in the SynchroniCity IoT Data Marketplace.

As you may know, the SynchroniCity IoT Data Marketplace is able to sell NGSI compliant data sources. To support this functionality, it must be installed the Orion Query plugin (also included in this [GitHub repo](#)) as follows

1. Copy the plugin file into the host directory of the volume */business-ecosystem-charging-backend/src/plugins*
2. Enter the running container

```
$ docker exec -i -t your-container /bin/bash
```

3. Go to the installation directory

```
$ cd /apis/business-ecosystem-charging-backend/src
```

4. Load the plugin

```
$ ./manage.py loadplugin ./plugins/Orion.zip
```

5. Restart Apache

```
$ service apache2 restart
```

Note: For specific details on how to create a plugin and its internal structure, have a look at the [Business API Ecosystem Programmer Guide](#)

1.1.4 Sanity Check Procedures

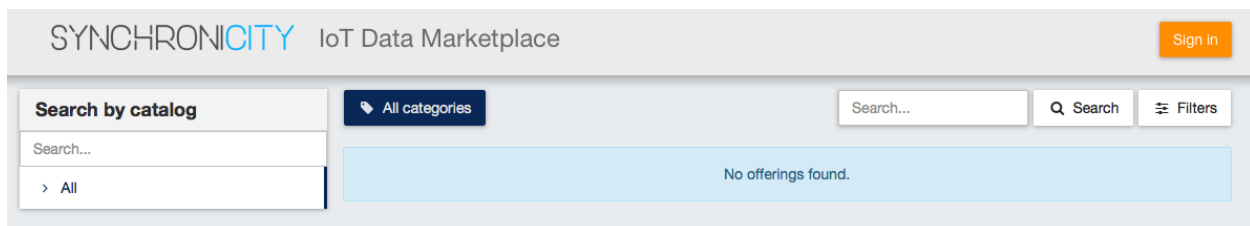
The Sanity Check Procedures are the steps that a System Administrator will take to verify that an installation is ready to be tested. This is therefore a preliminary set of tests to ensure that obvious or basic malfunctioning is fixed before proceeding to unit tests, integration tests and user validation.

End to End Testing

Please note that the following information is required before starting with the process: * The host and port where the Proxy is running * A valid IdM user with the *Seller* role

To Check if the SynchroniCity IoT Data Marketplace is running, follow the next steps:

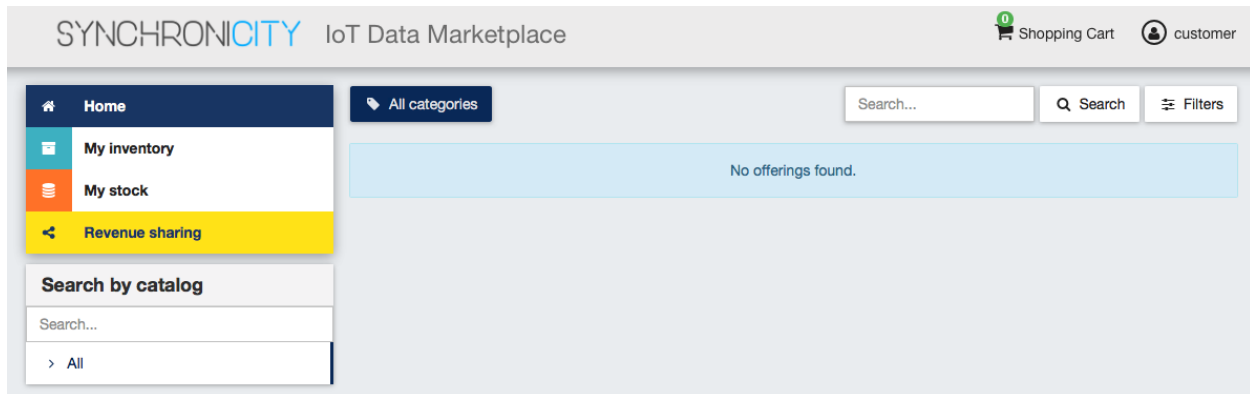
1. Open a browser and enter to the SynchroniCity IoT Data Marketplace
2. Click on the *Sign In* Button



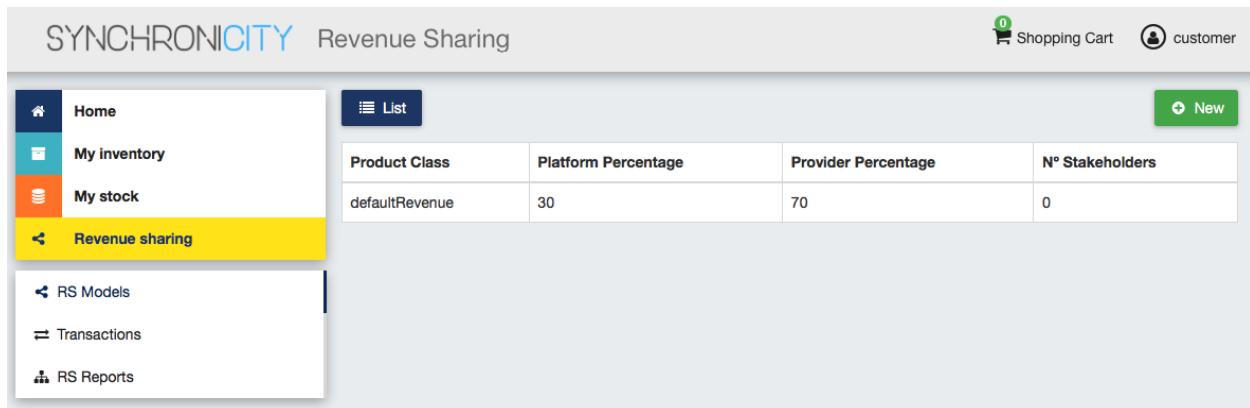
3. Provide your credentials in the IdM page



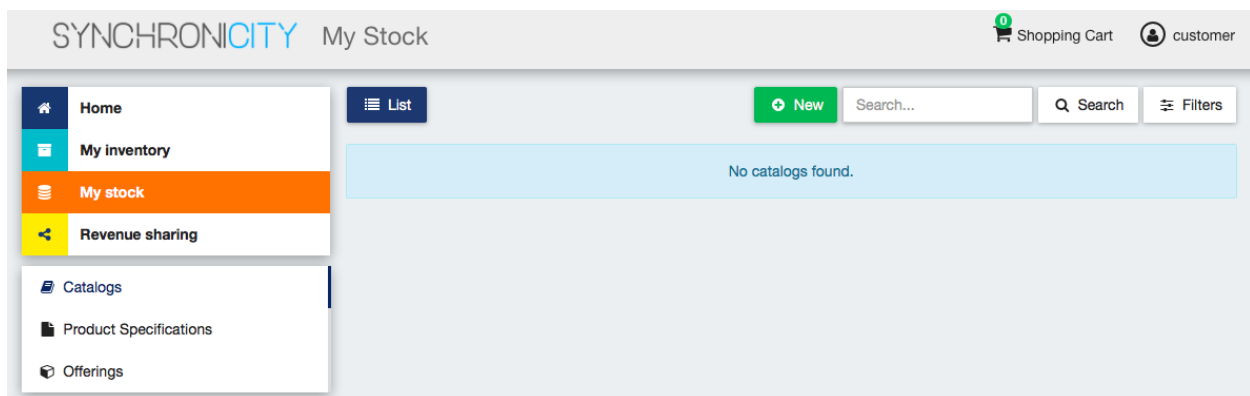
4. Go to the *Revenue Sharing* section



5. Ensure that the default RS Model has been created



6. Go to *My Stock* section and click on *New* for creating a new catalog



7. Provide a name and a description and click on *Next*. Then click on *Create*

SYNCHRONICITY My Stock

Shopping Cart 0 customer

Home

My inventory

My stock

Revenue sharing

Catalogs

Product Specifications

Offerings

List

New

New catalog

1 General

2 Finish

Step 1: General

Enter a name

My catalog

Enter a description (optional)

This is a catalog

Next

SYNCHRONICITY My Stock

Shopping Cart 0 customer

Home

My inventory

My stock

Revenue sharing

Catalogs

Product Specifications

Offerings

List

New

New catalog

1 General

2 Finish

Step 2: Finish

Name

My catalog

Status

Active Launched Retired Obsolete

Description

This is a catalog

Create

SYNCHRONICITY My Stock

Shopping Cart 0 customer

Home

My inventory

My stock

Revenue sharing

Catalogs

Product Specifications

Offerings

List

Details

My catalog

About

Parties

Offerings

General

Name

My catalog

Status

Active Launched Retired Obsolete

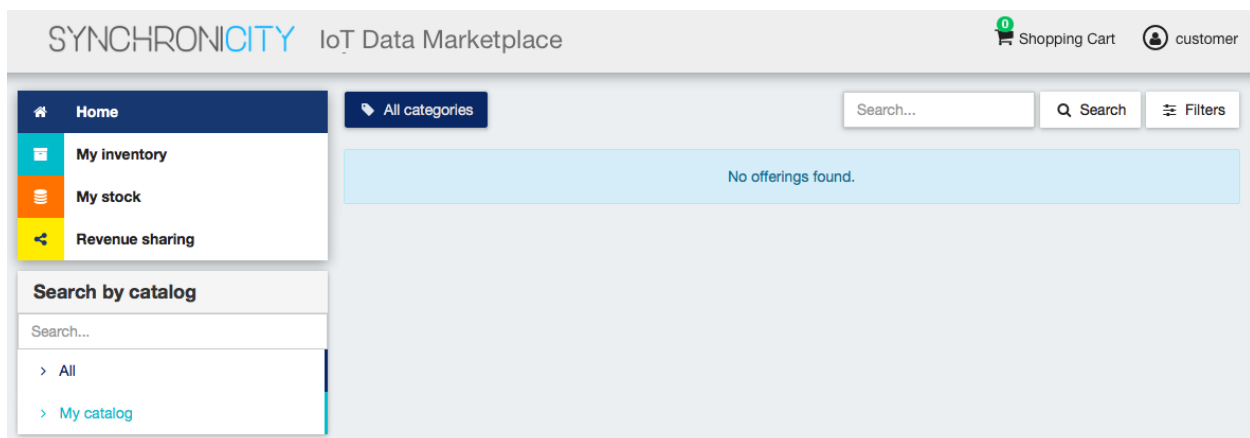
Description (optional)

This is a catalog

Update

8. Click on *Launched*, and then click on *Update*

9. Go to *Home*, and ensure the new catalog appears



List of Running Processes

We need to check that Java for the Glassfish server (APIs and RSS), python (Charging Backend) and Node (Proxy) are running, as well as MongoDB and MySQL databases. If we execute the following command:

```
ps -ewF | grep 'java\|mongodb\|mysql\|python\|node' | grep -v grep
```

It should show something similar to the following:

```
mongodb  1014      1  0 3458593 49996 0 sep08 ?          00:22:30 /usr/bin/mongod --
↳config /etc/mongodb.conf
mysql    1055      1  0 598728 64884 2 sep08 ?          00:02:21 /usr/sbin/mysqld
francis+ 15932 27745  0 65187 39668  0 14:53 pts/24    00:00:08 python ./manage.py
↳runserver 0.0.0.0:8006
francis+ 15939 15932 1 83472 38968  0 14:53 pts/24    00:00:21 /home/user/business-
↳ecosystem-charging-backend/src/virtenv/bin/python ./manage.py runserver 0.0.0.0:8006
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```


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```
francis+ 16036 15949 0 330473 163556 0 14:54 pts/25 00:00:08 node server.js
root      1572      1 0 1142607 1314076 3 sep08 ? 00:37:40 /usr/lib/jvm/java-8-
↳oracle/bin/java -cp /opt/biz-ecosystem/glassfish ...
```

Network interfaces Up & Open

To check the ports in use and listening, execute the command:

```
$ sudo netstat -nltp
```

The expected results must be something similar to the following:

```
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/
↳Program name
tcp        0      0 127.0.0.1:8006          0.0.0.0:*               LISTEN      15939/
↳python
tcp        0      0 127.0.0.1:27017         0.0.0.0:*               LISTEN      1014/
↳mongod
tcp        0      0 127.0.0.1:28017         0.0.0.0:*               LISTEN      1014/
↳mongod
tcp        0      0 127.0.0.1:3306          0.0.0.0:*               LISTEN      1055/
↳mysqld
tcp6       0      0 :::80                   :::*                    LISTEN      16036/
↳node
tcp6       0      0 :::8686                  :::*                    LISTEN      1572/
↳java
tcp6       0      0 :::4848                   :::*                    LISTEN      1572/
↳java
tcp6       0      0 :::8080                   :::*                    LISTEN      1572/
↳java
tcp6       0      0 :::8181                   :::*                    LISTEN      1572/
↳java
```

Databases

The last step in the sanity check, once we have identified the processes and ports, is to check that MySQL and MongoDB databases are up and accepting queries. We can check that MySQL is working, with the following command:

```
$ mysql -u <user> -p<password>
```

You should see something similar to:

```
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 174
Server version: 5.5.47-0ubuntu0.14.04.1 (Ubuntu)

Copyright (c) 2000, 2015, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
```

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```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
mysql>
```

For MongoDB, execute the following command:

```
$ mongo <database> -u <user> -p <password>
```

You should see something similar to:

```
MongoDB shell version: 2.4.9  
connecting to: <database>  
>
```

1.1.5 Diagnosis Procedures

The Diagnosis Procedures are the first steps that a System Administrator will take to locate the source of an error in a GE. Once the nature of the error is identified with these tests, the system admin will very often have to resort to more concrete and specific testing to pinpoint the exact point of error and a possible solution. Such specific testing is out of the scope of this section.

Resource Availability

Memory use depends on the number of concurrent users as well as the free memory available and the hard disk. The SynchroniCity IoT Data Marketplace requires a minimum of 1024 MB of available RAM memory, but 2048 MB of free memory are recommended. Moreover, the SynchroniCity IoT Data Marketplace requires at least 15 GB of hard disk space.

Remote Service Access

N/A

Resource Consumption

Resource consumption strongly depends on the load, especially on the number of concurrent users logged in.

- Glassfish main memory consumption should be between 500 MB and 2048 MB
- MongoDB main memory consumption should be between 30 MB and 500 MB
- Python main memory consumption should be between 30 MB and 200 MB
- Node main memory consumption should be between 30 MB and 200 MB
- MySQL main memory consumption should be between 30 MB and 500 MB

I/O Flows

The only expected I/O flow is of type HTTP, on port defined in the Logic Proxy configuration file

1.2 User Guide

1.2.1 Introduction

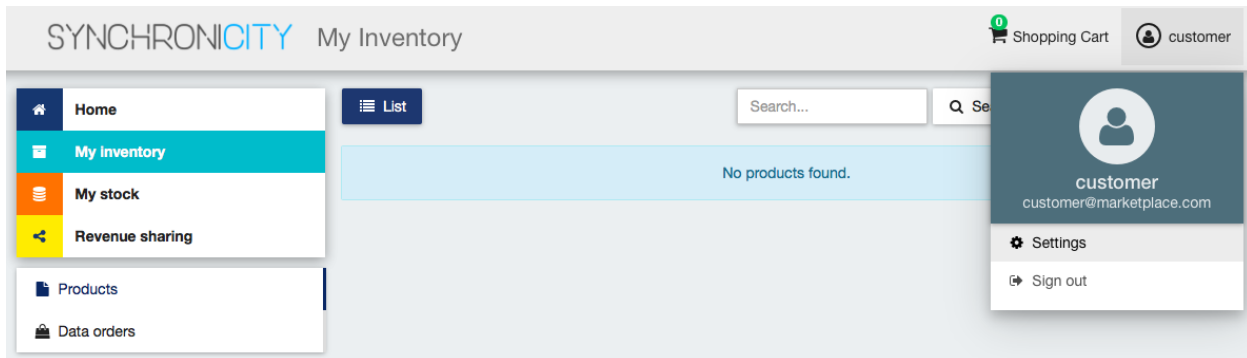
This user guide covers the [SynchroniCity IoT Data Marketplace](#) based on the [Business API Ecosystem](#) version 6.4.0, corresponding to FIWARE release 6. Any feedback on this document is highly welcomed, including bugs, typos or things you think should be included but aren't. Please send them by creating an issue at [GitHub Issues](#)

This user guide contains a description of the different tasks that can be performed in the SynchroniCity IoT Data Marketplace using its web interface. This section is organized so that actions related to a particular user role are grouped together.

1.2.2 Profile Configuration

All the users of the system can configure their profile, so they can configure their personal information as well as their billing addresses and contact mediums.

To configure the user profile, the first step is opening the user *Settings* located in the user menu.



In the displayed view, it can be seen that some information related to the account is already included (*Username*, *Email*, *Access token*). This information is the one provided by the IdM after the login process.

The profile to be updated depends on whether the user is acting on behalf an organization or himself. In both cases, to update the profile, fill in the required information and click on *Update*.

For users, personal information is provided.

SYNCHRONICITY Settings

Shopping Cart customer

Back

Personal settings

General

Contact mediums

Account

Username

customer

Access token

MI4pgXBo6lTtYhjoIOOopDGnMDb88D

Email

customer@marketplace.com

Profile

This information is public so it may be viewed by anyone.

First name

customer

Last name

customer

Title

Prefer not to say

Marital status

Prefer not to say

Gender

Prefer not to say

Nationality

Birth

Date

1970-01-01

Country

Prefer not to say

Place

Update

Note: Only the *First name* and *Last name* fields are mandatory

Once you have created your profile, you can include contact mediums by going to the *Contact mediums* section. In the *Contact Medium* section, there are two different tabs. On the one hand, the *Billing addresses* tab, where you can register the billing addresses you will be able to use when creating orders and purchasing data.

To create a billing address, fill in the fields and click on *Create*

16

Chapter 1. Index

SYNCHRONICITY

Settings

Shopping Cart

customer

Back

Personal settings

General

Contact mediums

Billing addresses

Business addresses

The billing addresses will be used in your orders.

New shipping address

Email address

Email

customer@marketplace.com

Postal address

Street

Street

Zip Code

012345

City

City

State / Province

State

Country

Aruba

Telephone number

Type

Mobile

Number

+44 7400000000

Create

Once created, you can edit the address by clicking on the *Edit* button of the specific address, and changing the wanted fields.

SYNCHRONICITY

Settings

Shopping Cart

customer

Back

Personal settings

General

Contact mediums

Billing addresses

Business addresses

The billing addresses will be used in your orders.

My billing addresses

Email address	Postal address	Telephone number	Actions
customer@marketplace.com	Street 012345 City (State) Aruba	Mobile, +447400000000	

The screenshot shows the SynchroniCity Settings page with a modal form for updating a billing address. The form is titled "Billing address" and contains the following fields:

- Email address:** A text input field containing "customer@marketplace.com".
- Postal address:** A section containing:
 - Street:** A text input field containing "Street".
 - Zip Code:** A text input field containing "012345".
 - City:** A text input field containing "City".
 - State / Province:** A text input field containing "State".
 - Country:** A dropdown menu showing "Aruba".
- Telephone number:** A section containing:
 - Type:** A dropdown menu showing "Mobile".
 - Number:** A text input field containing "+44 7400000000".

At the bottom right of the form are two buttons: "Update" (green) and "Cancel" (white).

On the other hand, if you have the *Seller* role you can create *Business Addresses*, which can be used by your customers in order to allow them to contact you. In the *Business Addresses* tab you can create, different kind of contact mediums, including emails, phones, and addresses. To create a contact medium, fill in the fields and click on *Create*

The screenshot shows the SynchroniCity Settings page with the "Business addresses" tab selected. The page displays a warning message: "This information is public so it may be viewed by anyone." Below this, there is a form titled "New business address" with the following fields:

- Medium:** A dropdown menu showing "Email address".
- Email:** A text input field containing "business@address.com".

At the bottom right of the form is an orange "Create" button.

SYNCHRONICITY Settings

Shopping Cart customer

Back

Personal settings

General

Contact mediums

Billing addresses

Business addresses

This information is public so it may be viewed by anyone.

My business addresses

Medium	Details	Actions
Email address	business@address.com	<div></div> <div></div>

New business address

Medium

Telephone number

Type

Mobile

Number

+44 7400000000

Create

SYNCHRONICITY Settings

Shopping Cart customer

Back

Personal settings

General

Contact mediums

Billing addresses

Business addresses

This information is public so it may be viewed by anyone.

My business addresses

Medium	Details	Actions
Email address	business@address.com	<div></div> <div></div>
Telephone number	Mobile, +447400000000	<div></div> <div></div>

New business address

Medium

Postal address

Street

Street

Zip Code

01234

City

City

State / Province

State

Country

Aruba

Create

You can *Edit* or *Remove* the contact medium by clicking on the corresponding button

SYNCHRONICITY Settings Shopping Cart customer

[Back](#)

Personal settings

- General
- Contact mediums

Billing addresses **Business addresses**

This information is public so it may be viewed by anyone.

My business addresses

Medium	Details	Actions
Email address	business@address.com	
Telephone number	Mobile, +447400000000	
Postal address	Street 01234 City (State) Aruba	

New business address

Medium
Email address

Email

Create

1.2.3 Admin

If the user of the SynchroniCity IoT Data Marketplace is an admin, he will be able to access the *Administration* section of the web portal. This section is located in the user menu.

SYNCHRONICITY IoT Data Marketplace Shopping Cart admin

Home **My inventory**

Search by catalog

Search...

- All
- My catalog

All categories Search...

No offerings found.

admin
admin@admin.com

- Administration
- Settings
- Sign out

Manage Categories

Admin users are authorized to create the system categories that can be used by *Sellers* to categorize their catalogs, data sources, and offerings.

To create categories, go to the *Administration* section, and click on *New*

SYNCHRONICITY Administration Shopping Cart 0 admin

[Back](#) [List](#) [New](#)

Category

Categories

No categories found.

Then, provide a name and an optional description for the category. Once the information has been included, click on *Next*, and then on *Create*

SYNCHRONICITY Administration Shopping Cart 0 admin

[Back](#) [List](#) [New](#)

Category

Categories

New Category

1 General 2 Finish

Step 1: General

Enter a name

Category

Enter a description (optional)

This is a new category

Choose a parent category ☐

Next

SYNCHRONICITY Administration Shopping Cart 0 admin

[Back](#) [List](#) [New](#)

Category

Categories

New Category

1 General 2 Finish

Step 2: Finish

Name

Category

Status

Active Launched Retired Obsolete

Description

This is a new category

Create

Categories in the SynchroniCity IoT Data Marketplace can be nested, so you can choose a parent category if you want while creating.

SYNCHRONICITY Administration Shopping Cart 0 admin

[Back](#) [List](#) [New](#)

Category

[Categories](#)

New Category

1 General

2 Finish

Step 1: General

Enter a name

Sub category

Enter a description (optional)

This is a sub category

Choose a parent category ☒

Name	Last Updated
Category	a minute ago

[Next](#)

Existing categories can be updated. To edit a category click on the category name.

SYNCHRONICITY Administration Shopping Cart 0 admin

[Back](#) [List](#) [New](#)

Category

[Categories](#)

Status	Name	Last Updated
Launched	Category	a minute ago
Launched	Category / Sub category	a few seconds ago

Then edit the corresponding fields and click on *Update*.

SYNCHRONICITY Administration Shopping Cart 0 admin

[Back](#) [List](#) [Detail](#)

Category

[Categories](#)

General

Name

Sub category

Status

Active ☐ Launched ☒ Retired ☐ Obsolete ☐

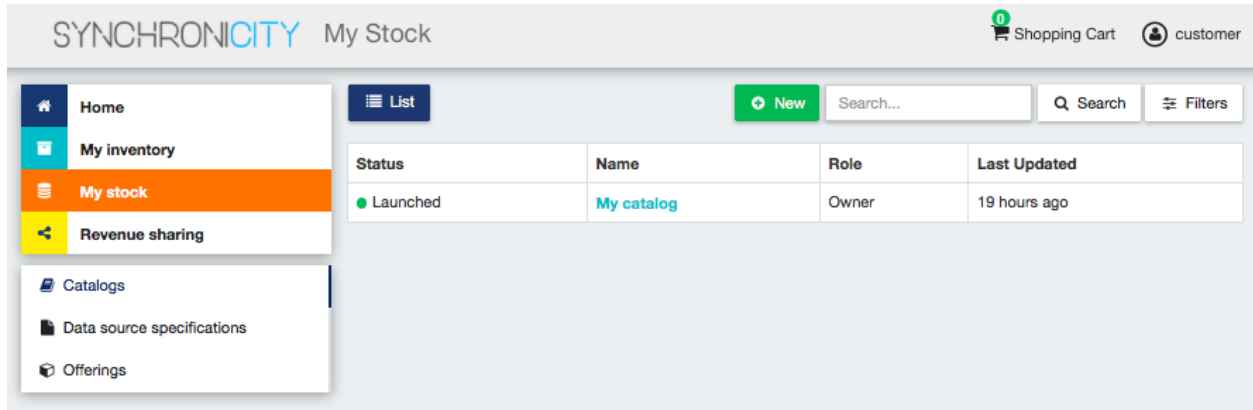
Description (optional)

This is a sub category

[Update](#)

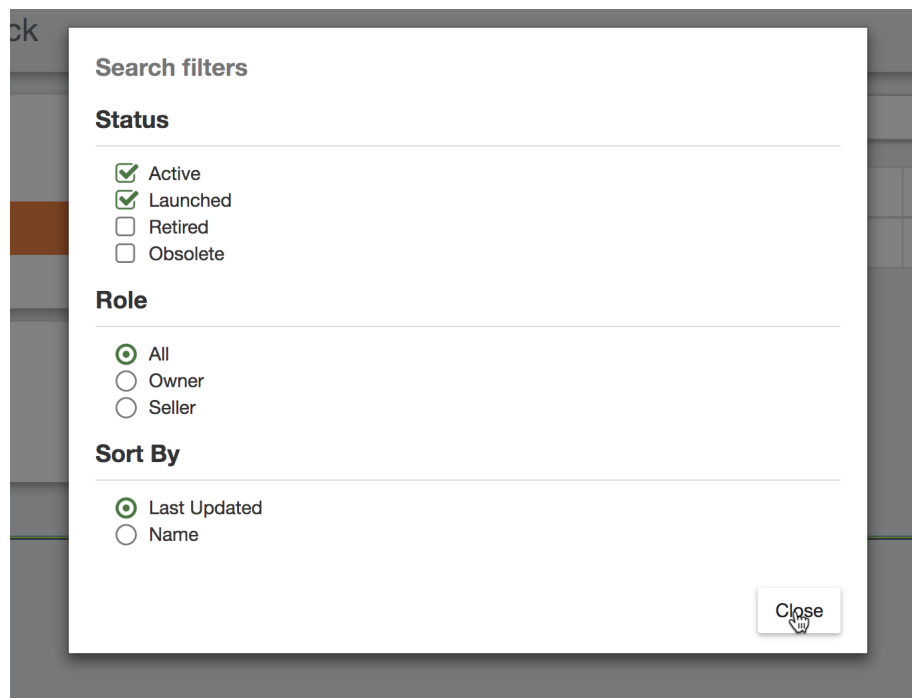
1.2.4 Seller

If the user of the SynchroniCity IoT Data Marketplace has the *Seller* role, he will be able to share and monetize his data sources by creating catalogs, data source specifications and offerings. All these objects are managed accessing *My Stock* section.



Manage Catalogs

The *Catalogs* section is the one that is open by default when the seller accesses *My Stock* section. This section contains the catalogs the seller has created. Additionally, it has been defined several mechanisms for searching and filtering the list of catalogs displayed. On the one hand, it is possible to search catalogs by keyword using the search input provided in the menu bar. On the other hand, it is possible to specify how catalog list should be sorted or filter the shown catalogs by status and the role you are playing. To do that, click on *Filters*, choose the required parameters, and click on *Close*.



To create a new catalog click on the *New* button. Then, provide a name and an optional description for the catalog. Once you have filled the fields, click on *Next*, and then on *Create*

SYNCHRONICITY

My Stock

0

Shopping Cart

customer

Home

My inventory

My stock

Revenue sharing

Catalogs

Data source specifications

Offerings

List

New

New catalog

1 General

2 Finish

Step 1: General

Enter a name

New catalog

Enter a description (optional)

This is a new catalog

Next

SYNCHRONICITY

My Stock

0

Shopping Cart

customer

Home

My inventory

My stock

Revenue sharing

Catalogs

Data source specifications

Offerings

List

New

New catalog

1 General

2 Finish

Step 2: Finish

Name

New catalog

Status

Active

Launched

Retired

Obsolete

Description

This is a new catalog

Create

Sellers can also update their catalogs. To do that, click on the name of the catalog to open the update view.

SYNCHRONICITY

My Stock

0

Shopping Cart

customer

Home

My inventory

My stock

Revenue sharing

Catalogs

Data source specifications

Offerings

List

New

Search...

Search

Filters

Status	Name	Role	Last Updated
Launched	My catalog	Owner	19 hours ago
Active	New catalog	Owner	a minute ago

Then, update the fields you want to modify and click on *Update*. In this view, it is possible to change the *Status* of the catalog. To start monetizing the catalog, and make it appear in the *Home* you have to change its status to *Launched*

SYNCHRONICITY My Stock
0 Shopping Cart customer

Home
My inventory
My stock
Revenue sharing
Catalogs
Data source specifications
Offerings

List Details

New catalog

About Parties Offerings

General

Name

Status

Active
Launched
Retired
Obsolete

Description (optional)

Update

SYNCHRONICITY My Stock
0 Shopping Cart customer

Home
My inventory
My stock
Revenue sharing
Catalogs
Data source specifications
Offerings

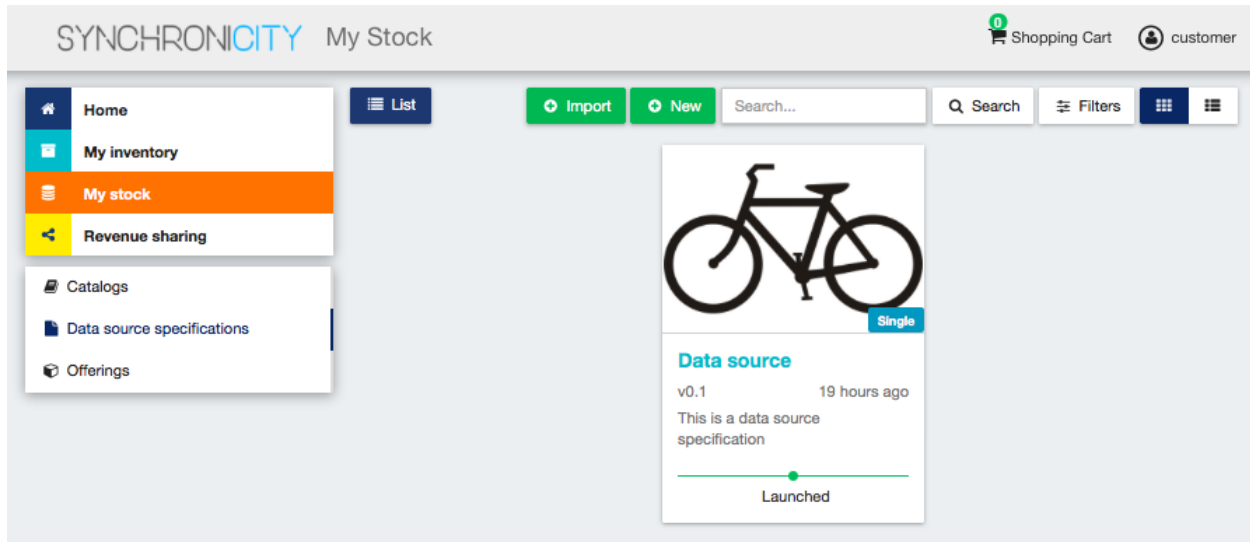
List

New Search... Search Filters

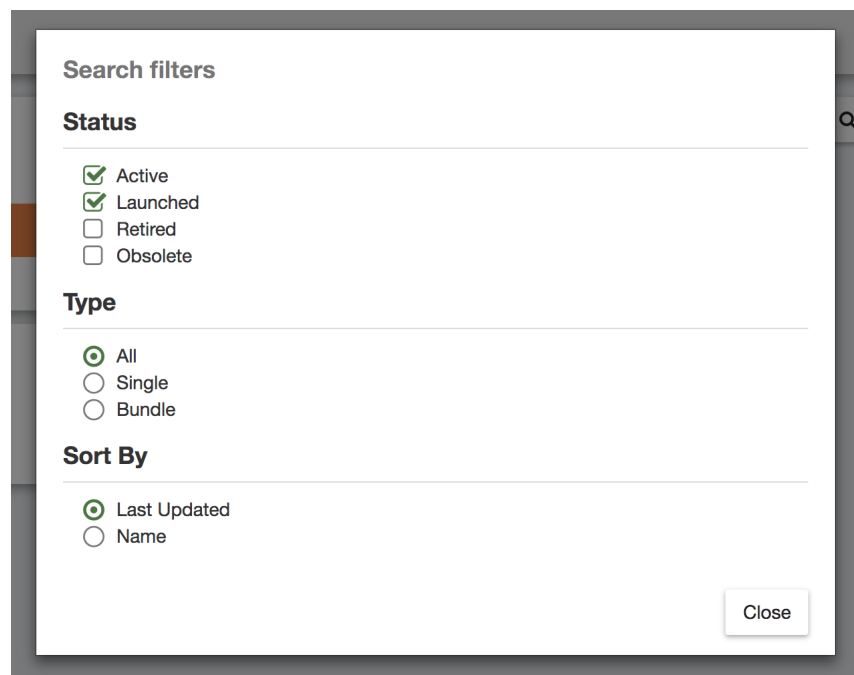
Status	Name	Role	Last Updated
Launched	My catalog	Owner	19 hours ago
Launched	New catalog	Owner	a few seconds ago

Manage Data Source Specifications

Data Source Specifications represent the data source being offered. To list your data source specifications go to *My Stock* section and click on *Data source specifications*.



In the same way as catalogs, data source specifications can be searched by keyword, sorted, or filtered by status and whether they are bundles or not. To filter or sort data source specifications, click on *Filters*, choose the appropriate properties, and click on *Close*



Additionally, it is possible to switch between the grid view and the tabular view using the provided buttons.

To create a new data source specification click on *New*. In the displayed view, provide the general information of the data source spec. including its name, version, and an optional description. In addition, you have to include the data source brand (Your brand), and an ID number which identifies the data source in your environment. Then, click on *Next*.

In the next step you you will be required to provide the asset.

For providing the asset, you have to choose between the available asset types, choose how to provide the asset between the available options, provide the asset, and include all the required information.

The screenshot shows the 'New product' form in the SynchroniCity IoT Data Marketplace. The left sidebar contains navigation links: Home, My inventory, My stock (highlighted), Revenue sharing, Catalogs, Data source specifications, and Offerings. The main content area is titled 'New product' and shows a progress bar with steps: 1 General, 2 Assets (selected), 3 Characteristics, 4 Attachments, and 5 Finish. The 'Step 2: Assets' section includes the following fields:

- Digital Asset Type:** Orion Query
- How to provide?:** URL
- Asset URL:** http://pep.docker:7000/v2/entities/airquality
- Media Type:** NGSIv2
- Application ID (Orion ID registered on the IDM, e.g., c0fc8c23f7044861ad2e941d9774729e):** c0fc8c23f7044861ad2e941d9774729e
- Fiware-Service (e.g., TenantRZ1):** TenantRZ1

A 'Next' button is located at the bottom right of the form.

Note: *Application ID* has to be the same application ID of the *Orion Context Broker* instance registered on the *IdM* where your data source belongs. *Fiware-Service* is the header used to register your data source as an entity on the *Orion Context Broker*. If your user does not have a provider role for that specific *Fiware-Service* (e.g., *TenantRZ1:provider*) you will not be allowed to publish data source specification for that entity.

The next step in the creation of a data source spec. is including its characteristics. For including a new characteristic click on *New Characteristic*

The screenshot shows the 'New product' form in the SynchroniCity IoT Data Marketplace, now at 'Step 3: Characteristics'. The progress bar shows steps: 1 General, 2 Assets, 3 Characteristics (selected), 4 Attachments, and 5 Finish. The 'Step 3: Characteristics' section includes a message: 'No characteristic included.' and a '+ New Characteristic' button. A 'Next' button is located at the bottom right of the form.

In the form, include the name, the type (string or number) and an optional description. Then create the values of the characteristic by filling the *Create a value* input and clicking on +.

SYNCHRONICITY My Stock Shopping Cart customer

Home My inventory My stock Revenue sharing Catalogs Data source specifications Offerings

List New

New product

1 General 2 Assets 3 Characteristics 4 Attachments 5 Finish

Step 3: Characteristics

No characteristic included.

Enter a name Choose a type string

Enter a description (optional)

Values

Must be at least one value for each characteristic.

Create a value +

Create Next

Once you have included all the characteristic info, save it clicking on *Create*

SYNCHRONICITY My Stock Shopping Cart customer

Home My inventory My stock Revenue sharing Catalogs Data source specifications Offerings

List New

New product

1 General 2 Assets 3 Characteristics 4 Attachments 5 Finish

Step 3: Characteristics

No characteristic included.

Enter a name Choose a type string

Enter a description (optional)

Values

Default +

Create a value +

Create Next

Once you have included all the required characteristics click on *Next*

The screenshot shows the 'New product' form in the SynchroniCity IoT Data Marketplace. The left sidebar contains navigation links: Home, My inventory, My stock (highlighted), Revenue sharing, Catalogs, Data source specifications, and Offerings. The top bar shows the SynchroniCity logo, 'My Stock', a shopping cart icon with '0' items, and a user profile labeled 'customer'. The main form area is titled 'New product' and has tabs for 'List' and 'New'. Below the tabs is a progress indicator with steps: 1 General, 2 Assets, 3 Characteristics (selected), 4 Attachments, and 5 Finish. The 'Step 3: Characteristics' section contains a table with the following data:

#	Name	Type	Values	Default	Delete
1	New characteristic	string	Characteristic value	Characteristic value	

Below the table is a '+ New Characteristic' button. A 'Next' button is located at the bottom right of the form.

In the next step you can include a picture for your data source spec. You have two options, providing an URL pointing to the picture or directly uploading it. Once provided click *Next* (Image credit for this example: [oNline Web Fonts](#))

The screenshot shows the 'New product' form in the SynchroniCity IoT Data Marketplace, now at 'Step 4: Attachments'. The left sidebar and top bar are the same as in the previous screenshot. The progress indicator shows steps: 1 General, 2 Assets, 3 Characteristics, 4 Attachments (selected), and 5 Finish. The 'Step 4: Attachments' section features a large image placeholder containing a black cloud icon with 'CO₂' written on it. Below the image, there are two options for providing the attachment: 'How to provide?' with a dropdown menu set to 'Upload picture', and 'Upload picture' with a 'Choose File' button and a text input field containing the file path '8c99a9e3d6eacf4c99f8334e7f4a0521.png'. A 'Next' button is located at the bottom right of the form.

Once done click on *Next* and then on *Create*

SYNCHRONICITY My Stock Shopping Cart customer

Home My inventory My stock Revenue sharing Catalogs Data source specifications Offerings

List New

New product

1 General 2 Assets 3 Characteristics 4 Attachments 5 Finish

Step 5: Finish

Name Air quality **Version** 0.1

Status

Active Launched Retired Obsolete

Brand My brand **ID Number** 123

Description

This is an air quality data source

Characteristics

#	Name	Type	Values	Default
1	New characteristic	string	Characteristic value	Characteristic value

Attachments

Picture URL

http://proxy.docker:8004/charging/media/assets/customer/Airquality__8c99a9e3d6eac4

Create


Sellers can update their data source. To do that click on the data source specification to be updated.

SYNCHRONICITY My Stock Shopping Cart customer

Home My inventory My stock Revenue sharing Catalogs Data source specifications Offerings

List Import New Search...

Search Filters




Air quality

v0.1 10 minutes ago

This is an air quality data source

Active



Data source

v0.1 20 hours ago

This is a data source specification

Launched

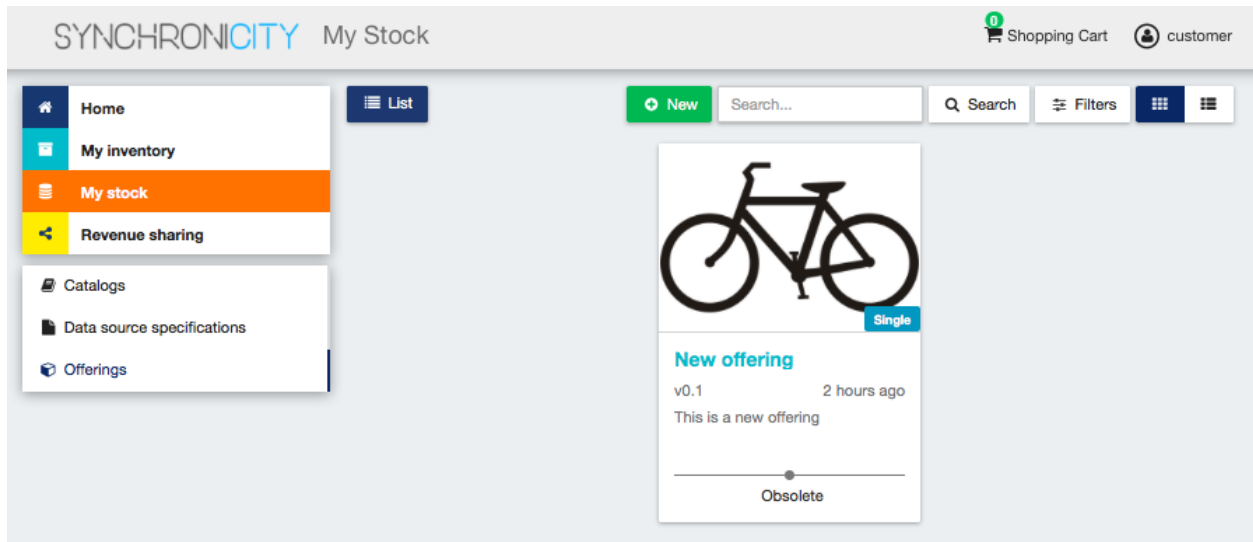
Update the required values and click on *Update*. Note that for start selling an offering that includes the data source specification you will be required to change its status to *Launched*

The top screenshot displays the 'Air quality' data source details page. The header shows 'SYNCHRONICITY My Stock' with a shopping cart icon (0 items) and a user profile icon labeled 'customer'. The left sidebar contains navigation links: Home, My inventory, My stock (highlighted), Revenue sharing, Catalogs, Data source specifications, and Offerings. The main content area has tabs for 'List' and 'Details' (selected). The 'Air quality' data source is shown with a large 'CO₂' icon. Below the icon, the title 'Air quality' is displayed, followed by an 'Upgrade' button. A navigation bar includes links for 'About', 'Characteristics', 'Attachments', and 'Relationships'. The 'General' section contains fields for 'Name' (Air quality), 'Version' (0.1), 'Status' (Active, Launched, Retired, Obsolete), 'Brand' (My brand), 'ID Number' (123), and 'Description' (optional) (This is an air quality data source). An 'Update' button is at the bottom right.

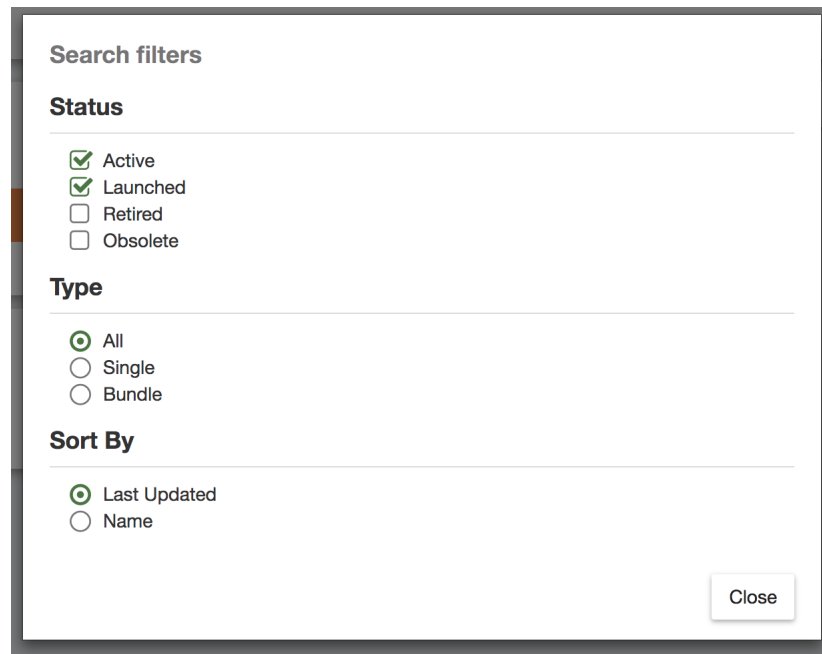
The bottom screenshot shows the 'My Stock' section. The header is the same. The left sidebar is identical. The main content area has a 'List' tab selected. Above the list are buttons for 'Import' and 'New', a search bar, and a 'Search' button. The list displays two data sources: 'Air quality' and 'Data source'. Each entry shows a version number (v0.1), a timestamp (a few seconds ago and 20 hours ago respectively), a description, and a 'Launched' status indicator.

Manage Data Offerings

Data Offerings are the entities that contain the license, pricing models and revenue sharing info used to monetize a data source specification. To list your data offerings, go to *My Stock* section and click on *Offerings*



The existing data source offerings can be searched by keyword, sorted, or filtered by status and whether they are bundles or not. To filter or sort data offerings, click on *Filters*, choose the appropriate properties, and click on *Close*



Additionally, it is possible to switch between the grid view and the tabular view by clicking on the specific button.

SYNCHRONICITY My Stock

Shopping Cart 0 customer

Home My inventory My stock Revenue sharing Catalogs Data source specifications Offerings

List New Search... Search Filters

Status	Name	Product Spec.	Type	Last Updated
● Obsolete	New offering	Data source	Single	2 hours ago

To create a new offering click on *New*. In the displayed form, include the basic info of the offering. Including, its name, version, an optional description, and an optional set of places where the offering is available. Once the information has been provided click on *Next*

SYNCHRONICITY My Stock

Shopping Cart 0 customer

List New

New offering

1 General 2 Product Spec. 3 Catalogue 4 Category 5 License 6 Price Plans 7 RS Model 8 Finish

Step 1: General

Enter a name: Air quality

Enter a version: 0.1

Enter a description (optional): This is a new offering

Enter places (optional): City name

Next

In the next step, you can choose whether your offering is a bundle or not. In this case, offering bundles are logical containers that allow you to provide new pricing models when a set of offerings are acquired together. If you want to create a bundle you will be required to include at least two bundled offerings.

SYNCHRONICITY My Stock

Shopping Cart 0 customer

Home My inventory My stock Revenue sharing Catalogs Data source specifications Offerings

List New

New offering

1 General 2 Product Spec. 3 Catalogue 4 Category 5 License 6 Price Plans 7 RS Model 8 Finish

Step 2: Product Spec.

Is a new bundle of products? ☒

Status	Name	ID	Brand	Type	Updated
Launched	Air quality	123	My brand	Single	43 minutes ago
Launched	Data source	101	My brand	Single	21 hours ago

Next

In the next step you have to select the data source specification that is going to be monetized in the current offering. Once selected click on *Next*.

SYNCHRONICITY My Stock

Shopping Cart 0 customer

Home My inventory My stock Revenue sharing Catalogs Data source specifications Offerings

List New

New offering

1 General 2 Product Spec. 3 Catalogue 4 Category 5 License 6 Price Plans 7 RS Model 8 Finish

Step 2: Product Spec.

Is a new bundle of products? ☐

Status	Name	ID	Brand	Type	Updated
Launched	Air quality	123	My brand	Single	42 minutes ago
Launched	Data source	101	My brand	Single	21 hours ago

Next

Then, you have to select the catalog where you want to publish you offering and click on *Next*

The screenshot shows the 'New offering' wizard in the SynchroniCity IoT Data Marketplace. The left sidebar contains navigation links: Home, My inventory, My stock (highlighted), Revenue sharing, Catalogs, Data source specifications, and Offerings. The main content area is titled 'New offering' and shows a progress list with 8 steps: 1 General, 2 Product Spec., 3 Catalogue (selected), 4 Category, 5 License, 6 Price Plans, 7 RS Model, and 8 Finish. The 'Step 3: Catalogue' section includes a search bar and a table of existing catalogues.

Status	Name	Role	Last Updated
● Launched	My catalog	Owner	21 hours ago
● Launched	New catalog	Owner	2 hours ago

A 'Next' button is located at the bottom right of the step content.

In the next step, you can optionally choose categories for you offering. Once done, click on *Next*

The screenshot shows the 'New offering' wizard in the SynchroniCity IoT Data Marketplace, now at 'Step 4: Category'. The progress list on the left shows '4 Category' as the selected step. The main content area is titled 'Step 4: Category' and includes the instruction 'Choose categories (optional)'. Below this is a table of categories.

Name	Last Updated
Category	2 hours ago
Category / Sub category	2 hours ago

A 'Next' button is located at the bottom right of the step content.

In the next step, you can specify the terms and conditions that apply to your offering and that must be accepted by those customers who want to acquire it. Note that the terms and conditions are not mandatory.

SYNCHRONICITY My Stock 0 Shopping Cart customer

Home
My inventory
My stock
Revenue sharing
Catalogs
Data source specifications
Offerings

List New

New offering

1 General
2 Product Spec.
3 Catalogue
4 Category
5 License
6 Price Plans
7 RS Model
8 Finish

Step 5: License

Choose a type
None

Next

You have 3 options. You can select a standard open data license among the ones available

SYNCHRONICITY My Stock 0 Shopping Cart customer

Home
My inventory
My stock
Revenue sharing
Catalogs
Data source specifications
Offerings

List New

New offering

1 General
2 Product Spec.
3 Catalogue
4 Category
5 License
6 Price Plans
7 RS Model
8 Finish

Step 5: License

Choose a type
Standard open data license

Standard open data licenses

Attribution 4.0 International (CC BY 4.0)

Next

Or you can customize your license by using the wizard menu

The screenshot shows the 'New offering' form in the SynchroniCity IoT Data Marketplace. The left sidebar contains navigation links: Home, My inventory, My stock (highlighted), Revenue sharing, Catalogs, Data source specifications, and Offerings. The main content area is titled 'New offering' and shows a progress bar with steps 1 through 8. Step 5, 'License', is selected. The form is titled 'Step 5: License' and includes a 'Choose a type' dropdown set to 'Custom license (wizard)'. Below this is the 'Custom license (wizard)' section with a 'Title' field containing 'Custom license' and an 'Enter a description (optional)' text area containing 'This is a custom license'. There are four dropdown menus: 'Exclusivity' (Non-exclusive), 'Region' (United Kingdom), 'Purpose' (All purposes), and 'Sector' (All sectors). There are also two more dropdowns: 'Timeframe' (1 year) and 'Transferability' (No sublicensing right). A 'Next' button is at the bottom right.

Or you can describe your license by using the free-text form

The screenshot shows the 'New offering' form in the SynchroniCity IoT Data Marketplace, similar to the previous one but with the 'Choose a type' dropdown set to 'Custom license (free-text)'. The 'Custom license (free-text)' section has a 'Title' field containing 'Custom license' and a larger 'Enter a description' text area containing 'This is a custom license'. The other dropdowns and the 'Next' button are the same as in the previous screenshot.

Once you have defined your license click on *Next*

The next step is the most important for the offering. In the displayed form you can create different price plans for you offering, which will be selectable by customers when acquiring the offering. If you do not include any price plan the offering is considered free.

To include a new price plan the first step is clicking on *New Price Plan*

For creating the price plan, you have to provide a name, and an optional description. Then, you have to choose the type of price plan between the provided options.

The available types are: *one time* for payments that are made once when purchasing the offering, *recurring* for charges that are made periodically (e.g a monthly payment), and *usage* for charges that are calculated applying the pricing model to the actual usage made of the acquired service.

If you choose *one time*, you have to provide the price and the currency.

Once you have created your pricing model click on *Next*

SYNCHRONICITY My Stock
0 Shopping Cart customer



Home
My inventory
My stock
Revenue sharing
Catalogs
Data source specifications
Offerings

List New

New offering

1 General
2 Product Spec.
3 Catalogue
4 Category
5 License
6 Price Plans
7 RS Model
8 Finish

Step 6: Price Plans

Name	Description	Price	Actions
New price plan	This is a new price plan	10 EUR	 

New price plan

Next

In the last step of the process, you have to choose the revenue sharing model to be applied to you offering between the available ones. Once done, click on *Next* and then on *Create*.

SYNCHRONICITY My Stock
0 Shopping Cart customer

Home
My inventory
My stock
Revenue sharing
Catalogs
Data source specifications
Offerings

List New

New offering

1 General
2 Product Spec.
3 Catalogue
4 Category
5 License
6 Price Plans
7 RS Model
8 Finish

Step 7: RS Model

Product Class	Platform Percentage	Provider Percentage	N° Stakeholders
defaultRevenue	30	70	0

Next

SYNCHRONICITY My Stock

0 Shopping Cart
customer

Home
My inventory
My stock
Revenue sharing
Catalogs
Data source specifications
Offerings

List New

New offering

1 General
2 Product Spec.
3 Catalogue
4 Category
5 License
6 Price Plans
7 RS Model
8 Finish

Step 8: Finish

General

Name

Air quality

Version

0.1

Status

Active

Launched

Retired

Obsolete

Description

This is a new offering

Places

City name

Product Spec.

Status	Name	Type	Last Updated
Launched	Air quality	Single	an hour ago

Catalogue

Status	Name	Role	Last Updated
Launched	New catalog	Owner	2 hours ago

Categories

Name	Last Updated
Category	2 hours ago

Revenue Sharing Model

Product Class	Platform Percentage	Provider Percentage	N° Stakeholders
defaultRevenue	30	70	0

Create

Sellers can also edit their offerings. To do that click on the offering to be updated. In the displayed form, change the fields you want to edit and click on *Update*. Note that for start selling you offering you have to update its status to *Launched*

SYNCHRONICITY My Stock
0 Shopping Cart customer

Home
My inventory
My stock
Revenue sharing
Catalogs
Data source specifications
Offerings

List
Detail

Air quality

About
Price plans
Categories

General

Name

Air quality

Version

0.1

Product Spec.

Air quality

Last Updated

Today at 1:43 PM

Status

Active

Launched

Retired

Obsolete

Description (optional)

This is a new offering

Places

City name

Update

SYNCHRONICITY My Stock
0 Shopping Cart customer

Home
My inventory
My stock
Revenue sharing
Catalogs
Data source specifications
Offerings

List

New
Search...

Search
Filters

Single

Air quality

v0.1
a few seconds ago

This is a new offering

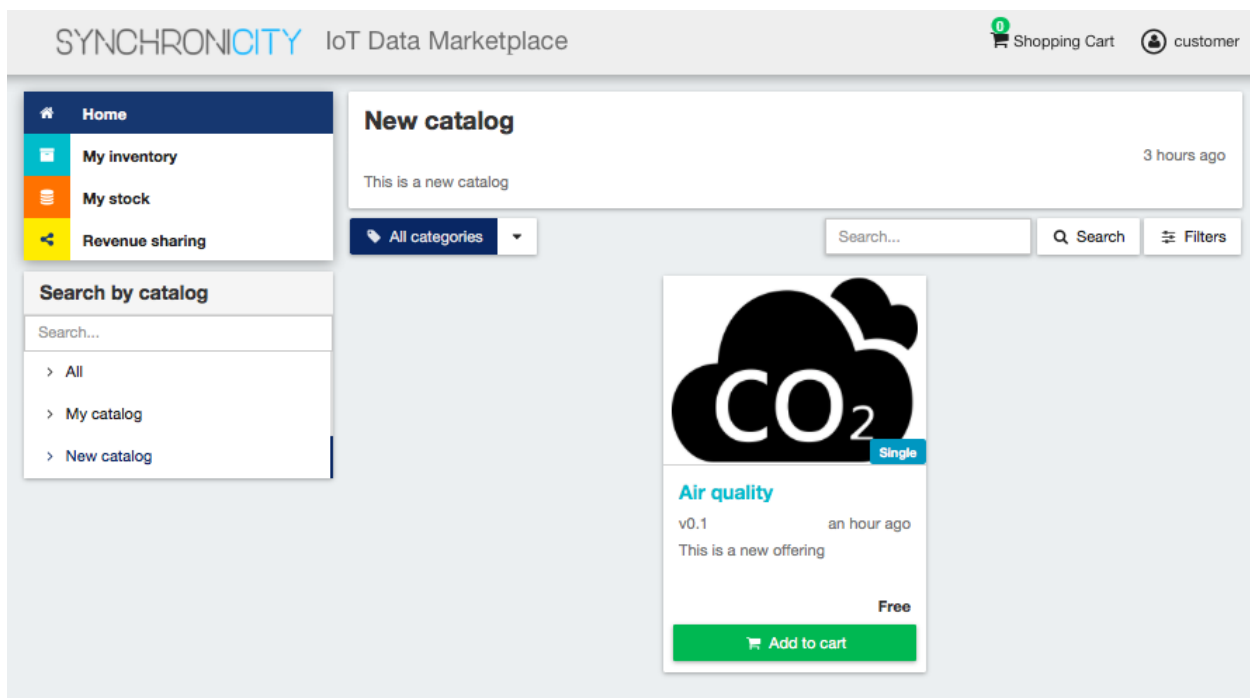
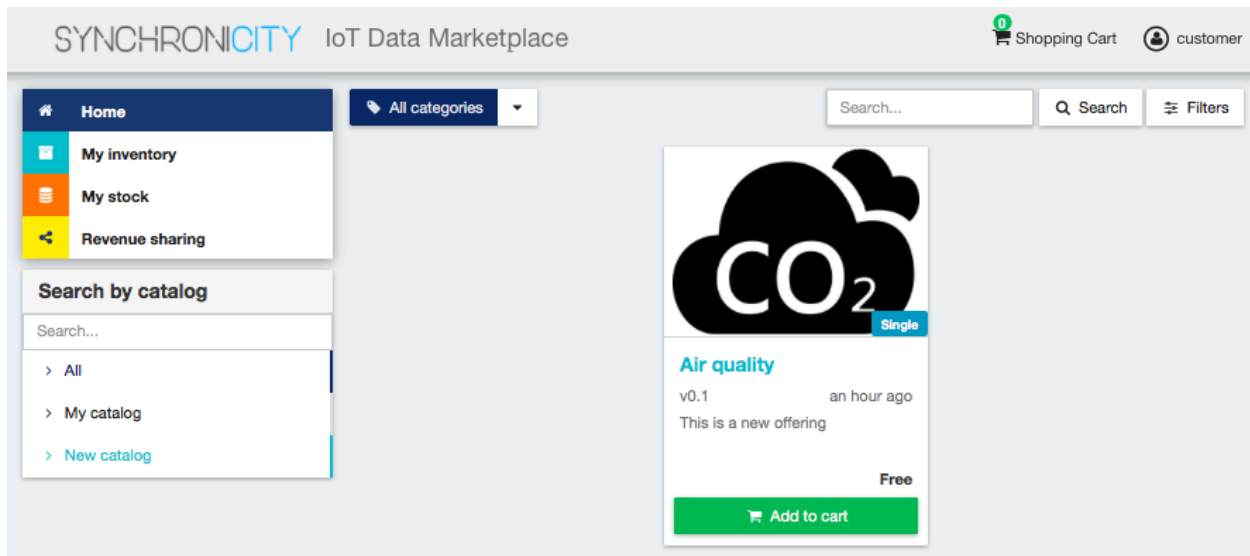
Launched

1.2.5 Customer

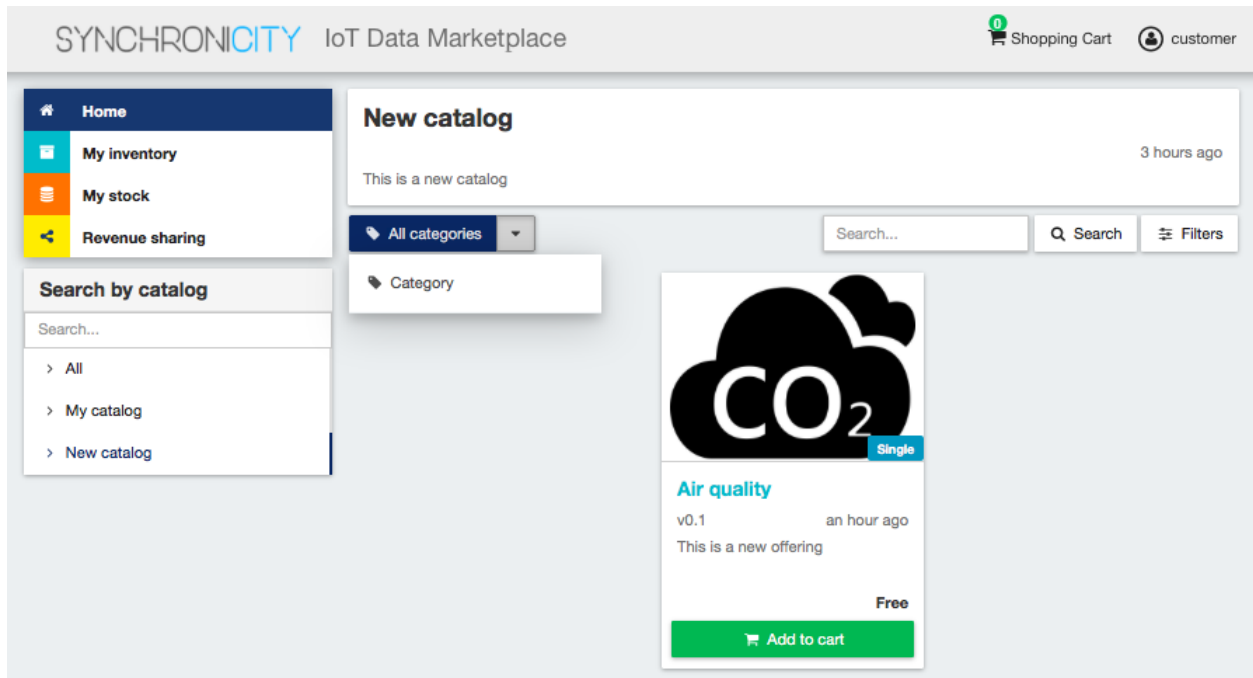
All of the users of the system have by default the *Customer* role. Customers are able to create orders for acquiring offerings.

List Available Offerings

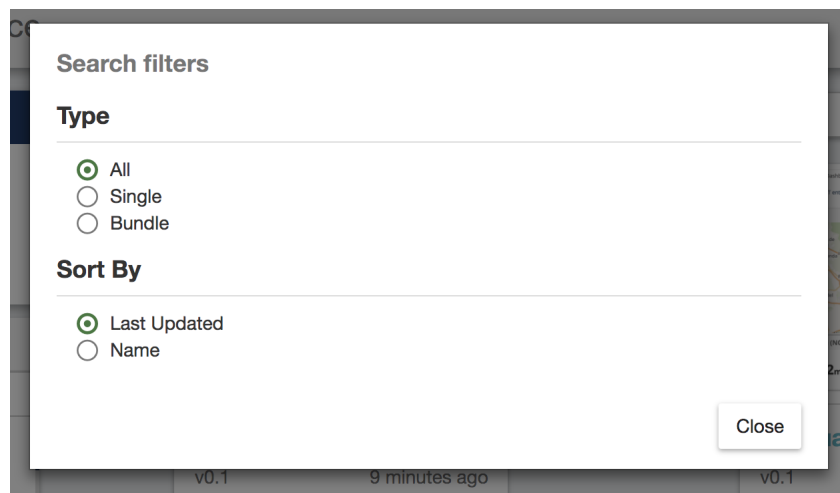
All the available (*Launched*) offerings appear in the *Home* page of the SynchroniCity IoT Data Marketplace, so they can be seen by customers. Additionally, customers can select a specific catalog of offerings by clicking on it.



Moreover, customers can filter the shown offerings by category using the categories dropdown and choosing the wanted one.



Customers can also filter bundle or single offerings using the *Filters* modal as well as choosing its sorting.



Customers can open the details of an offering by clicking on it. In the displayed view, it is shown the general info about the offering and its included data source, the characteristics of the data source, and the price plans of the offering.

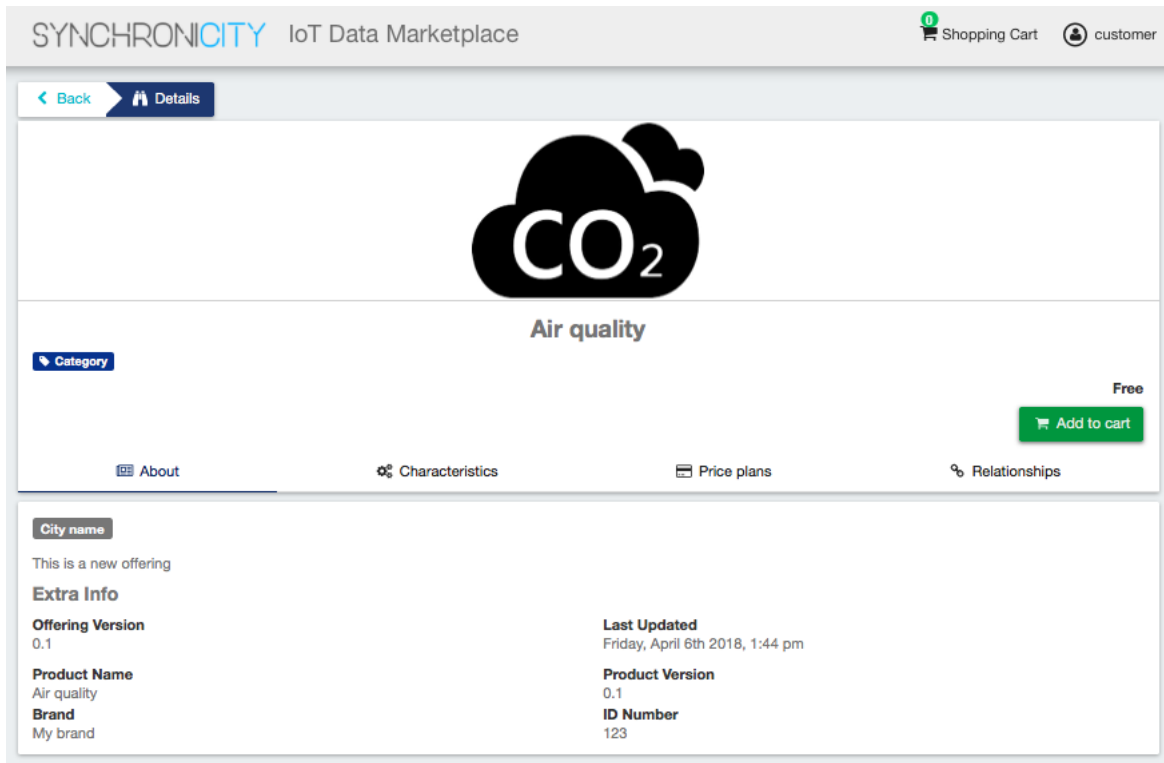
The screenshot shows the 'Air quality' offering details page. At the top, there's a header with 'SYNCHRONICITY IoT Data Marketplace', a shopping cart icon with '0' items, and a user profile icon labeled 'customer'. Below the header, there are navigation links: '< Back' and 'Details'. The main content area features a large 'CO₂' icon and the title 'Air quality'. A 'Category' button is on the left, and a 'Free' label with an 'Add to cart' button is on the right. Below this, there are tabs for 'About', 'Characteristics', 'Price plans', and 'Relationships'. The 'About' tab is active, showing 'City name' as a header. The content includes 'This is a new offering', 'Extra Info' section, 'Offering Version' (0.1), 'Last Updated' (Friday, April 6th 2018, 1:44 pm), 'Product Name' (Air quality), 'Product Version' (0.1), 'Brand' (My brand), and 'ID Number' (123).

Create Order

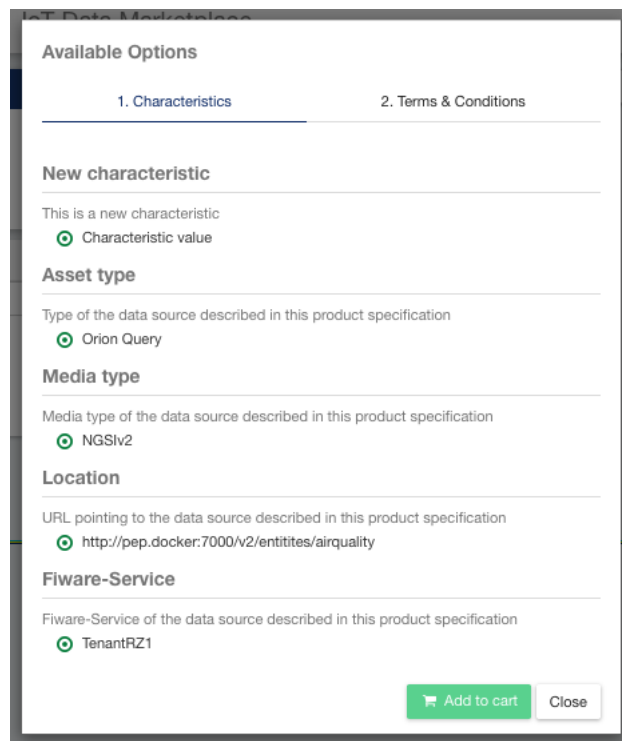
Customers can create orders for acquiring offerings. The different offerings to be included in an order are managed using the *Shopping Cart*.

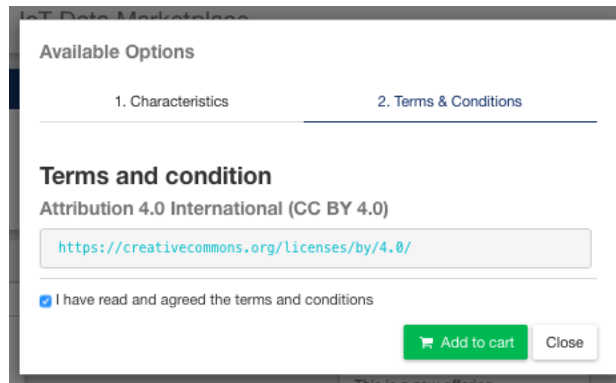
To include an offering in the shopping cart there are two possibilities. You can click on the *Add to Cart* button located in the offering panel when searching, or you can click on the *Add to Cart* button located in the offering details view.

The screenshot shows the search results page. The header is the same as the previous screenshot. On the left, there's a sidebar with navigation links: 'Home', 'My inventory', 'My stock', 'Revenue sharing', and 'Search by catalog'. The 'Search by catalog' section is expanded, showing a search bar and a list of options: '> All', '> My catalog', and '> New catalog'. The main content area shows a search bar with 'Search...' and a 'Search' button. Below the search bar, there's a card for the 'Air quality' offering. The card features the 'CO₂' icon, the title 'Air quality', the version 'v0.1', the time '2 hours ago', and the status 'This is a new offering'. A 'Free' label and an 'Add to cart' button are at the bottom of the card.

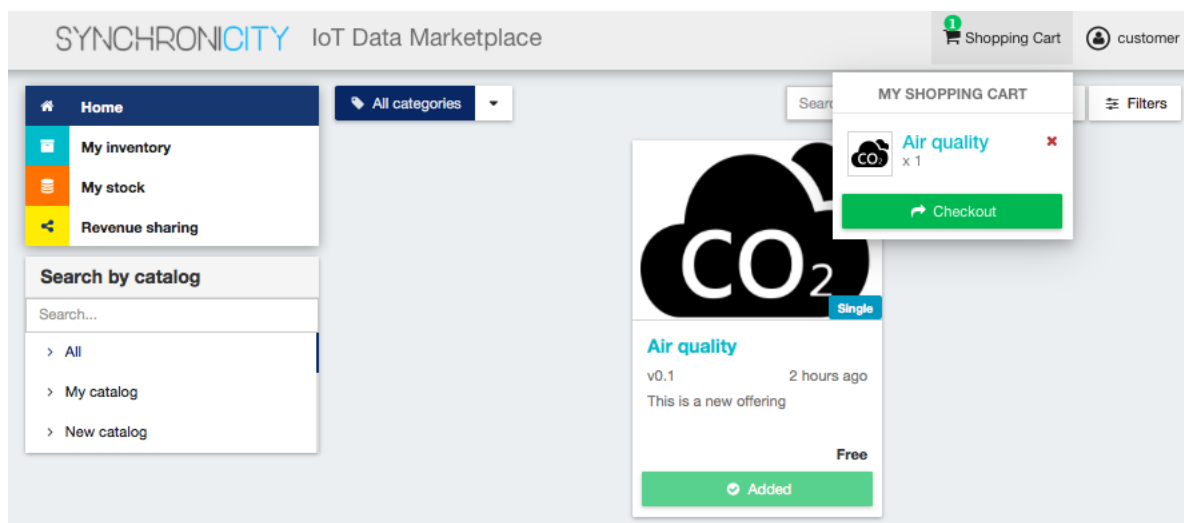


If the offering has configurable characteristics, multiple price plans or terms and conditions, a modal will be displayed where you can select your preferred options



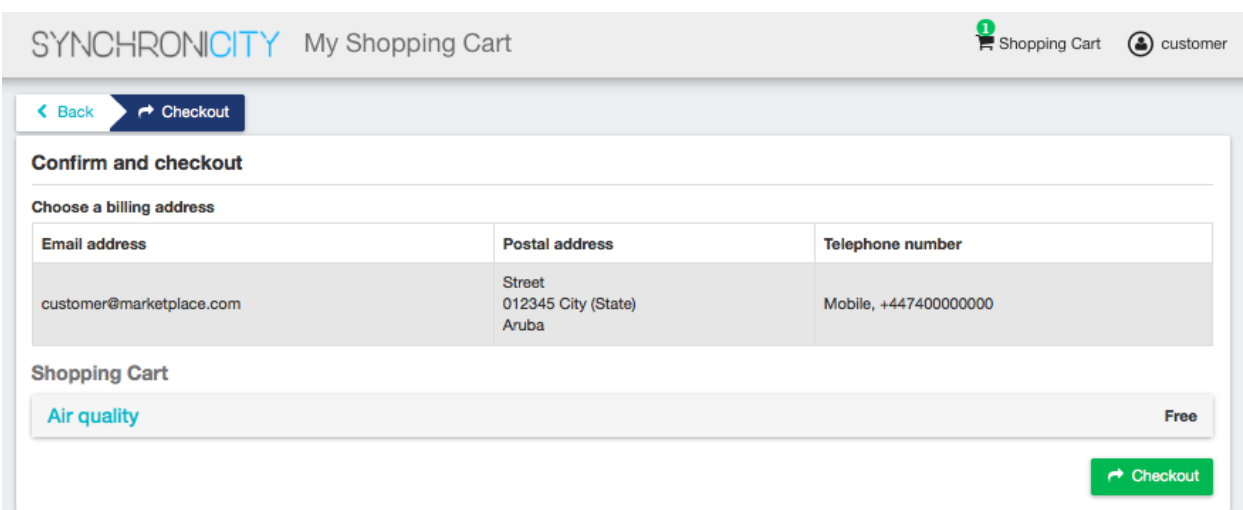


Once you have included all the offerings you want to acquire to the shopping cart, you can create the order clicking on *Shopping Cart*, and then on *Checkout*




Then, you have to select one of your billing addresses.


Once you have provided all the required information you can start the order creation clicking on *Checkout*



If the offering has a price plan, you will be redirected to *PayPal* so you can pay for the offerings according to their pricing models

Store account's Test Store



 Sesión iniciada con One Touch™ de PayPal


Bienvenido(a) de nuevo, Aitor. [¿No es usted?](#)

Enviar a

[Cambiar >](#)

Aitor Magan
calle VilamarÃ 76993- 17469, 02001, Albacete, Albacete
España


Pagar con

 Saldo de PayPal

Continuar

Podrá revisar el pedido antes de completar la compra.


Este vendedor necesita su dirección de facturación para realizar este pago.



Una forma más segura de pagar

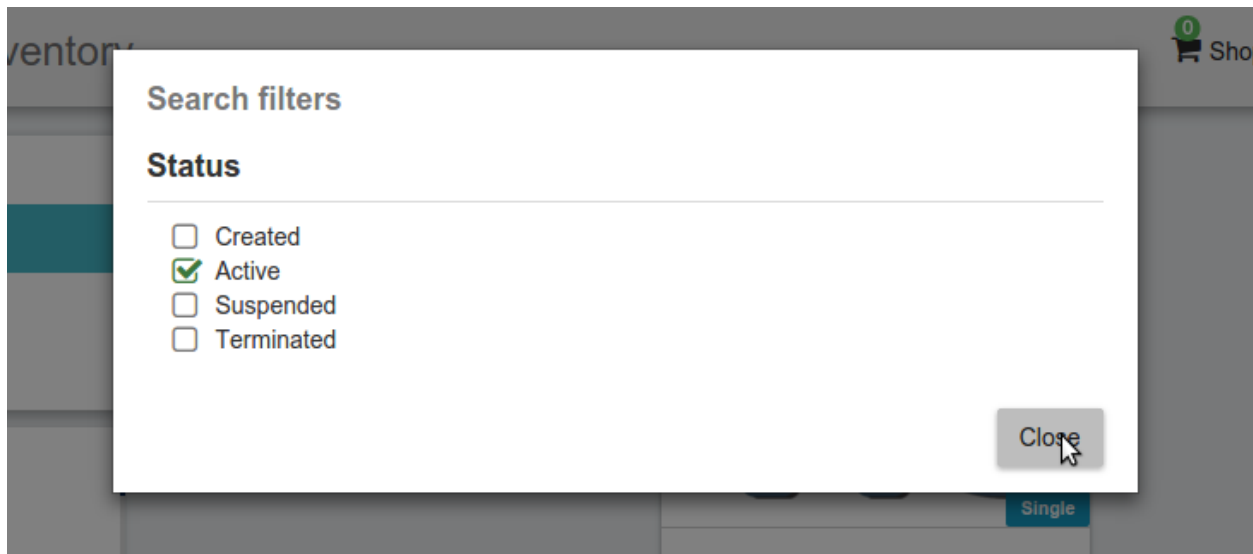
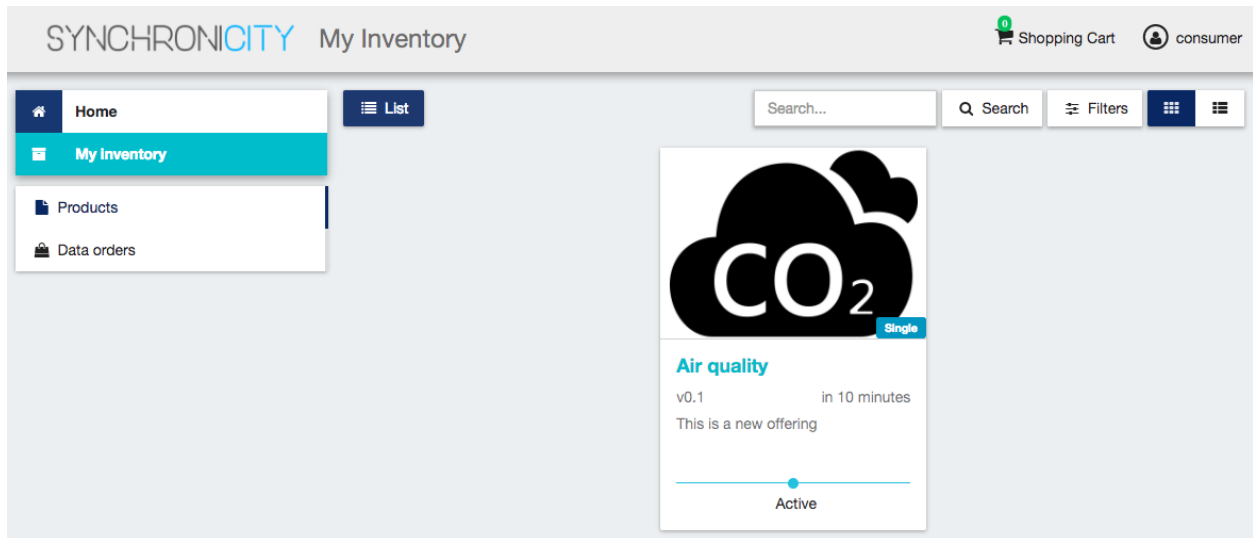
No importa dónde compre, su información está más segura con PayPal: no compartimos sus datos con el vendedor.

[Cancelar y volver a Store account's Test Store.](#)

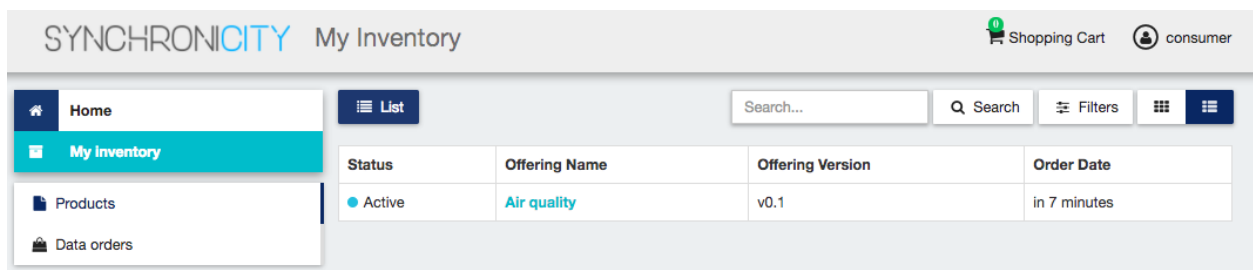
[Acuerdos legales](#) [Privacidad](#) [Opinión](#) [© 1999 - 2016](#) 

Manage Acquired Data Offerings

The data you have acquired are located in *My Inventory*, there you can list them, check their status, or retrieve the access token required to access them. In this view, it is possible to filter you data by its status. To do that click on *Filters*, select the related statuses, and click on *Close*



It is also possible to switch between the grid and tabular views using the related buttons



You can manage a specific acquired data source clicking on it. In the displayed view, you can see the general info of the acquired data source, and the characteristics and pricing you have selected.

SYNCHRONICITY

My Inventory

0

Shopping Cart

consumer

Home


My Inventory

Products

Data orders

List

Details



Air quality

About

Characteristics

Access

Price plan

Charges

General

Description

No description provided.

Offering

Air quality

Start date

in 10 minutes

Terms and condition

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<https://creativecommons.org/licenses/by/4.0/>

The screenshot displays the SynchroniCity IoT Data Marketplace interface. At the top, the header includes the SynchroniCity logo, 'My Inventory', a shopping cart icon with a '0' badge, and a user profile icon labeled 'consumer'. A left sidebar contains navigation links: 'Home', 'My inventory' (highlighted), 'Products', and 'Data orders'. The main content area features a 'List' and 'Details' toggle, with 'Details' selected. The product title 'Air quality' is accompanied by a CO₂ cloud icon. Below the title are tabs for 'About', 'Characteristics' (active), 'Access', 'Price plan', and 'Charges'. The 'Characteristics' tab contains several configuration sections, each with a description and a selected value:

- New characteristic:** This is a new characteristic. Selected: ☒ Characteristic value.
- Asset type:** Type of the data source described in this product specification. Selected: ☒ Orion Query.
- Media type:** Media type of the data source described in this product specification. Selected: ☒ NGSiv2.
- Location:** URL pointing to the data source described in this product specification. Selected: ☒ http://pep.docker:7000/v2/entities/airquality.
- Fiware-Service:** Fiware-Service of the data source described in this product specification. Selected: ☒ TenantRZ1.

Additionally, you can generate an access token for the data source accessing to the *Access* tab. To generate a new access token insert your IdM password and press the *Token* button.

SYNCHRONICITY

My Inventory

Shopping Cart

consumer

Home

My Inventory

Products

Data orders

List

Details

CO₂

Air quality

About

Characteristics

Access

Price plan

Charges

Access

To generate an access token insert your password and press Token.

Token

Password

Generate

Token

SYNCHRONICITY

My Inventory

Shopping Cart

consumer

Home

My Inventory

Products

Data orders

List

Details

CO₂

Air quality

About

Characteristics

Access

Price plan

Charges

Access

To generate an access token insert your password and press Token.

Token

us4Yaioyg71lky6um4bX9ZQRLhVmc

Password

Generate

Token

Access Acquired Data Offerings

To access and consume the data you have acquired, you first need to locate on the characteristic of your data source, the *url* pointing to that data and the *Fiware-Service*, if available, related to that data.

The screenshot shows the 'My Inventory' page for 'Air quality' in the SynchroniCity IoT Data Marketplace. The page has a sidebar with 'Home', 'My inventory', 'Products', and 'Data orders'. The main content area has tabs for 'List' and 'Details'. The 'Air quality' product is displayed with a cloud icon and 'CO₂' text. Below the product name are tabs for 'About', 'Characteristics', 'Access', 'Price plan', and 'Charges'. The 'Characteristics' tab is active, showing several configuration sections: 'New characteristic' (with a radio button for 'Characteristic value'), 'Asset type' (with a radio button for 'Orion Query'), 'Media type' (with a radio button for 'NGSiv2'), 'Location' (with a radio button for 'http://pep.docker:7000/v2/entities/airquality'), and 'Fiware-Service' (with a radio button for 'TenantRZ1'). The 'Location' and 'Fiware-Service' sections are highlighted with red boxes.

SYNCHRONICITY My Inventory

Shopping Cart consumer

Home My inventory Products Data orders

List Details

CO₂

Air quality

About Characteristics Access Price plan Charges

New characteristic

This is a new characteristic

☒ Characteristic value

Asset type

Type of the data source described in this product specification

☒ Orion Query

Media type

Media type of the data source described in this product specification

☒ NGSiv2

Location

URL pointing to the data source described in this product specification

☒ <http://pep.docker:7000/v2/entities/airquality>

Fiware-Service

Fiware-Service of the data source described in this product specification

☒ TenantRZ1

You will also need to retrieve or generate a new token as shown in the previous section.

SYNCHRONICITY My Inventory

Shopping Cart rz_test_marketplace

Home My inventory Products Data orders

List Details

CO₂

test

About Characteristics Access Price plan Charges

Access

To generate an access token insert your password and press Token.

Token: mJbTIMwfn8lYcssMP3nnAWgFViUBD

Refresh Token: ibFRhNqsiHi9huM3dG7KeNtXld5cRJ

Password:

Generate Token

Once you have these information you can use them to create your *request*. In this example we are using these information, specifically the *url*, the *X-Auth-Token*, and the *Fiware-Service* to build a *GET* request by using *Postman*. Note that the *Fiware-Service* might be optional if not present in the characteristic of your data source.

GET http://pep.docker:7000/v2/entities/airquality Params Send Save

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

Key	Value	Description
<input checked="" type="checkbox"/> X-Auth-Token	us4Yaioyg71loky6um4bX9ZQRlhVmc	
<input checked="" type="checkbox"/> Fiware-Service	TenantRZ1	

New key Value Description

Body Cookies Headers (5) Test Results Status: 200 OK Time: 300 ms Size: 334 B

Pretty Raw Preview JSON

```

1 {
2   "id": "airquality",
3   "type": "Air-Quality",
4   "co2": {
5     "type": "Float",
6     "value": 23,
7     "metadata": {}
8   },
9   "temperature": {
10    "type": "Float",
11    "value": 23,
12    "metadata": {}
13  }
14 }

```

To generate a new access token without accessing to the marketplace you can use the *Refresh Token*

SYNCHRONICITY My Inventory

Shopping Cart rz_test_marketplace

Home

My inventory

Products

Data orders

List Details

CO₂

test

About Characteristics Access Price plan Charges

Access

To generate an access token insert your password and press Token.

Token

mJbTIMwfn8lYcssMP3nnAWgFFViUBD

Refresh Token

ibFRhNqsiHi9huM3dG7KeNtXld5cRJ

Password

Generate

Token

You will also need to retrieve the *applId* related to the data source that you wish to access. You can find the *applId* on the characteristic of your data source

SYNCHRONICITY My Inventory

Shopping Cart rz_test_marketplace

Home

My inventory

Products

Data orders

List Details

CO₂

test

About Characteristics Access Price plan Charges

Asset type

Type of the data source described in this product specification

Orion Query

Media type

Media type of the data source described in this product specification

NGSiv2

Location

URL pointing to the data source described in this product specification

http://test.com/v2/entities?type=type224

appId

Application ID of the data source described in this product specification

53626045d3bd4f8c84487f77944fa586

Once you have these information you can use them to generate a new access token by performing a *POST* request on this API

```
http://[marketplace_url]:[marketplace_port]/charging/api/token/refresh
```

with header *Content-Type: application/json* and body

```
{
  "refresh_token": "ibFRhNqsiHi9huM3dG7KeNtXld5cRJ",
  "appId": "53626045d3bd4f8c84487f77944fa586"
}
```

POST proxy.docker:8004/charging/api/token/refresh Params Send Save

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

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

```
1 {
2   "refresh_token": "lbFRhNqsiHi9huM3dG7KeNtXld5cRj",
3   "appId": "53626045d3bd4f8c84487f77944fa586"
4 }
```

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 778 ms Size: 729 B

Pretty Raw Preview JSON

```
1 {
2   "access_token": "CLUqgmFYfxTNupaSuNfy9PHX7BGJSp",
3   "token_type": "Bearer",
4   "expires_in": 3600,
5   "refresh_token": "oQKQUlVCMxf5gWtrn3FiTWOA3mhd6u",
6   "scope": "all_info"
7 }
```