Connecting an environmental sensor on Opensensors.io in one minute

GreenCityZen: who are we:

GreenCityZen is an eco-startup that designs and sells technology solutions for the environmental measurement, addressed to its environmental industrial customers and the smart and sustainable cities. *GreenCityZen* develops the Humm solution "IoT for the environment" an innovative solution for the management and control of environmental sensors fleets, cost effective, scalable, and natively interoperable.

What is HummBox device:

The HummBox is a multiple sensor connected device provided by **GreenCityZen.** HummBox provides advanced IoT monitoring solution of soil moisture and temperature. Its low cost, low power and easy scalability allow to address new fields of applications such as rainwater management performance in smart cities, irrigation precisions and decision for golfs, green areas and agriculture.

What is opensensors.io:

OpenSensors.io is an open platform for collecting sensor data generated by the Internet of Things. The company helps people share their data and put it to use.

Overview:

In order to manage and treat efficiently the data sent by your HummBox device, this recipe offers you a way to supervise your data instantly, graph it and also play with node Red service and create mail alerts.

Requirements:

HummBox Device ID.

Opensensors.io account.

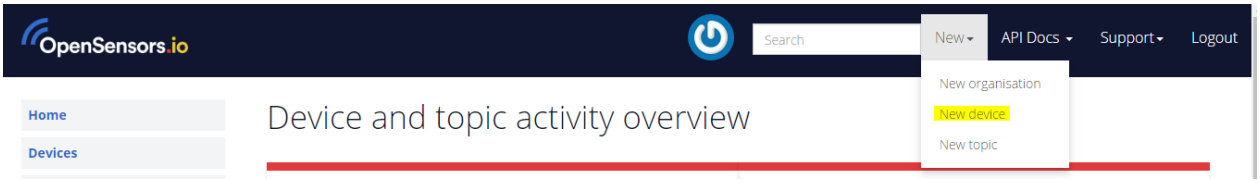
Audience and Skill level:

Audience: companies looking for to use sensor io as their IoT platform and having a need for hardware sensor solution.

Beginner: This recipe is done for GreenCityZen customers.

Step 1: Create your own account and create your device:

1-Connect to https://www.opensensors.io .
2-Create your account then log in to the site.
3-Create a new Device by selecting "New" from the banner at the top of the page. Choose Device from the drop down menu.



4-Press "New device" to open the Device creation page. You have the option to give this device a name, tags, location and description metadata.
5-You will be provided a **client ID (**which is your device ID) and password, in order to subscribe to the topic.
6-Make sure that you save your Client ID and your device password.

Step 2: Get your device data:

In order to get your device data we will provide you four ways to do this.

1- Your device URL:

The simplest way to get your data instantly is to enter to this URL:
https://www.opensensors.io/topics/orgs/gcz_opendata
Then you will find your topic which match with your GreenCityZen device ID.

Example for the device 1BC02 the URL is:
https://www.opensensors.io/topics/orgs/gcz_opendata/green cityzen r&d/hummbox_1bc0e
(The topic is: /orgs/gcz_opendata/green cityzen r&d/hummbox_1bc0e)

2- Using mosquitto:

The second way to get your data instantly is to use your command line and mosquitto service.
First you should install mosquito from http://mosquitto.org/download/, then enter the directory mosquitto using the command line and enter this command:

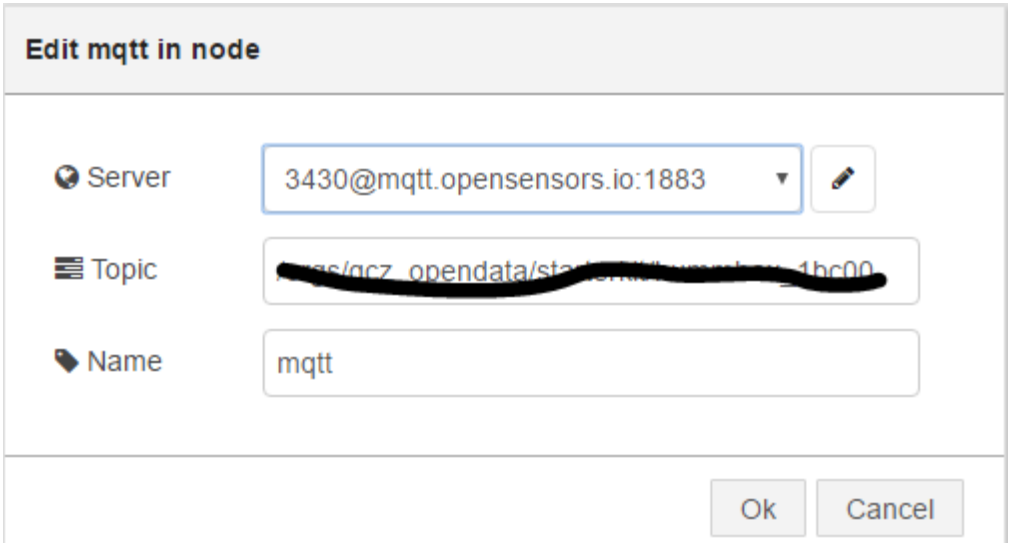
mosquitto_sub -h mqtt.opensensors.io -i ClientID -t topic -u username -P device_pwd

You have to change the red fieds by the correspond information:
Client_ID: The client_ID you got after creating your device (*see step 1*)
topic: you find your topic in the dashboard of GreenCityZen organization in Opensensors.io
username: Opensensors.io account username.
device_pwd: The password you got after creating you device (*see step 1*)

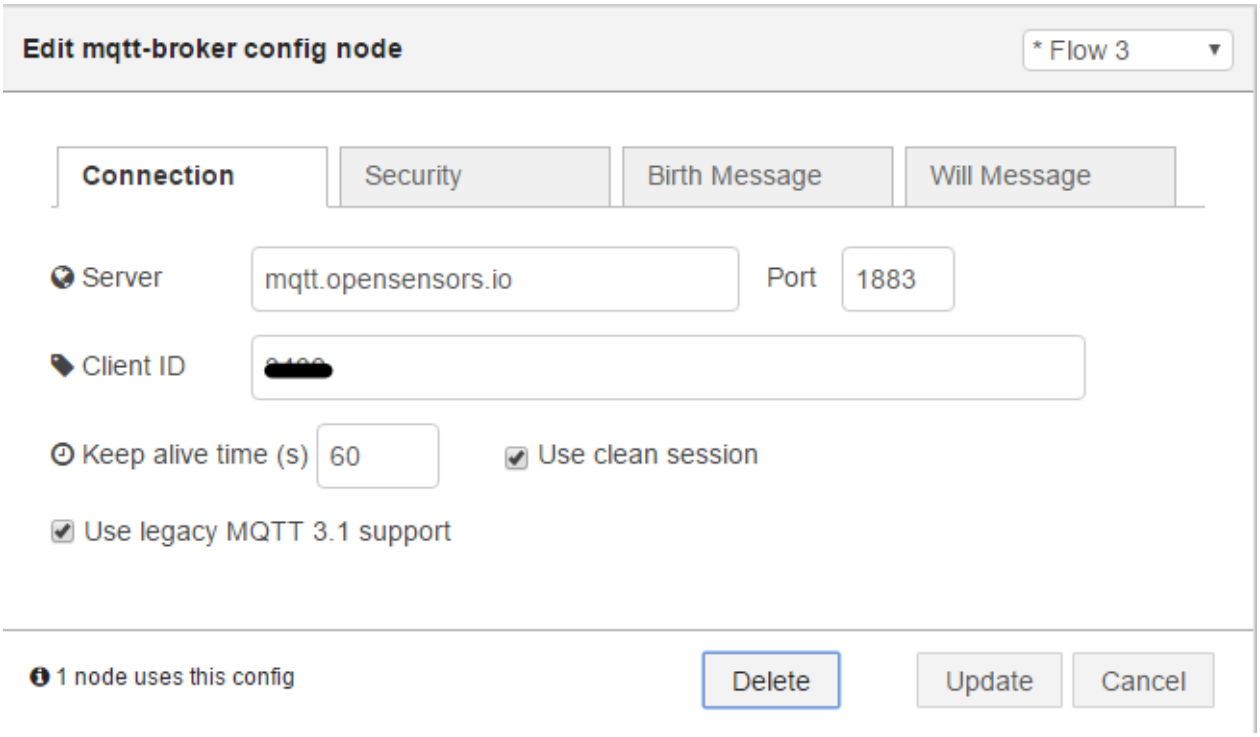
3- Using node red service:

a. Go to http://nodered.org/docs/getting-started/installation and choose the correspond node Red installation to your operation system.
b. Once installed, lunch node red with your command line.
We will propose you a simple schema to visualize your flow of data:

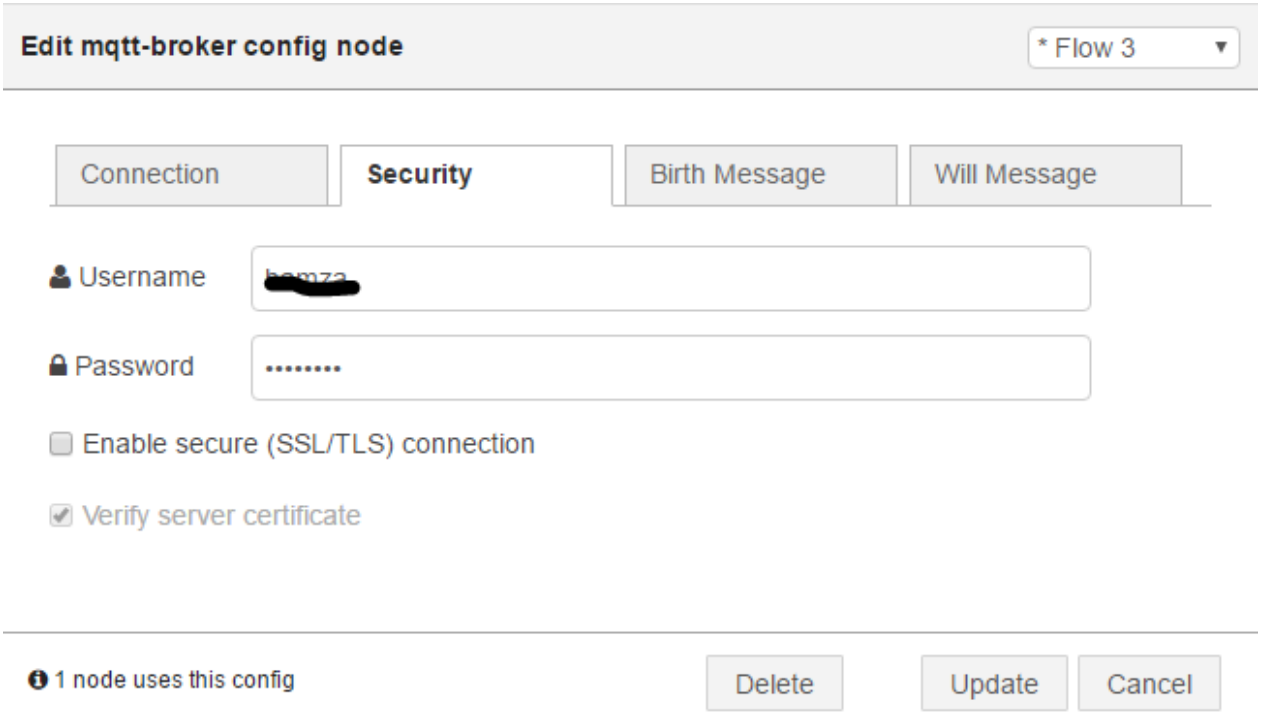
c. First step add an **mqtt input** node onto the canvas. Double click on the node to edit the configuration. Set the following properties:



Add the topic to which you want to subscribe.
Then press the pen next to server:

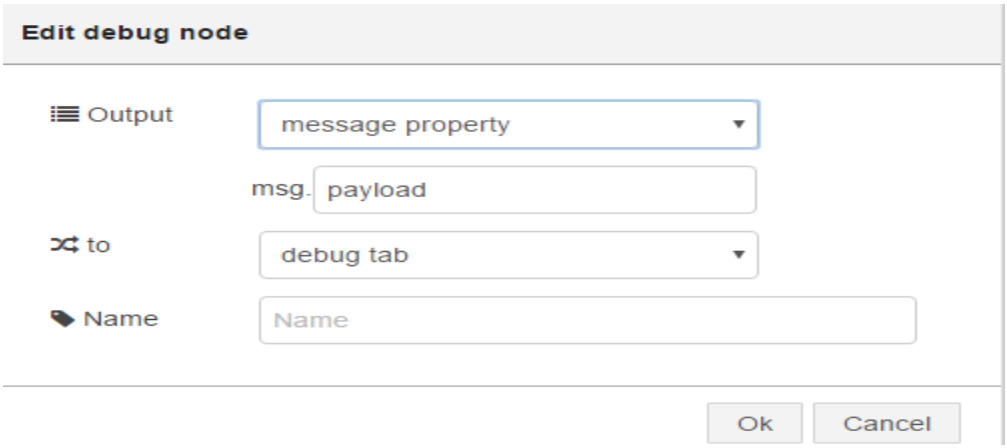


Here you find several windows, we start with the first one *connection,* in this window you have to insert the server name: **mqtt.opensenosrs.io** and your client ID.

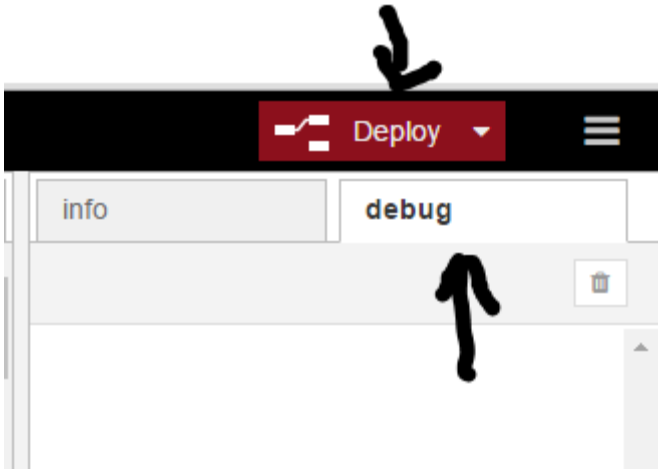


In the security window you have to enter your opensensors.io Username and the password of your device.
And that is all for the mqtt node.

d. Then add a debug node and wire it to the mqtt input node and configure it like shown below:



Finally press debug and deploy to start receiving your data:

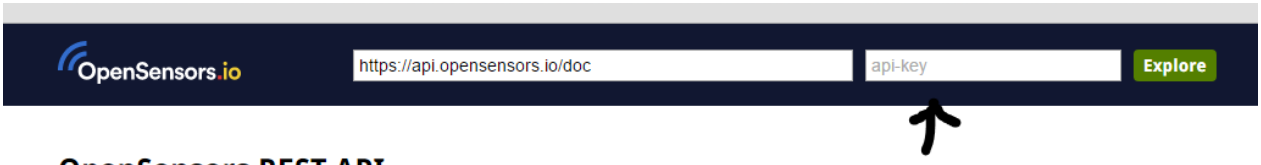


If you want to setup an email alert using node red you can see our second recipe: "How to connect your HummBox to Node-Red (using MQTT)"

4- Using the API service:

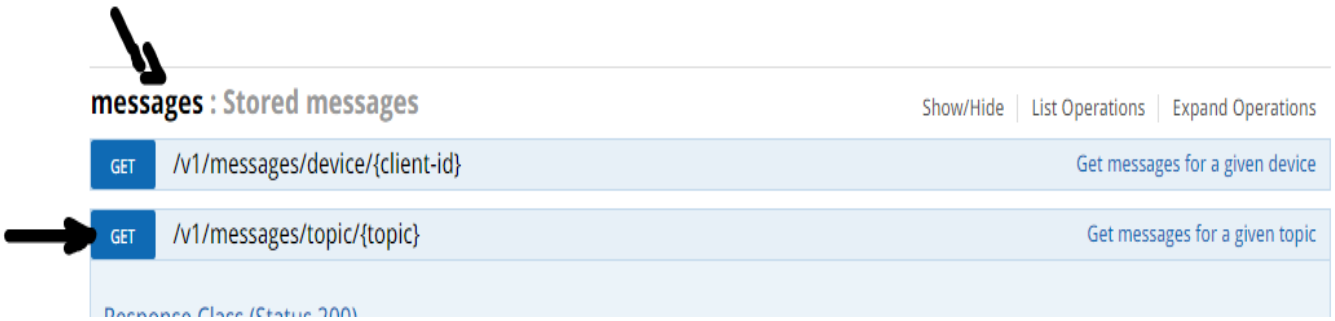
Opensensors.io provides each user with an API key which he can use to get data via https://api.opensensors.io/index.html .
In this case we can have all the historical messages sent.

a. Go to https://www.opensensors.io/my-account/profile and get you API key (***save it***)
b. Access to the site https://api.opensensors.io/index.html and enter your API key in the appropriate place, the press *explore*:

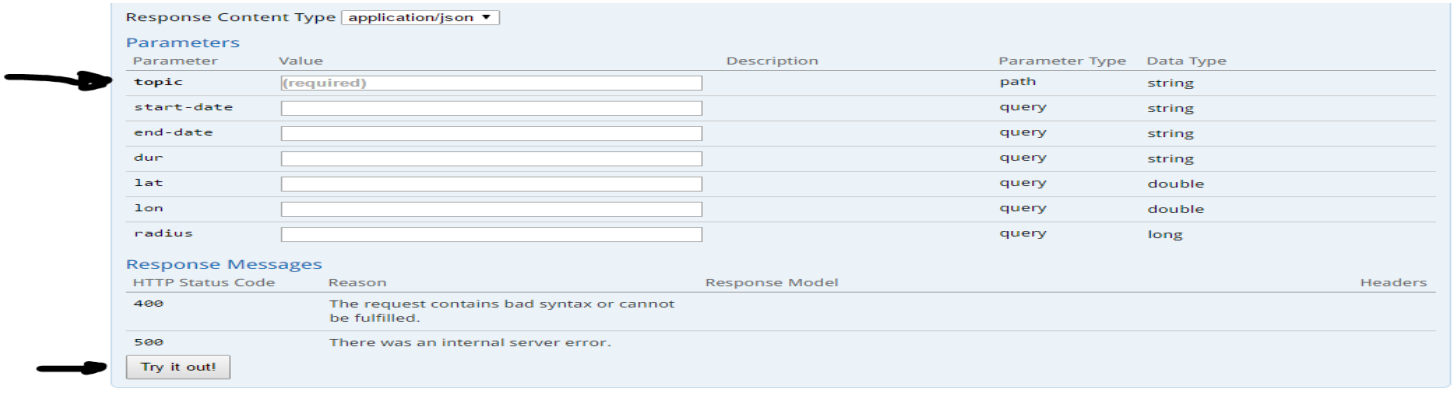


OpenSensors REST API

c. Then go to **messages** and press **get message for a given topic:**



d. At this step you have to provide several information, but you can only add the topic you which you want to subscribe, then press try it out to get your result:



Step 3: Get GreenCityzen open data:

The simplest way to see instantly all the data sent from HummBox devices is to access to:

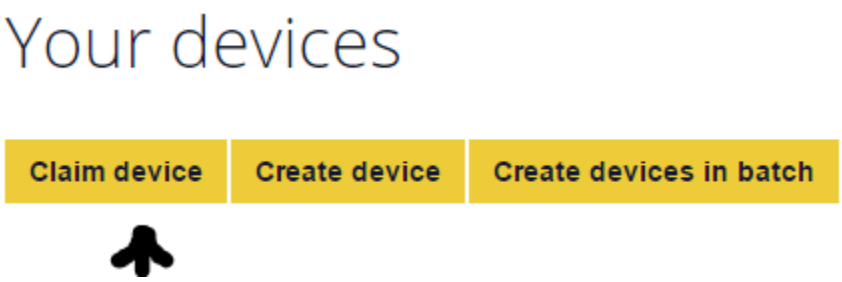
https://www.opensensors.io/orgs/gcz_opendata

But we can do this using mosquito and node red by putting the topic: **/orgs/gcz_opendata/#**

Step 4 optionally: if you want to see the status of your Hummbox Device:

In order to see you device state at your opensensors.io Dashboard, you can claim it by doing these steps:

- Connect to your opensesnors.io account
- Go to devices.
- Press claim a device.



- Enter your device ID (*from your HummBox*) and your device location.

Now you can see your device status.

Also in order to get your device data, go to the site https://api.opensensors.io, enter your API key, select get message for a given device and enter your device ID, then you will get all the message sent by your device.