Heltec Automation Docs

Release V0.0.1

Sep 04, 2020

Cloud Server

This is the documentation for Heltec Cloud Server .

CHAPTER 1

Cloud Server Quick Start

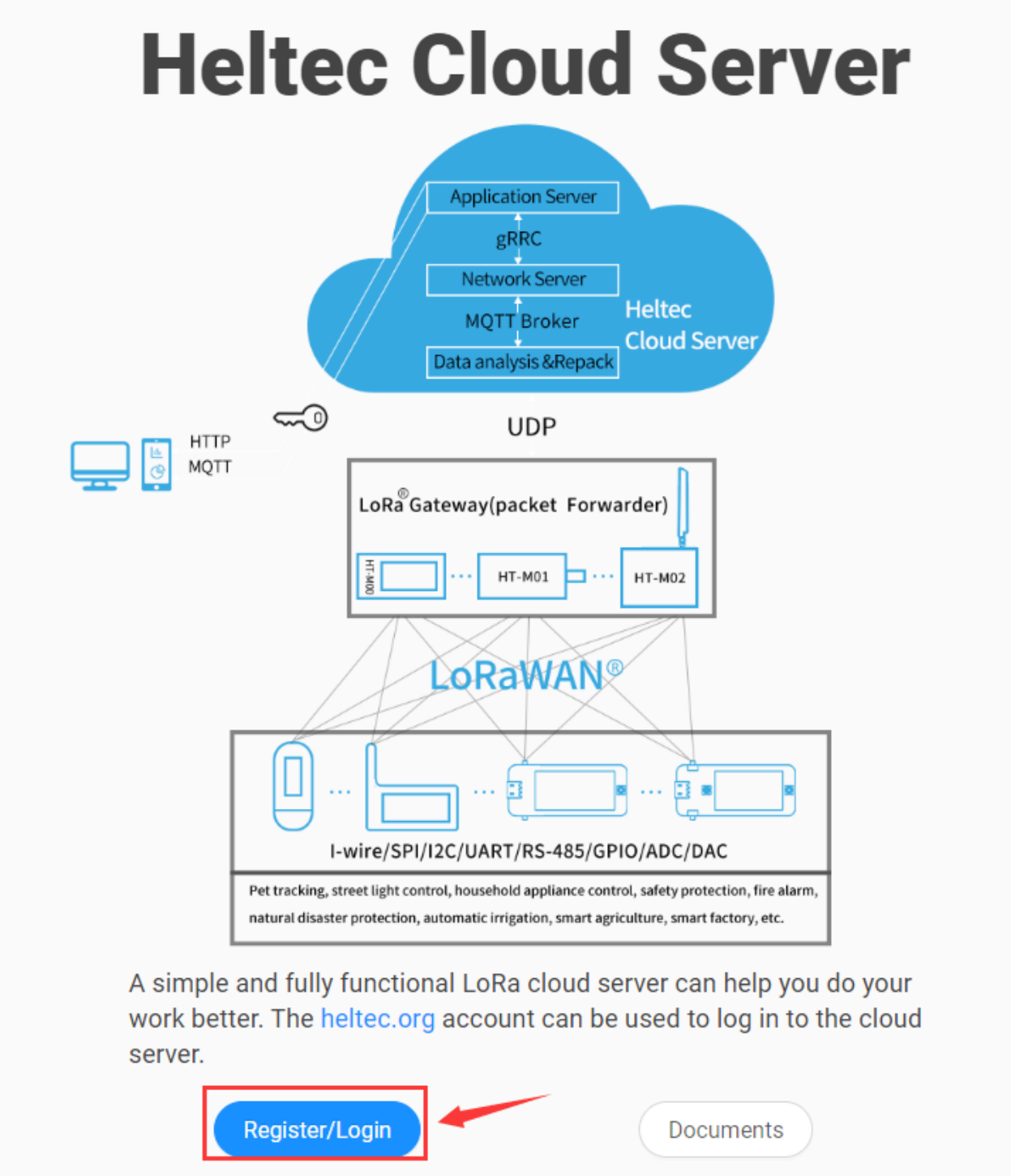
1.1 Summary

Cloud Server is a simple and fully functional LoRa cloud server. This page shows how to use this cloud server quickly.

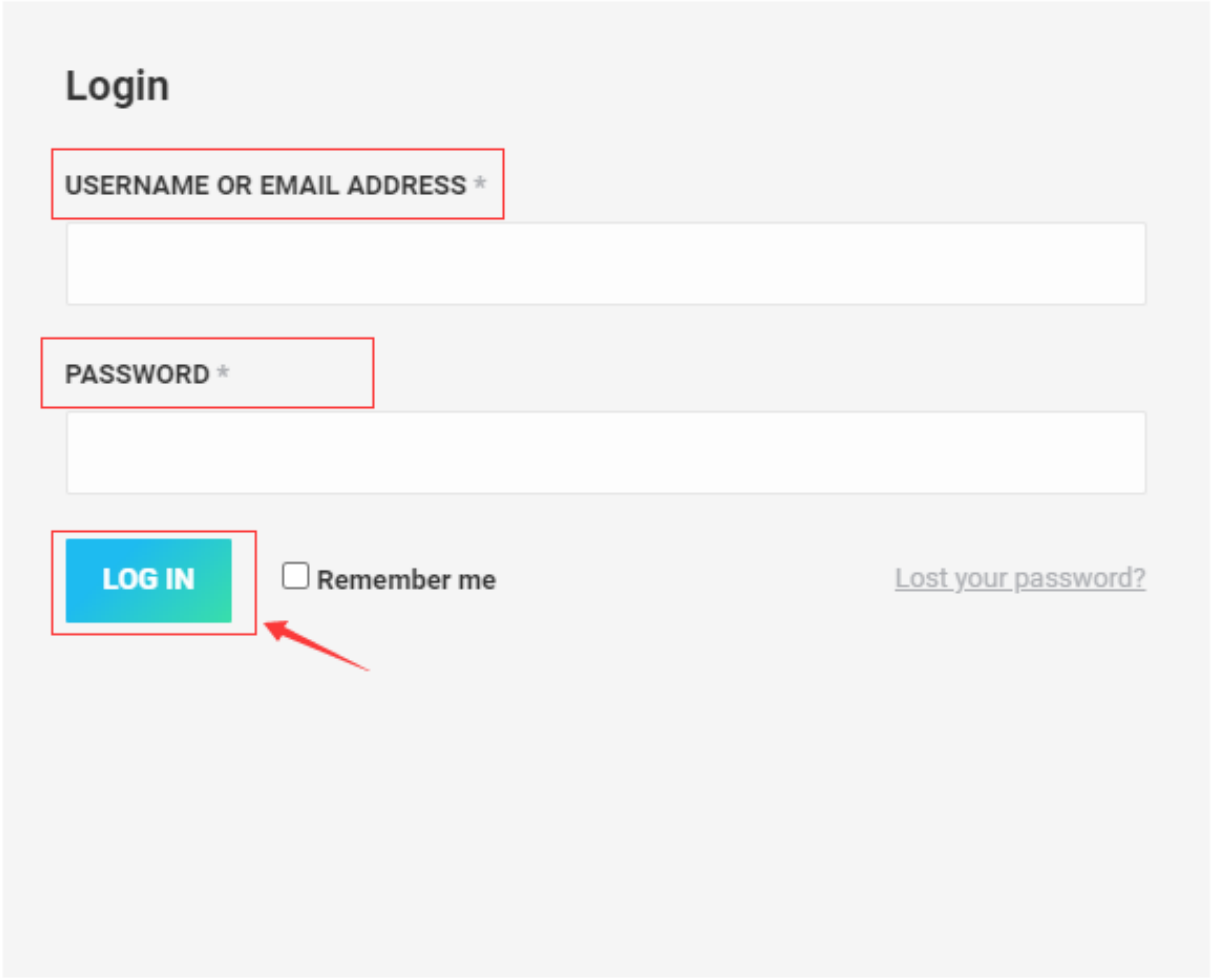
Tip: Official website account, forum account and cloud server account can be logged in after activation.

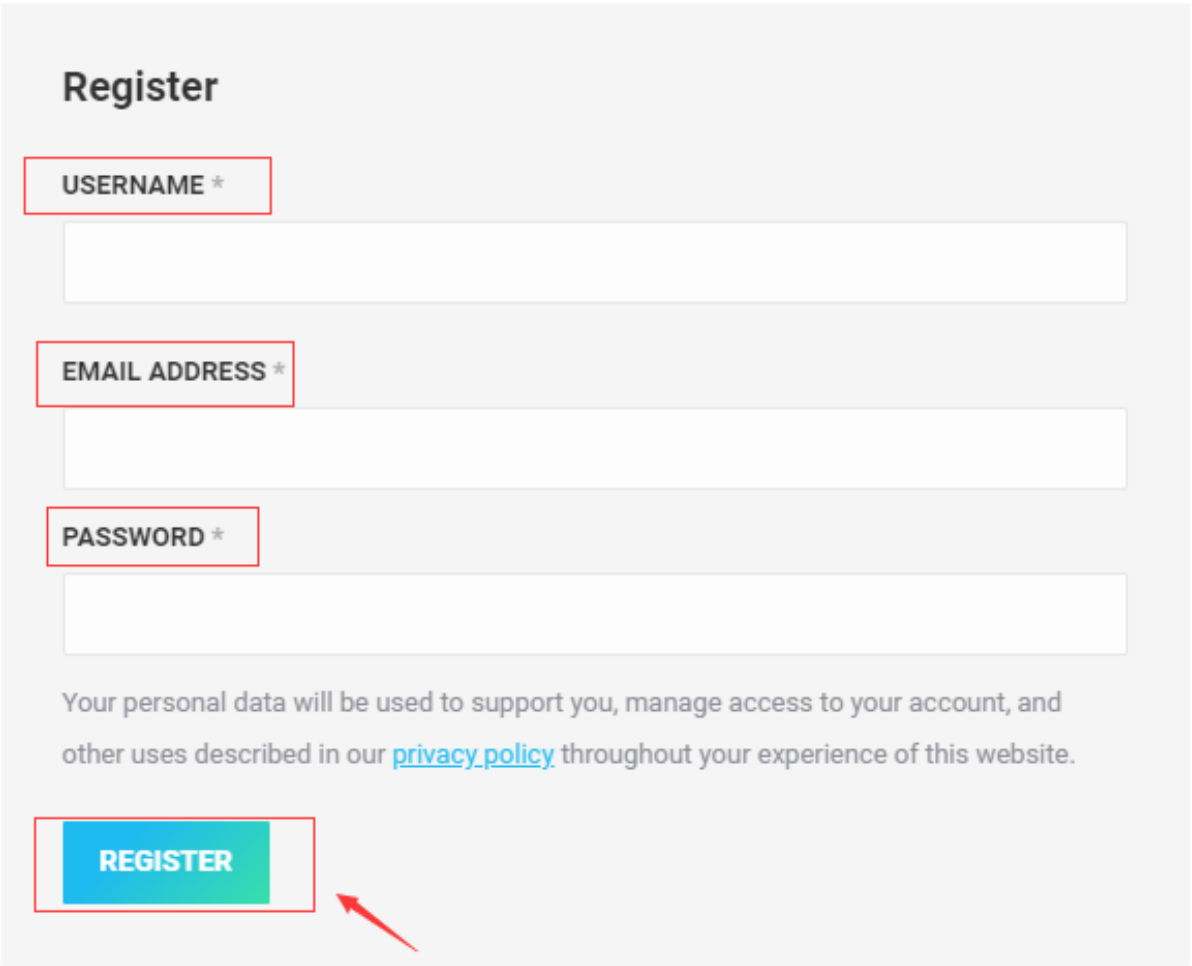
1.2 Login/Register

Open the `Browser`, enter the URL http://cloud.heltec.orgyou will see the following interfaceclick `Register/Login`



If you already have a heltec.org account, you can enter the correct user name and password directly and click `LOG IN` . If you don't have an account, you need to reister first. Enter the user name, email address and password. Click `REGISTER` to complete the registrationand you can log in successfully.


Login
USERNAME OR EMAIL ADDRESS *
PASSWORD *
LOG IN
Remember me
Lost your password?



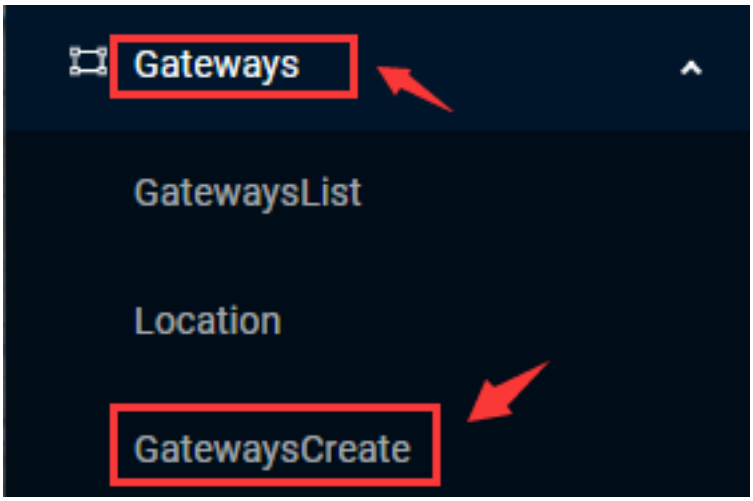
Tip: If you still cannot log in after successful registration, you can try to log out of the account and log in again.

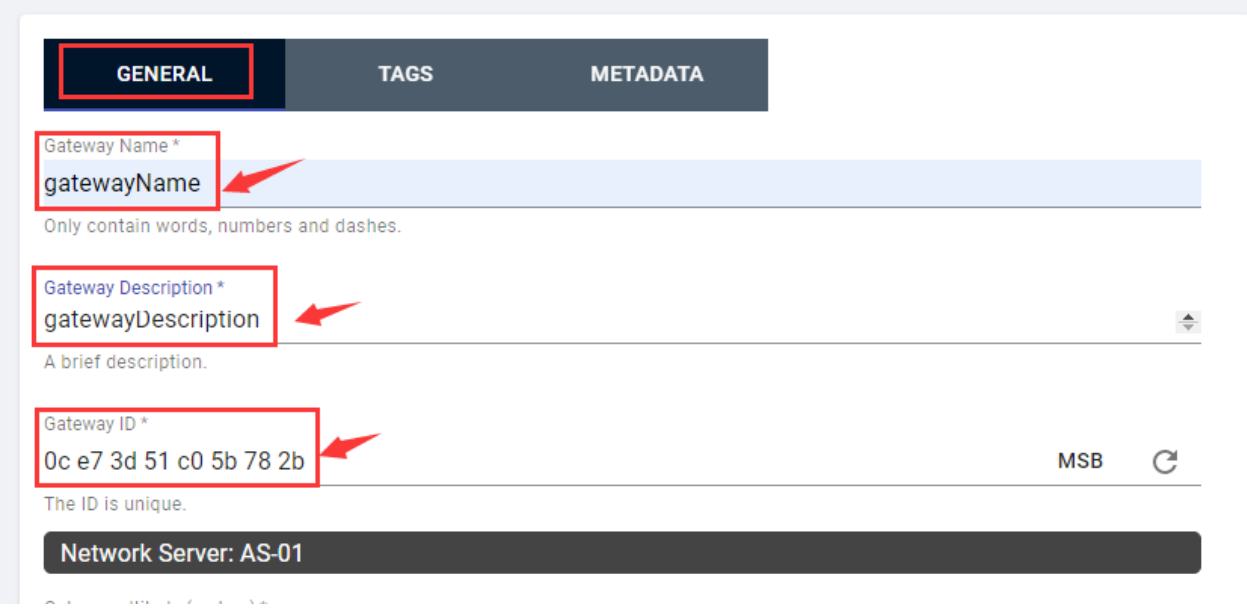
1.3 Select Frequency Band

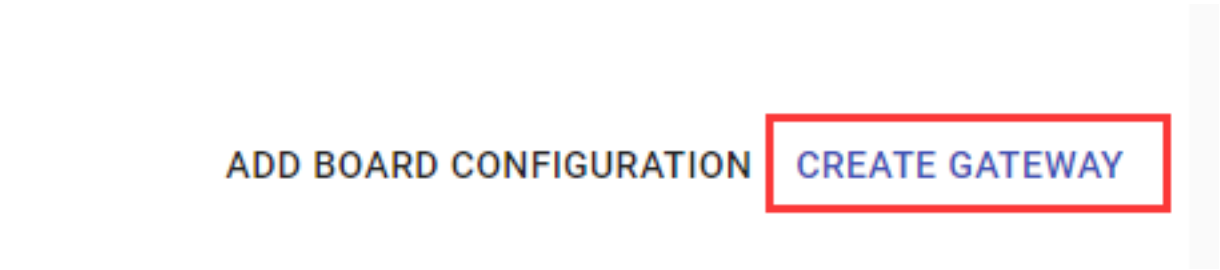
After entering the paltform, select the regional frequency band you need, such as `AS923` .

1.4 Create Gateway

Click `Gateways->GatewaysCreate` Select the `GENERAL` menu and fill in the corresponding information. The following three options are required and the remaining options are optional. Finally, slide to the bottom of the page and click `CREATE GATEWAY` to complete the gateway creation. Here is an example.

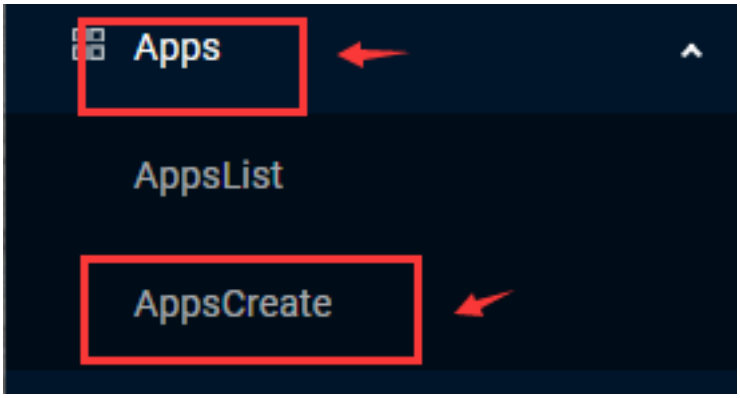


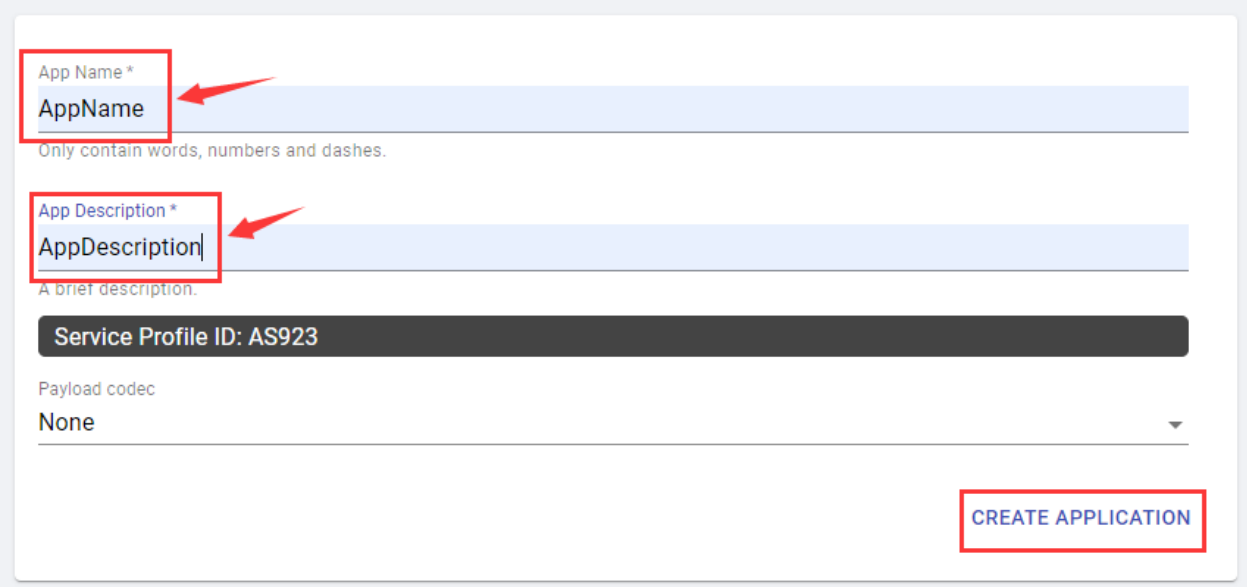




1.5 Create Application

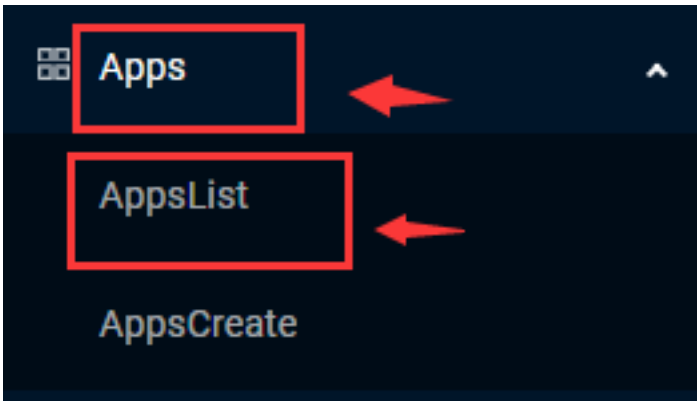
Click `Apps->AppsCreate` fill in the corresponding information. The following two options are required and the remaining options are optional. Click `CREATE APPLICATION` to complete creation. Here is an example.

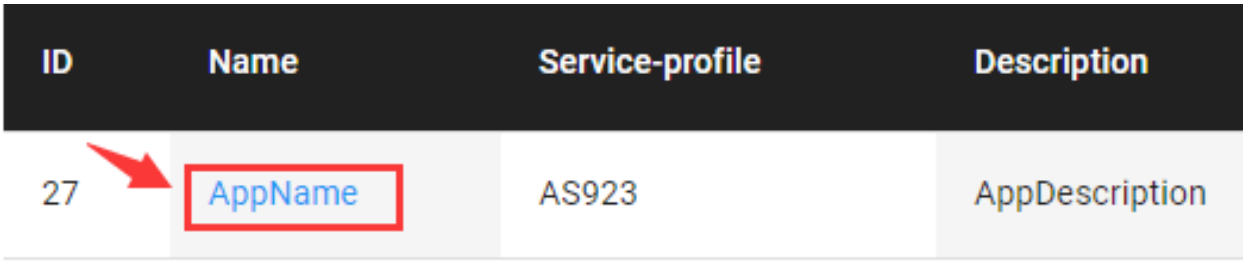




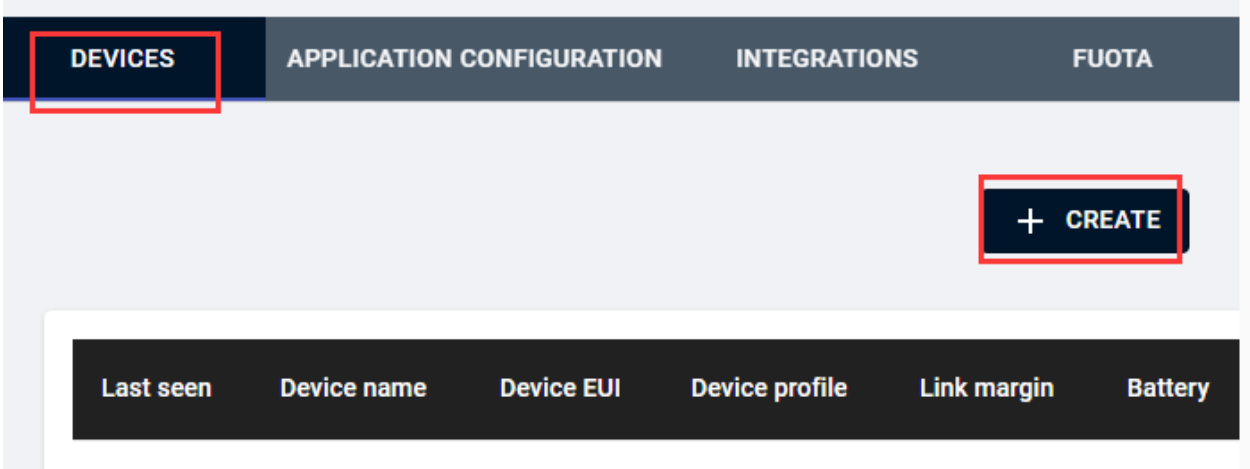
1.6 Create Device

Click `Apps->AppsList` You will see the application we created before (the `AppName` in the example)and click it.

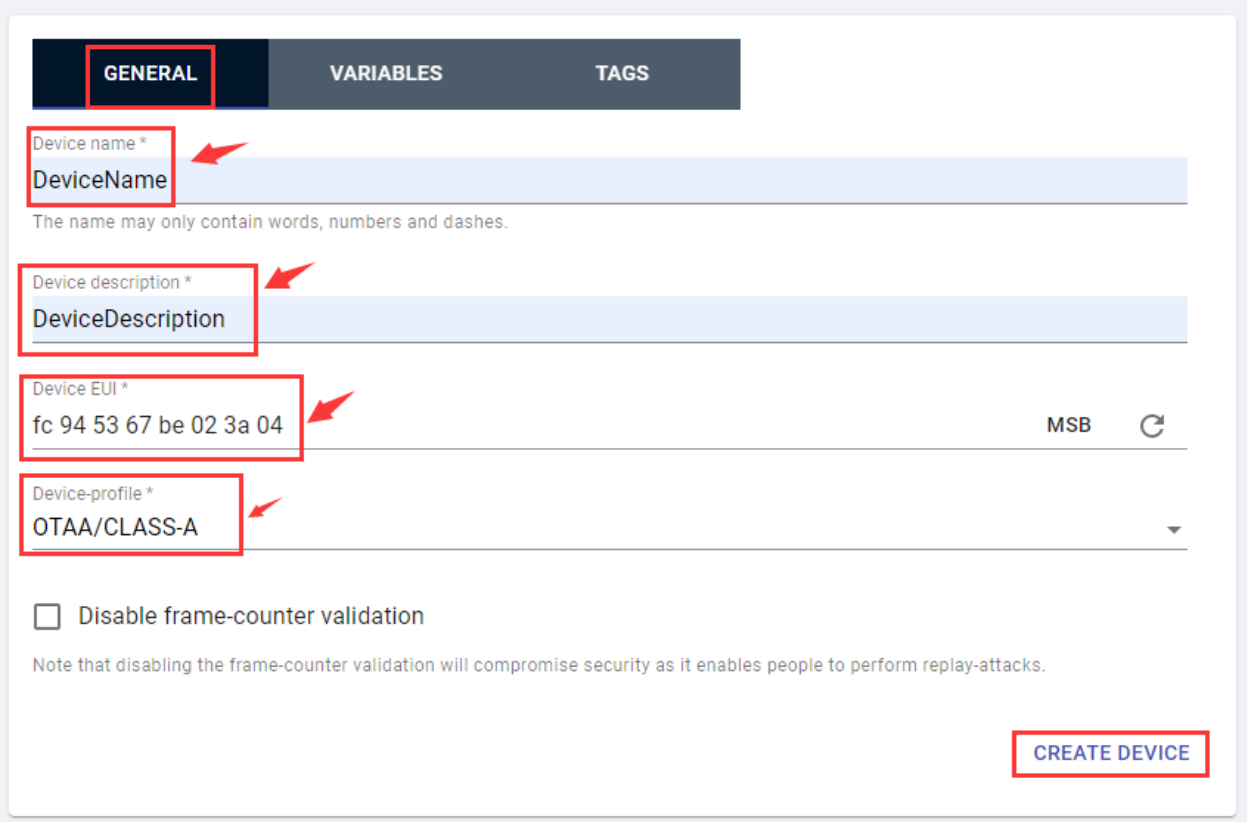




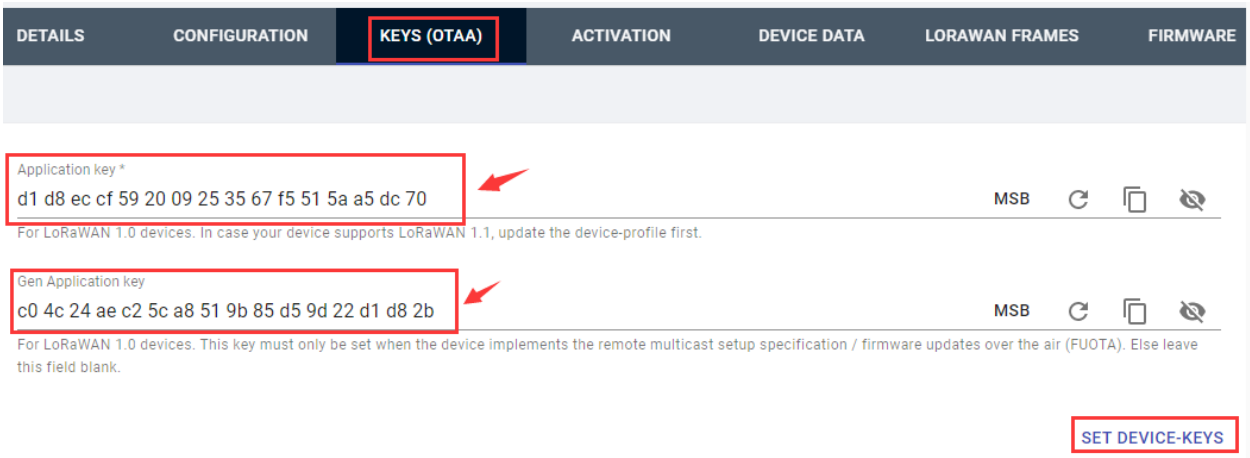
Select `DEVICES` menuClick `CREATE` to create device.



Select `GENERAL` menu fill in the corresponding informationThe following four options are required and the remaining options are optional. Click `CREATE DEVICE`



Fill in the required `Key` or `LoRa Protocol` information according to the selected `Device-profile` option. For example, in this example, select `Device-profile` as `OTAA/CLASS-A` , as shown below


DETAILS
CONFIGURATION
KEYS (OTAA)
ACTIVATION
DEVICE DATA
LORAWAN FRAMES
FIRMWARE
Application key *
d1 d8 ec cf 59 20 09 25 35 67 f5 51 5a a5 dc 70
MSB
For LoRaWAN 1.0 devices. In case your device supports LoRaWAN 1.1, update the device-profile first.
Gen Application key
c0 4c 24 ae c2 5c a8 51 9b 85 d5 9d 22 d1 d8 2b
MSB
For LoRaWAN 1.0 devices. This key must only be set when the device implements the remote multicast setup specification / firmware updates over the air (FUOTA). Else leave this field blank.
SET DEVICE-KEYS

CHAPTER 2

MQTT Subscribe

This is the document of Heltec Cloud Server and MQTT message subscription.

2.1 MQTT Subscribe Quick Start

2.1.1 Summary

MQTT is a publish / subscribe protocol based on TCP / IP, which can connect a large number of remote sensors and control devices. It is a lightweight message subscription and publishing protocol.

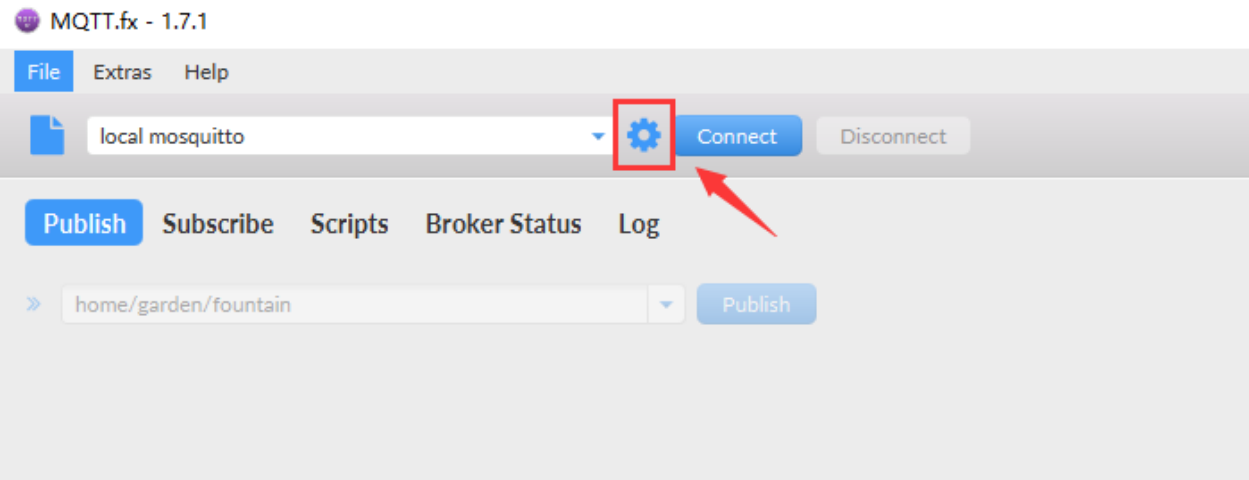
Tip: The software version used in this example is MQTT.fx 1.7.1 and python 3.8.5

2.1.2 Use MQTT.fx Subscribe To Messages

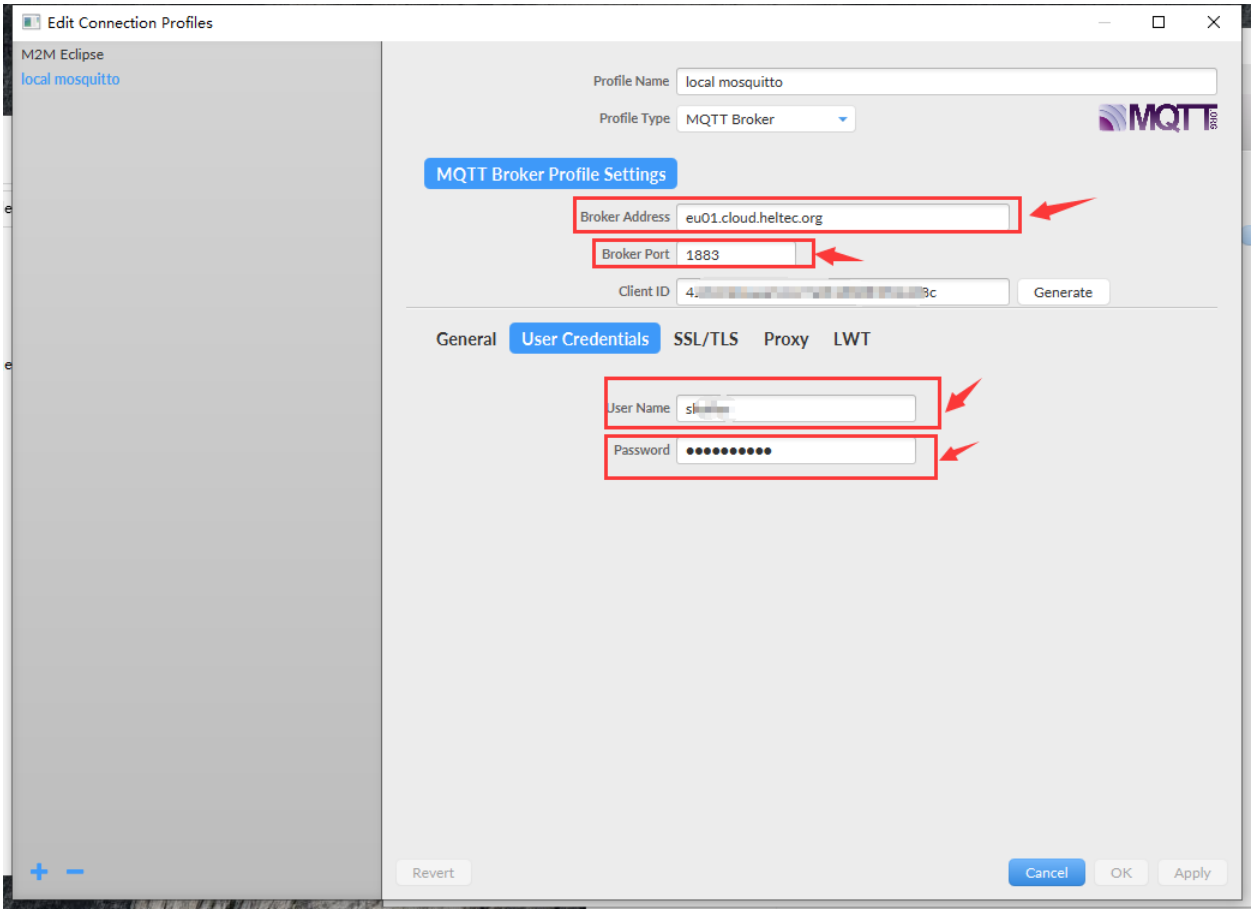
Download MQTT.fx

MQTT Access To Cloud Server

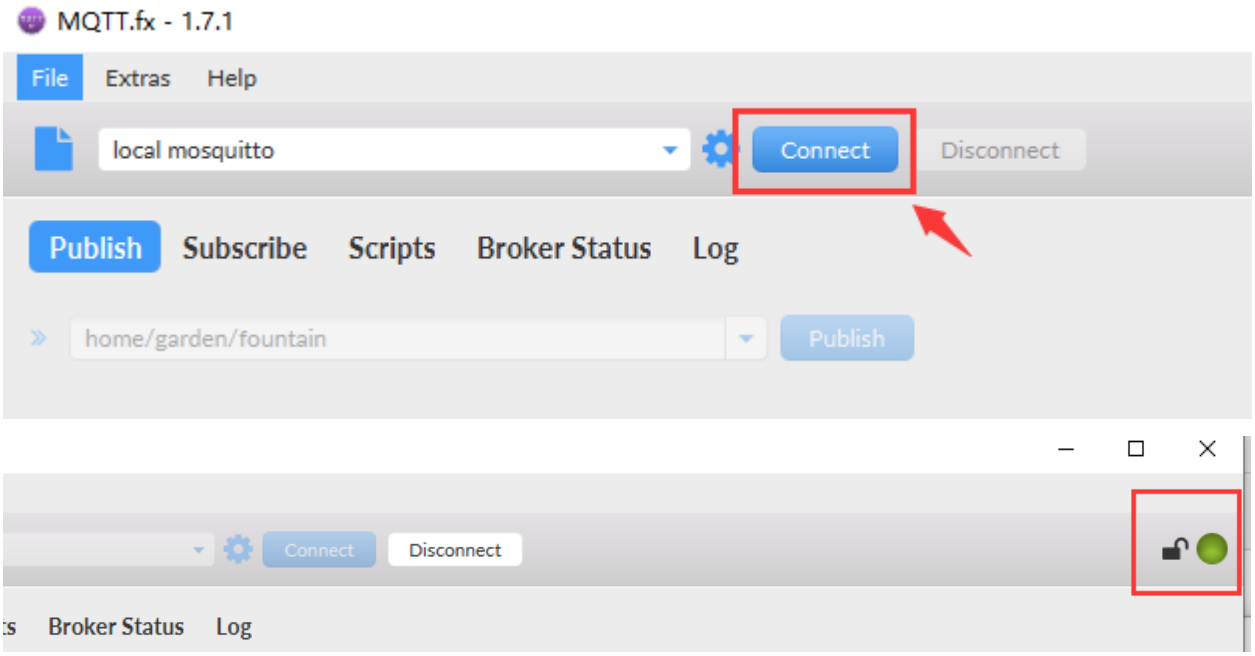
Click the button shown below to configure the connection information.



Enter the information, where `Broker Address` is the server address corresponding to selected frequency band ,the port number is `1883` select `User Credentials` to enter account and passwordand click `OK` .

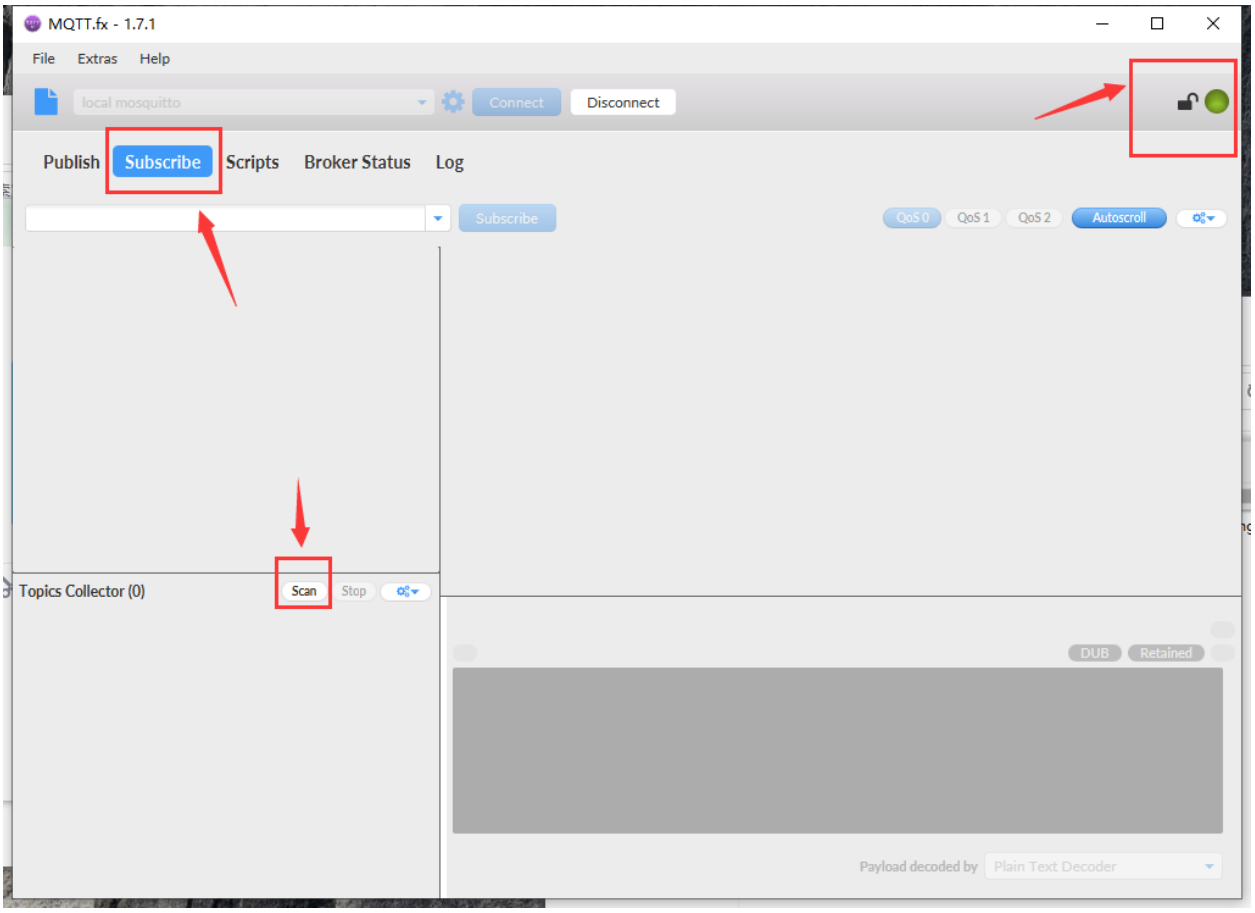


Click `Connect` to connect to the server. After successful connection, it will be displayed in green on the right.

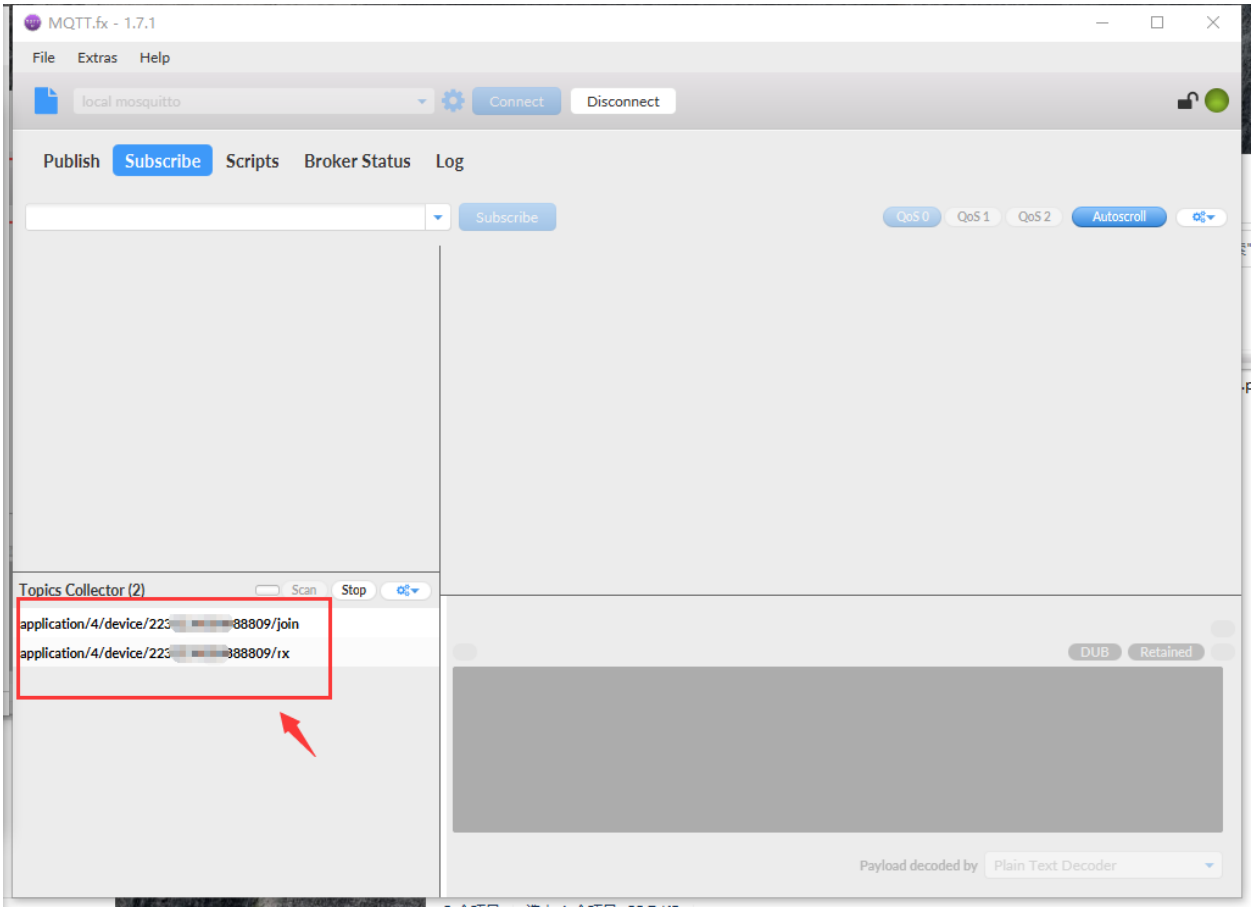


Subscribe To Messages

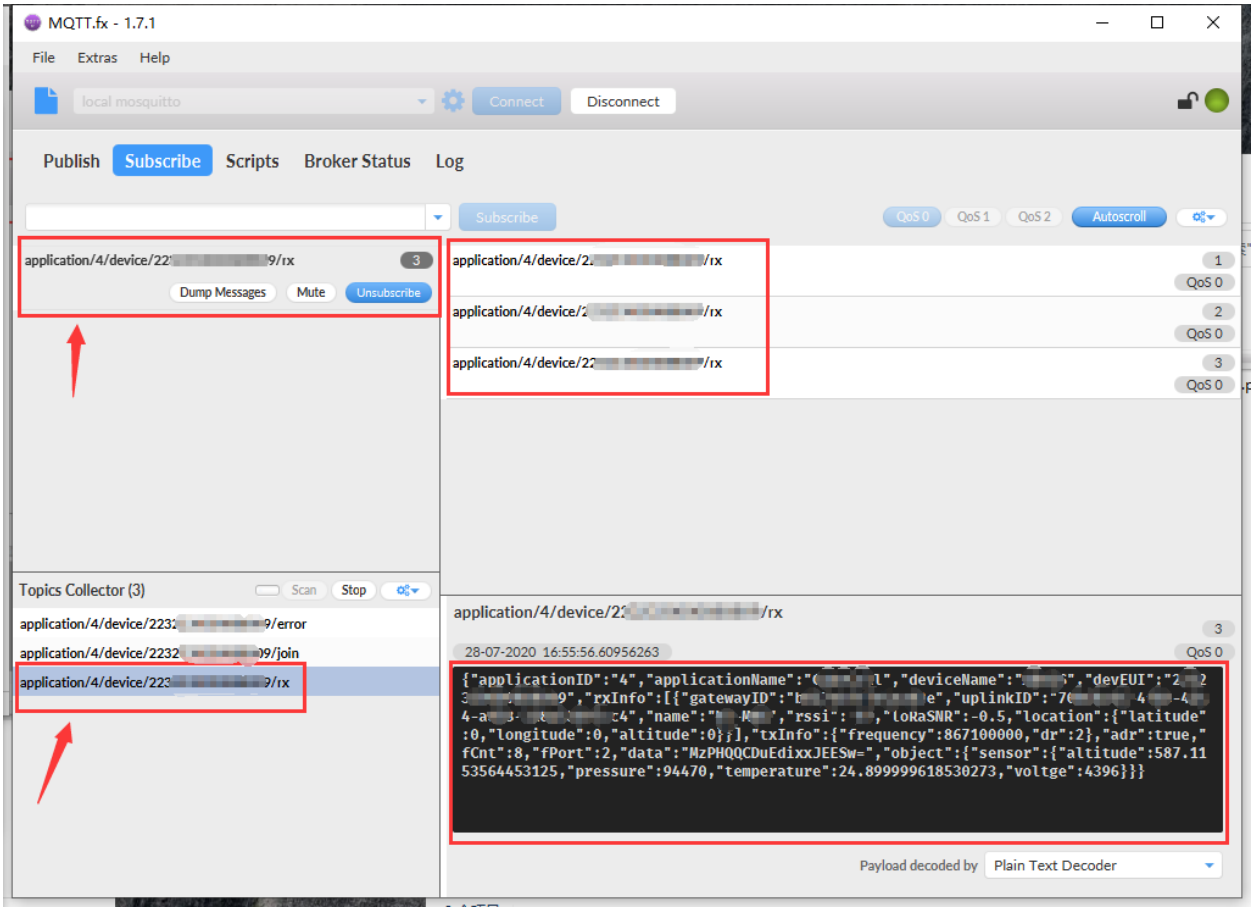
Click `Subscribe` -> `scan` , Wait for the `nodes` that access the Cloud Server to transmit data.



When a `node` uploads data, information will be scanned in the scan column.



Select one as your subscription information. When there is a matching subscription information uploaded, it will be displayed in the data column. The following example subscribes to `application/4/device/22.....09/rx`



2.1.3 Subscribing To MQTT Using Python

After you Download Pyhton , you need to enter `pip install paho-mqtt python-etcd` in the terminal to install the module.

Information Configuration

Change the following data to the account and password for accessing the Cloud Server .

```
def client_loop():
    client_id = time.strftime('%Y%m%d%H%M%S',time.localtime(time.time()))
    client = mqtt.Client(client_id)
    client.username_pw_set("
    client.on_connect = on_connect
    client.on_message = on_message
    client.connect(HOST, PORT, 60)
    client.loop_forever()
```

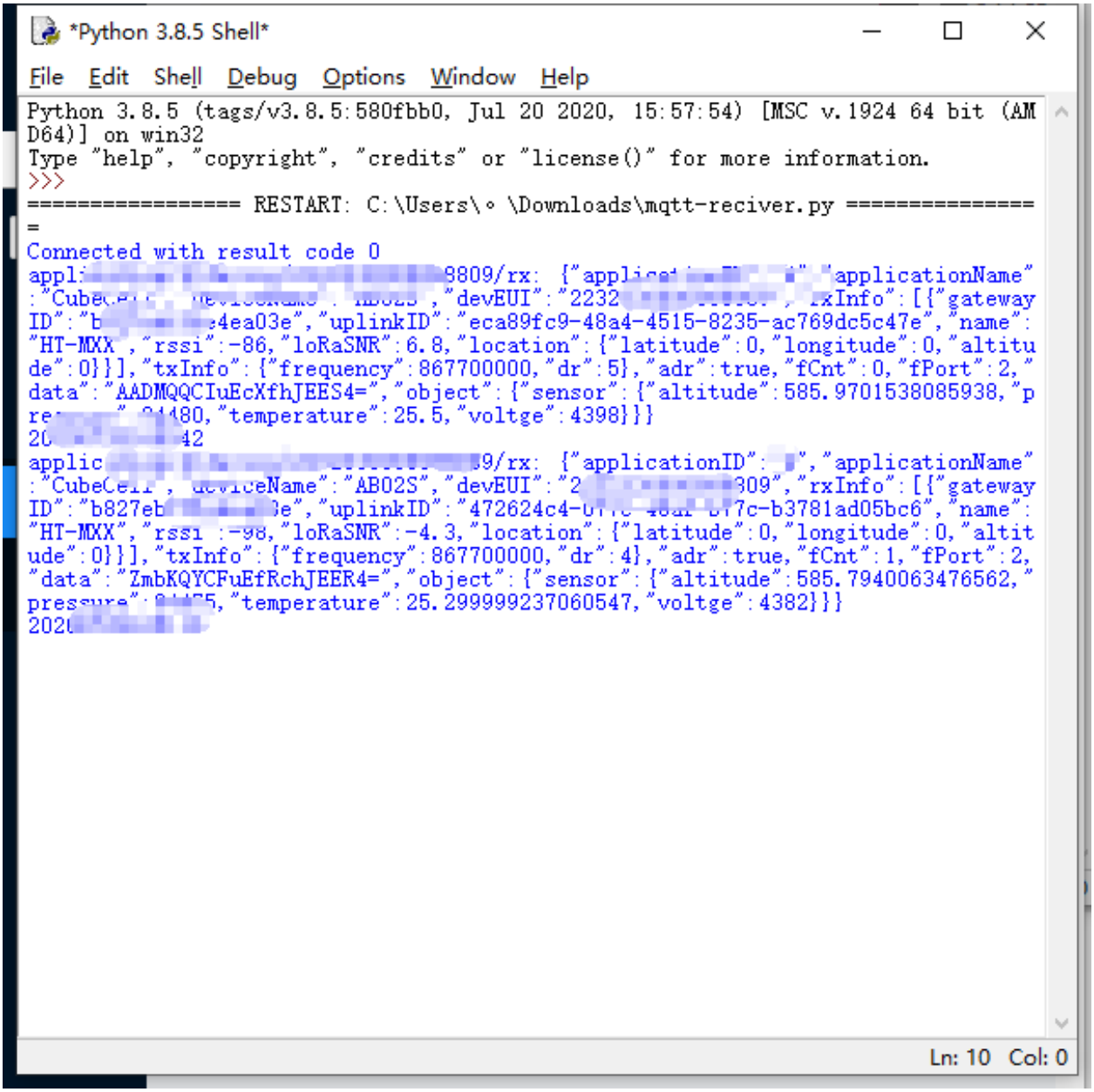
Modify the following data to the content you want to subscribe to.

```
def on_connect(client, userdata, flags, rc):
    print("Connected with result code "+str(rc))
    client.subscribe("application/4/device/223[redacted]09/rx")
def on_message(client, userdata, msg):
```

Modify host to the server address of the selected frequency band, and the port number is 1883 by default.

```
if __name__ == '__main__':
    HOST = "eu01.cloud.heltec.org"
    PORT = 1883
    client.loop()
```

Run Python


Python 3.8.5 Shell
File Edit Shell Debug Options Window Help
Python 3.8.5 (tags/v3.8.5:580fbb0, Jul 20 2020, 15:57:54) [MSC v.1924 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:\Users\ \Downloads\mqtt-reciver.py ==========
Connected with result code 0
Ln: 10 Col: 0