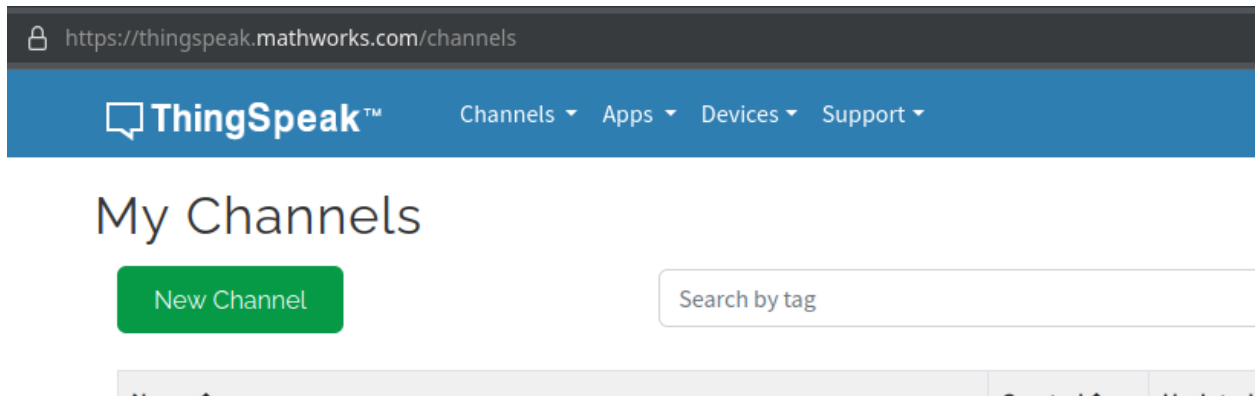
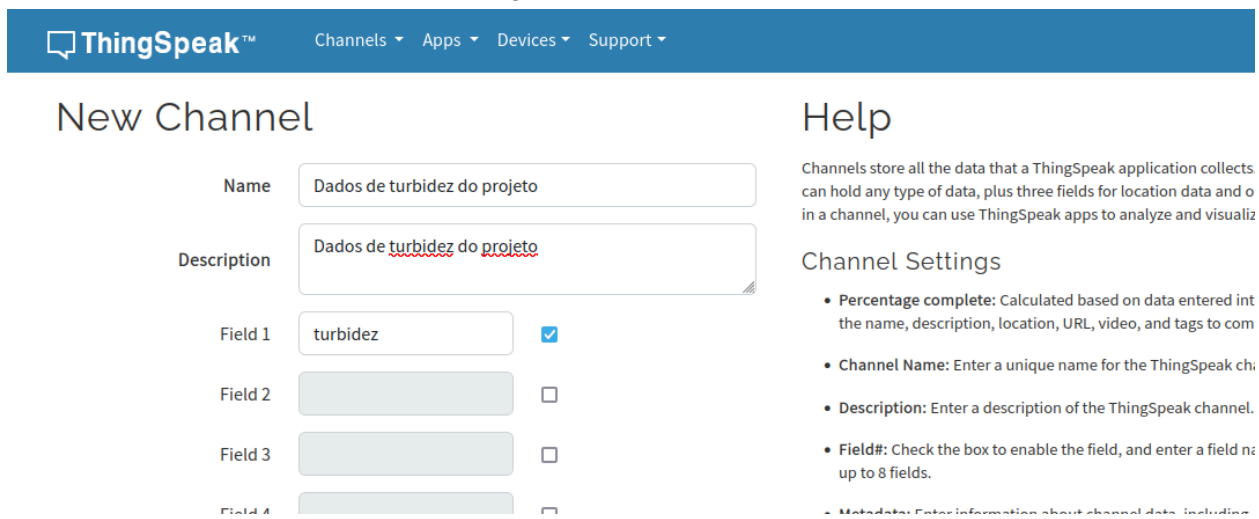


1. Crie uma conta no thingspeak, depois vá em Channels e crie um novo canal (New Channel)



2. Configure pelo menos um field para o canal e atribua um nome para ele. Este nome deve ser o mesmo a ser usado no código de publish/envio de dados.



3. Salve dados importantes do channel antes de prosseguir.

https://thingspeak.mathworks.com/channels/2771764/api_keys

ThingSpeak™ Channels Apps Devices Support Commercial Use How to Buy DS

Dados de turbidez do projeto

Channel ID: 2771764
Author: mwa0000021483824
Access: Private

Dados de turbidez do projeto

Private View Public View Channel Settings Sharing API Keys Data Import / Export

Write API Key

Key: OX45FWGR9HB1A6K2

Generate New Write API Key

Read API Keys

Key: WTU2UH0LVY87RQB2

Note:

Save Note Delete API Key

Add New Read API Key

Help

API keys enable you to write data to a channel or read data from a private channel. API keys are auto-generated when you create a new channel.

API Keys Settings

- **Write API Key:** Use this key to write data to a channel. If you feel your key has been compromised, click **Generate New Write API Key**.
- **Read API Keys:** Use this key to allow other people to view your private channel feeds and charts. Click **Generate New Read API Key** to generate an additional read key for the channel.
- **Note:** Use this field to enter information about channel read keys. For example, add notes to keep track of users with access to your channel.

API Requests

Write a Channel Feed

GET `https://api.thingspeak.com/update?api_key=OX45FWGR9HB1A6K2&field1=0`

Read a Channel Feed

GET `https://api.thingspeak.com/channels/2771764/feeds.json?api_key=WTU2UH0LVY87RQB2`

Read a Channel Field

GET `https://api.thingspeak.com/channels/2771764/fields/1.json?api_key=WTU2UH0LVY87RQB2`

Read Channel Status Updates

GET `https://api.thingspeak.com/channels/2771764/status.json?api_key=WTU2UH0LVY87RQB2`

4. No menu superior, clique em Devices -> MQTT. Selecione Add a new device. Nesta opção, autorize o canal a ser acessado por esse device, no caso, o criado

anteriormente.

://thingspeak.mathworks.com/devices/mqtt

ThingSpeak™ Channels Apps Devices Support

MQTT Devices

Add a new device ▾

Start here to add a new MQTT device.

Add a new device

Device Information

Name* Device de turbidez

Description Ele coleta dados de turbidez e envia pro thingspeak

Authorize channels to access ⓘ

-- Select a Channel -- ▾

...

Add Channel

| Authorized Channel ⓘ | Allow Publish | Allow Subscribe | |
|------------------------------------|-------------------------------------|-------------------------------------|---|
| Dados de turbidez do ... (2771764) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | × |

Cancel Add Device

5. Novamente, salve os dados gerados para o Device, eles indicam as credenciais de um device que vai enviar dados para o thingspeak.

New Device Added

Device Information

ThingSpeak has added a new MQTT device and authorized it to access the channels you selected.

Device Name: Device de turbidez

MQTT Credentials

Use these MQTT credentials to publish and subscribe to ThingSpeak channels. [Learn More](#)

Client ID: AA07IASxBzY6KCATGyMABRE

Username: AA07IASxBzY6KCATGyMABRE

Password:

ThingSpeak does not store a copy of your device's MQTT password. Download or copy it to keep it safe.

[Download Credentials](#)

[Done](#)

6. Usando python, instale a biblioteca do paho-mqtt: <https://pypi.org/project/paho-mqtt/>

7. Configure no código os dados de credenciais e de API descritos anteriormente:

```
## dados do thingspeak
CHANNEL_ID = "2771764"
WRITE_API_KEY = "XXXXXXXXXXXXXXXXXXXX"
MQTT_HOST = "mqtt3.thingspeak.com"
#MQTT_USERNAME = "mwa0000021483824" # versão antiga
#MQTT_API_KEY = "MVALKEH208WOKAHE" # versão antiga
CLIENT_ID = "AA07IASxBzY6KCATGyMABRE"
MQTT_USERNAME = "AA07IASxBzY6KCATGyMABRE"
MQTT_PASSWORD = "XXXXXXXXXXXXXXXXXXXX"
```

8. Após isso, rode um teste: **python sender.py**

9. Visualize os resultados no log

```
~/Downloads/gateway2thingspeak$ python sender.py
- INFO - Inicializando o serviço de envio para o MQTT broker do thingspeak
- INFO - Dado gerado: {'turbidez': 94.34}
- DEBUG - Sending PUBLISH (d0, q1, r0, m1), 'b'channels/2771764/publish'', ... (12 bytes)
- DEBUG - Received CONNACK (0, 0)
- INFO - Dado field1=94.34 enviado com sucesso!
- DEBUG - Sending DISCONNECT
- INFO - Dado gerado: {'turbidez': 99.6}
- DEBUG - Sending PUBLISH (d0, q1, r0, m1), 'b'channels/2771764/publish'', ... (11 bytes)
- DEBUG - Received CONNACK (0, 0)
- INFO - Dado field1=99.6 enviado com sucesso!
- DEBUG - Sending DISCONNECT
- INFO - Dado gerado: {'turbidez': 9.78}
- DEBUG - Sending PUBLISH (d0, q1, r0, m1), 'b'channels/2771764/publish'', ... (11 bytes)
- DEBUG - Received CONNACK (0, 0)
- INFO - Dado field1=9.78 enviado com sucesso!
- DEBUG - Sending DISCONNECT
- INFO - Dado gerado: {'turbidez': 43.43}
- DEBUG - Sending PUBLISH (d0, q1, r0, m1), 'b'channels/2771764/publish'', ... (12 bytes)
- DEBUG - Received CONNACK (0, 0)
- INFO - Dado field1=43.43 enviado com sucesso!
- DEBUG - Sending DISCONNECT
- INFO - Dado gerado: {'turbidez': 5.44}
- DEBUG - Sending PUBLISH (d0, q1, r0, m1), 'b'channels/2771764/publish'', ... (11 bytes)
```

10. E depois no thingspeak:

Dados de turbidez do projeto

Channel ID: 2771764

Author: mwa0000021483824

Access: Private

Dados de turbidez do projeto

Private View

Public View

Channel Settings

Sharing

API Keys

Data Import / Export

+ Add Visualizations

+ Add Widgets

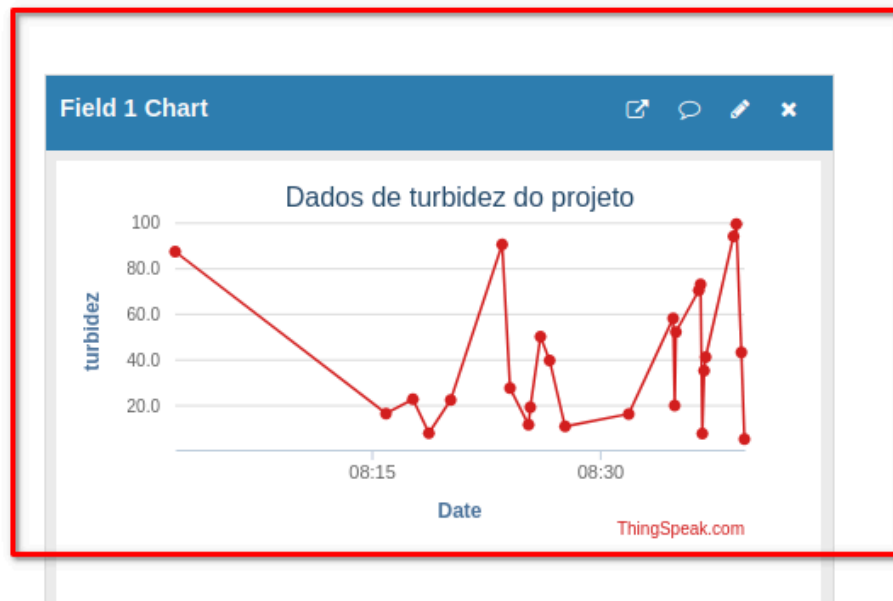
Export recent data

Channel Stats

Created: about an hour ago

Last entry: less than a minute ago

Entries: 26



Channel Status

11. Código: