

lopy4 add node OTAA

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1 Introduction

But : Connecter un device à The Things Network par la méthode Over The Air Activation.

Carte : pycom lopy 4 avec expansion board V3.0



Figure 1: pycom lopy 4

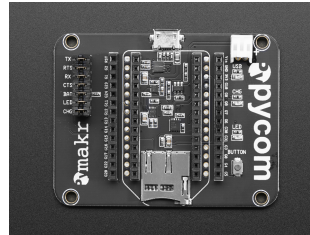


Figure 2: expansion board v3.0



Figure 3: antenne LoRa

2 Matériel

Branchez l'antenne LoRa avant d'alimenter la carte sinon la carte grille

3 Code pour Over The Air Activation

Informations complémentaires : <https://docs.pycom.io/tutorials/lora/lorawan-nano-gateway/>

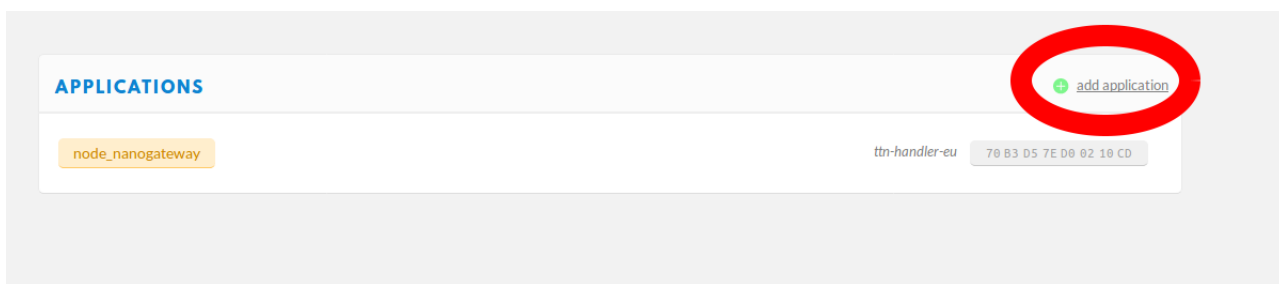
Le code se trouve à : https://github.com/CampusIoT/code-examples/tree/master/node_otaa

3.1 Over The Air Activation

Téléchargez le code suivant sur une carte lopy4+pymakr+antenne :

3.2 Créer une application sur The Thing Network

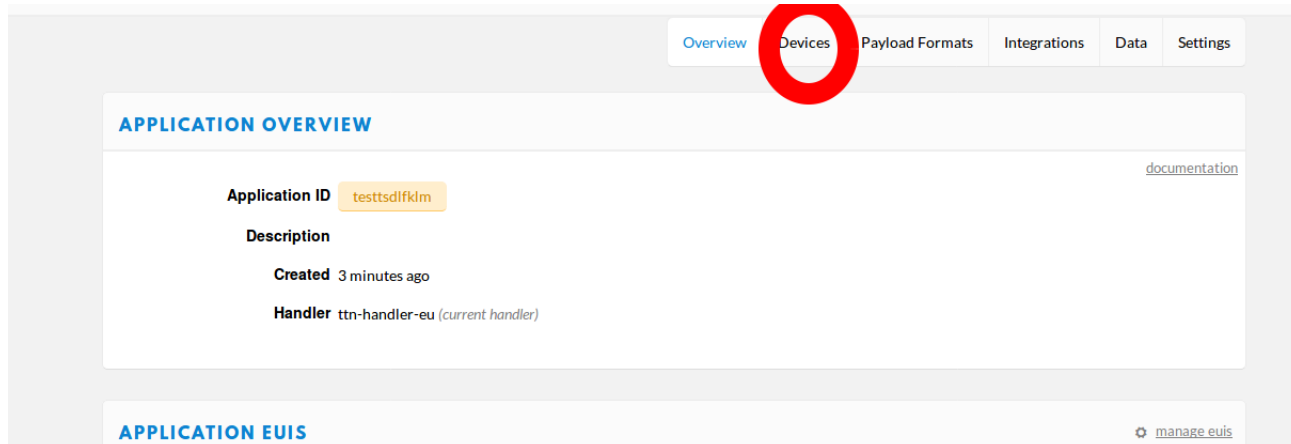
- Créez une application Depuis *Console* sélectionner application, puis ajoutez une application :



Donnez un nom pour l'application ID :

A screenshot of the 'ADD APPLICATION' form in the The Things Network console. The form is titled 'ADD APPLICATION' in blue. It contains four main sections: 1. 'Application ID' with a description 'The unique identifier of your application on the network' and a text input field containing 'test'. 2. 'Description' with a description 'A human readable description of your new app' and a text input field containing 'Eg. My sensor network application'. 3. 'Application EUI' with a description 'An application EUI will be issued for The Things Network block for convenience, you can add your own in the application settings page.' and a text input field containing 'EUI issued by The Things Network'. 4. 'Handler registration' with a description 'Select the handler you want to register this application to' and a dropdown menu showing 'ttn-handler-eu'. Each input field has a green checkmark icon on the right side, indicating it is valid.

3.3 Ajouter un device dans l'application



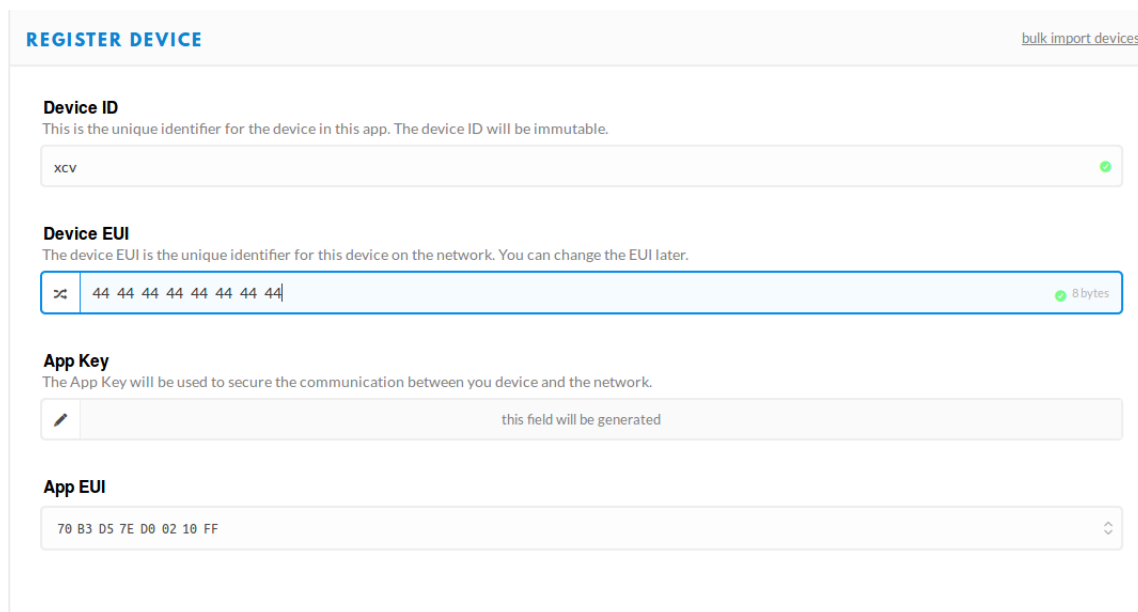
The screenshot shows the 'APPLICATION OVERVIEW' page. At the top, there is a navigation bar with tabs: 'Overview', 'Devices', 'Payload Formats', 'Integrations', 'Data', and 'Settings'. The 'Devices' tab is highlighted with a red circle. Below the navigation bar, the 'APPLICATION OVERVIEW' section displays the following information:

- Application ID**: testtsdlfkim
- Description**: (empty field)
- Created**: 3 minutes ago
- Handler**: ttn-handler-eu (current handler)

At the bottom of the 'APPLICATION OVERVIEW' section, there is a link to [documentation](#). Below this section, there is a section titled 'APPLICATION EUIs' with a link to [manage euis](#).

Puis *register device*

Choisir un nom pour le device ID et 16 caractères hexadécimaux pour l'EUI.



The screenshot shows the 'REGISTER DEVICE' page. At the top, there is a link to [bulk import devices](#). The form contains the following fields:

- Device ID**: This is the unique identifier for the device in this app. The device ID will be immutable. The input field contains 'XCV' and has a green checkmark icon.
- Device EUI**: The device EUI is the unique identifier for this device on the network. You can change the EUI later. The input field contains '44 44 44 44 44 44 44 44' and has a green checkmark icon and '8 bytes' text.
- App Key**: The App Key will be used to secure the communication between you device and the network. The input field contains 'this field will be generated' and has a green checkmark icon.
- App EUI**: The input field contains '70 B3 D5 7E D0 02 10 FF' and has a green checkmark icon.

Copiez les valeurs de Device EUI, APP Key et App EUI dans main.py

Choisir OTAA comme méthode d'activation

Device Overview

Application ID

testtsd/fklm

Device ID

sfdsfsfsdsdfs

Activation Method

OTAA

Device EUI

<> ⇅ FF FF FF FF FF FF FF FF ⓘ

Application EUI

<> ⇅ 70 B3 D5 7E D0 02 10 FF ⓘ

App Key

<> ⇅ 👁

Status

● never seen

Frames up

0 [reset frame counters](#)

Frames down

0

Téléchargez le code sur la carte avec Atom.

3.4 Lire la payload envoyée par le device

- Une fois le device connecté :

```
clk_drv:0x00,q_drv:0x00,d_drv:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00
mode:DIO, clock div:1
load:0x3fff8028,len:8
load:0x3fff8030,len:1728
load:0x4009fa00,len:0
load:0x4009fa00,len:14612
entry 0x400a059c
Not joined yet...
Not joined yet...
Not joined yet...
```

Figure 4: Atom

