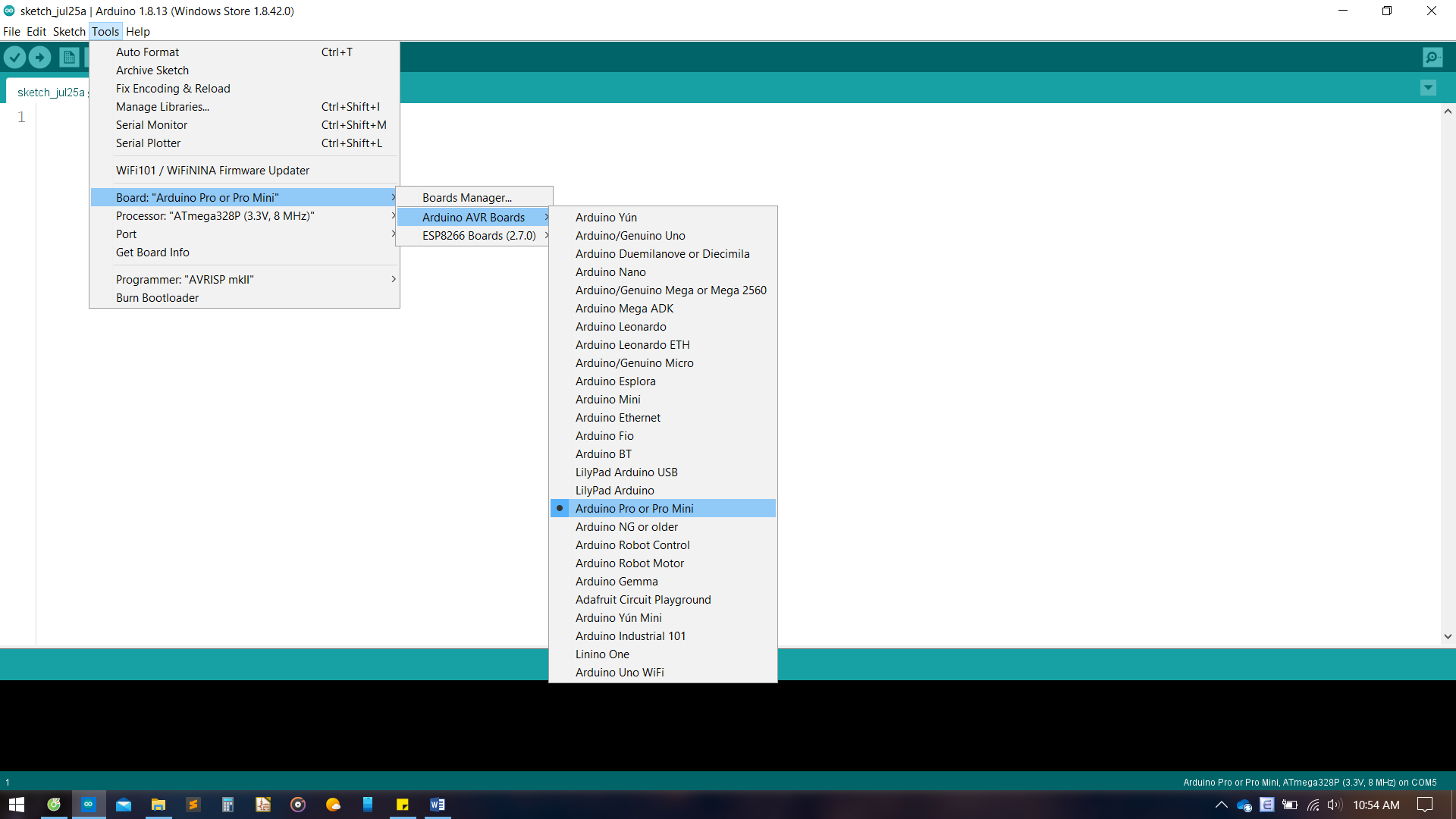
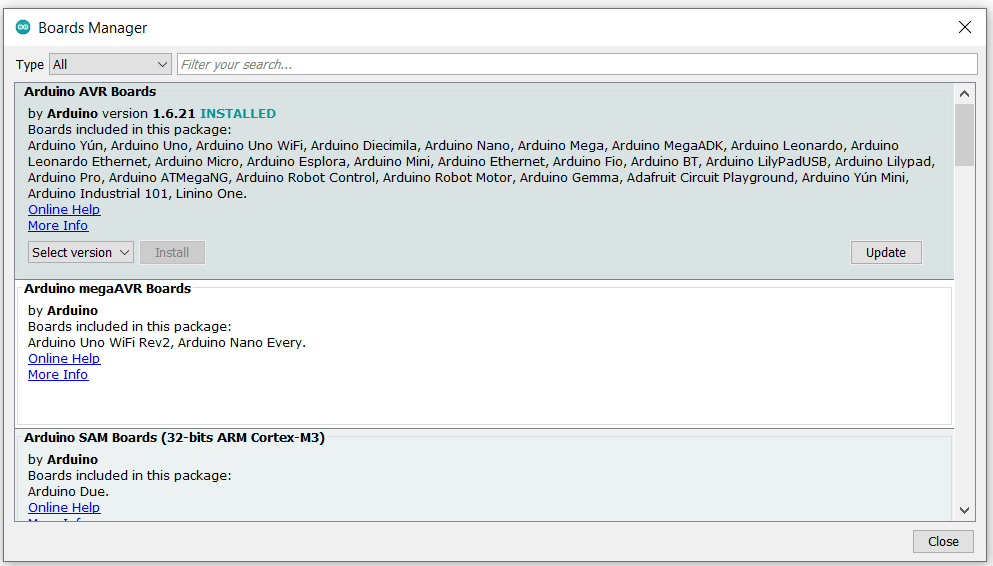
LoKy Tutorial

# **Arduino IDE:**

## Setup board information:



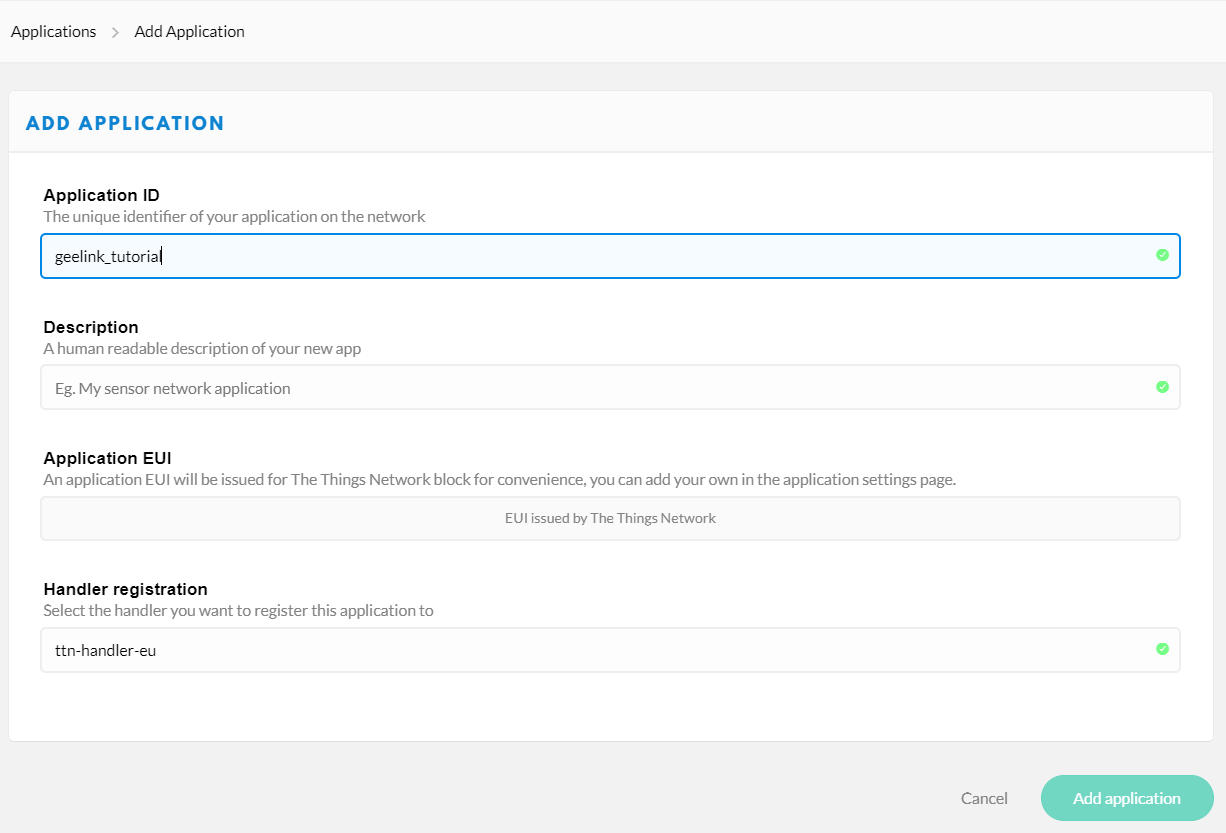
## Install version **1.6.21** on Boards Manager (the higher versions have bugs for LMiC library)



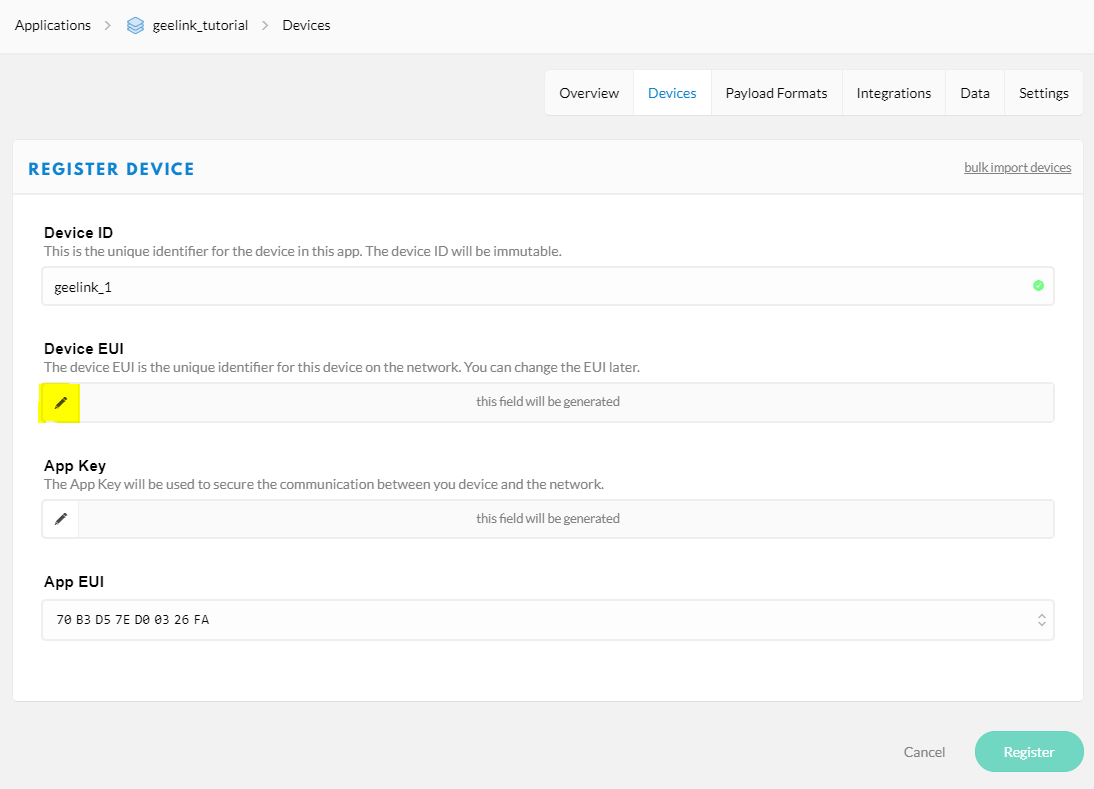
* + Select Processor: “ATmega328P (3.3V, 8MHz)” and Port that is connecting to ProMini
  + Install Libraries following this instruction: <https://www.arduino.cc/en/guide/libraries>

# **The Things Network (TTN)**

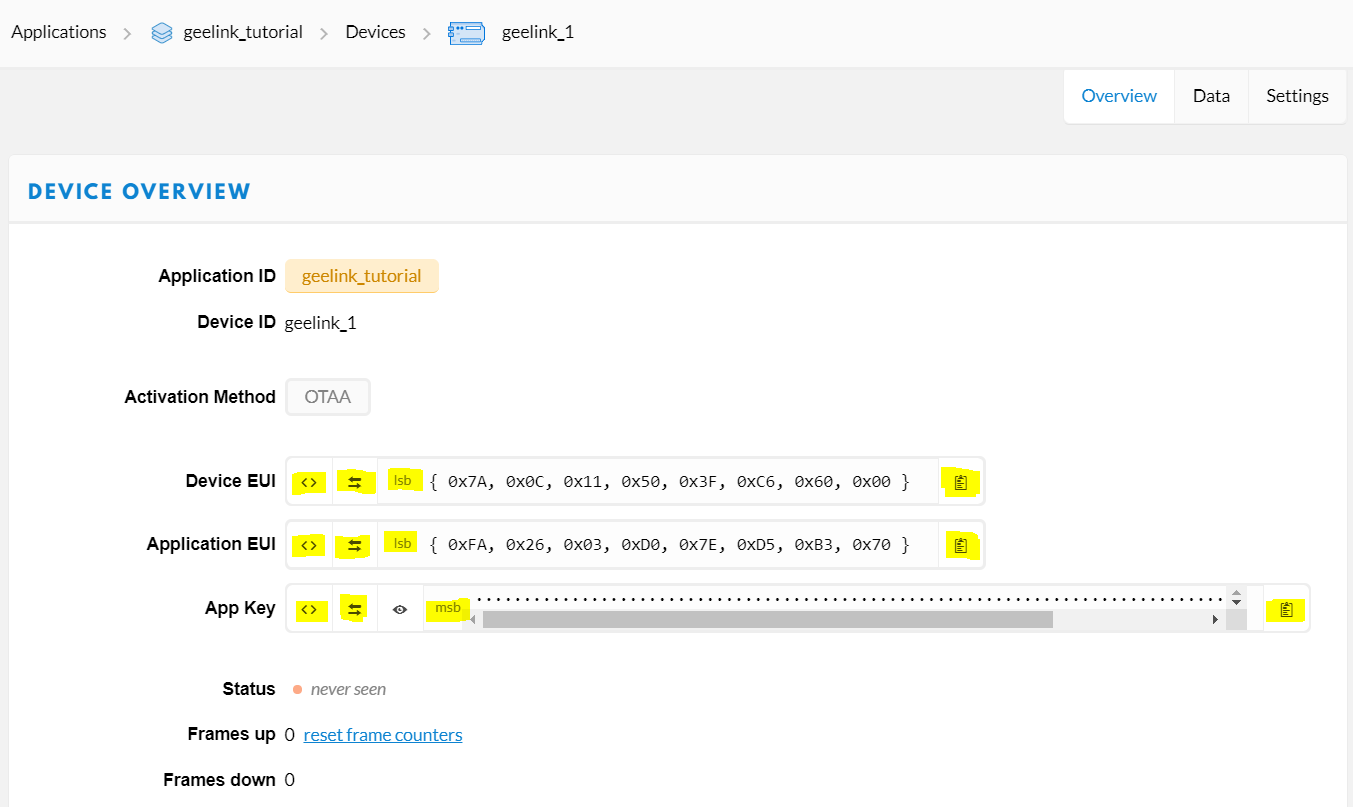
1. Login to TTN console: <https://console.thethingsnetwork.org/> and add a new Application



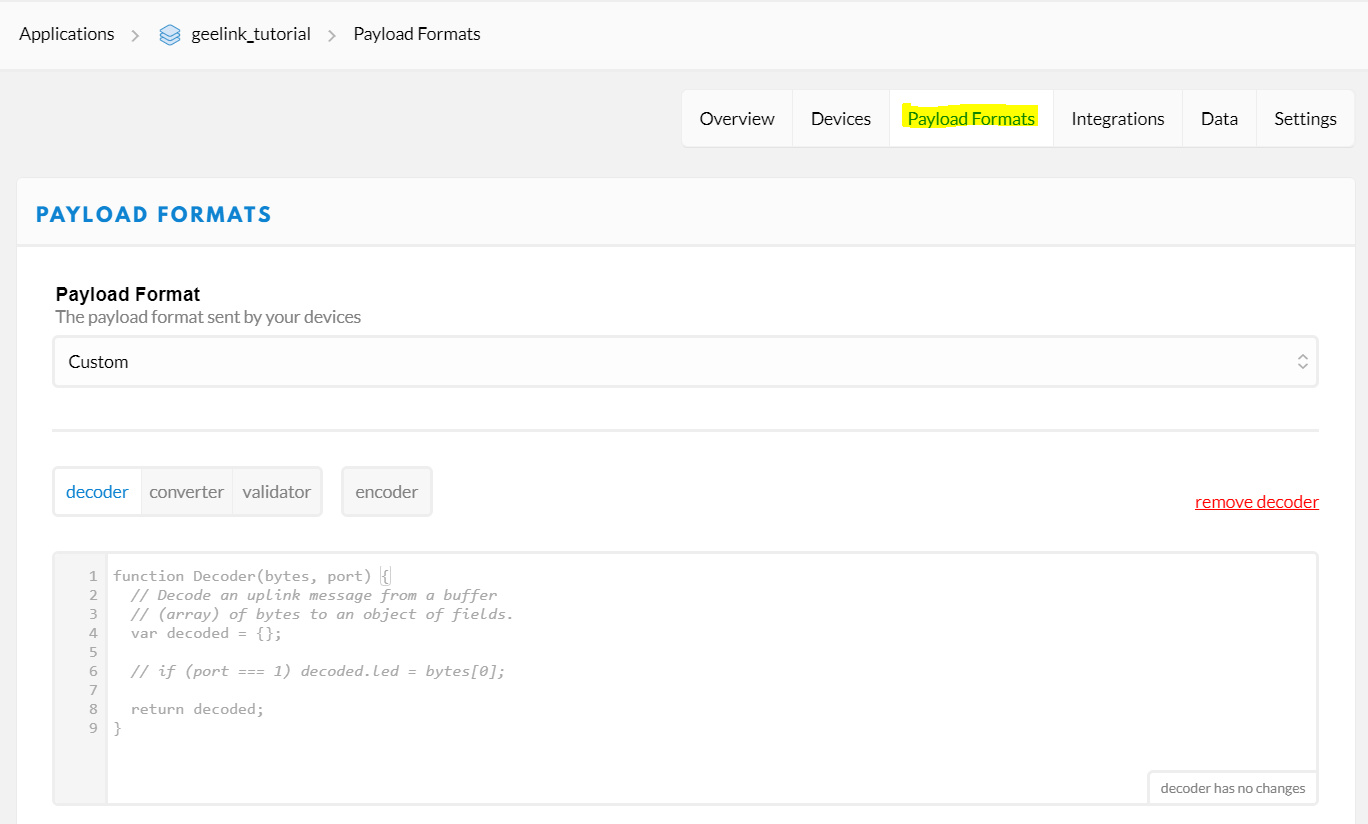
1. Device register



1. After registering an OTAA device, adjust the keys into the following format

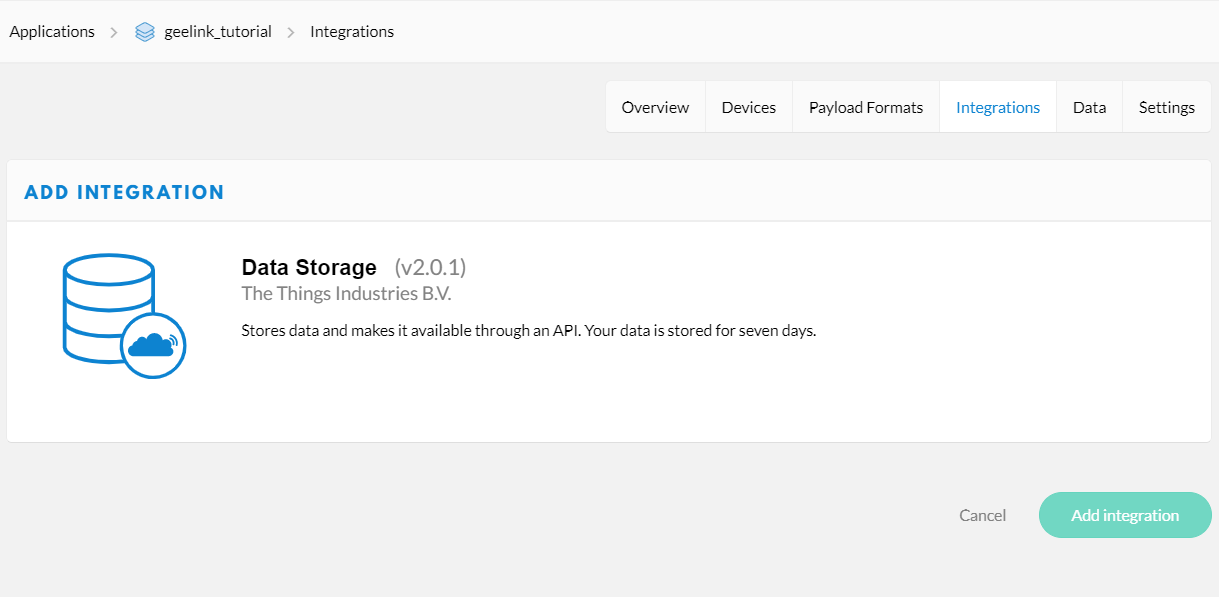


# **Payload decoder on TTN**



* Change the decoder to the LoKy\_decoder and *remember* to **SAVE** before add integration

# **Integrations on TTN**

* Add **Data Storage** integration: 
* **Now, we have everything to run:**

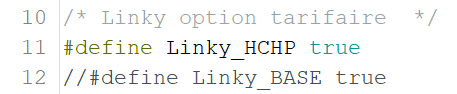
- LoKy main board

- Arduino and its stuff

- last but not least, TTN configured.

# **LoKy Firmware upload:**

* + - * First we need to replace the keys (in section 2.c) from TTN in *“****3\_Device\_Keys.h”***
      * Depending on the “option tarifaire” of Linky, we can use BASE or HCHP for our device by comment and uncomment line 11 or 12 of the main sketch.



* + - * Upload the sketch and check the operation of device from the Serial Monitor on Arduino IDE.
      * Finally, we can plug LoKy to the compteur and done!
* Section 6 is used for Application server and Database.

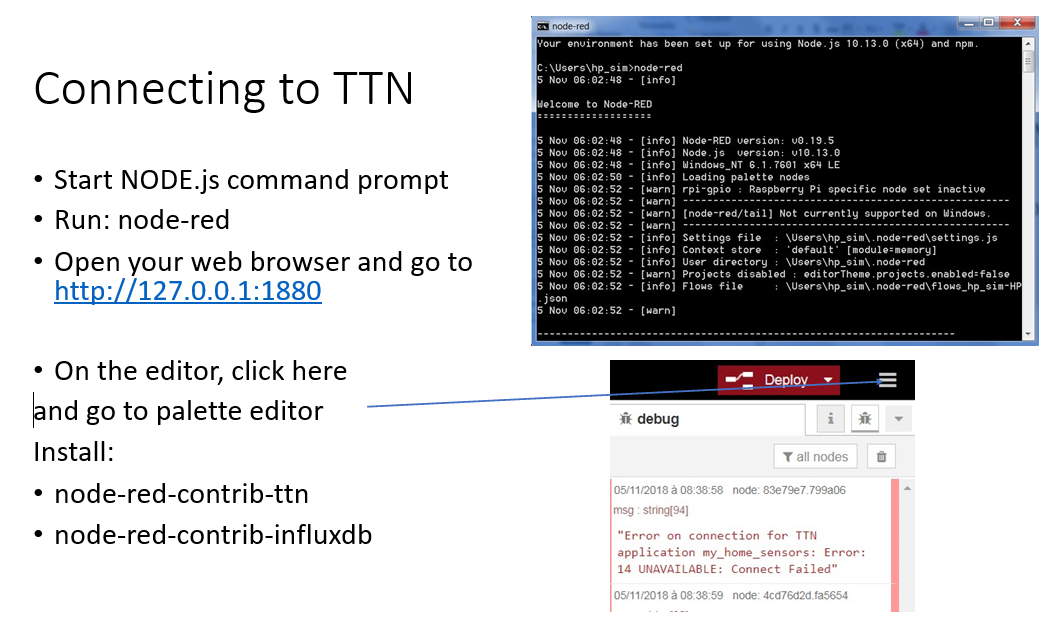
# **Application Server**

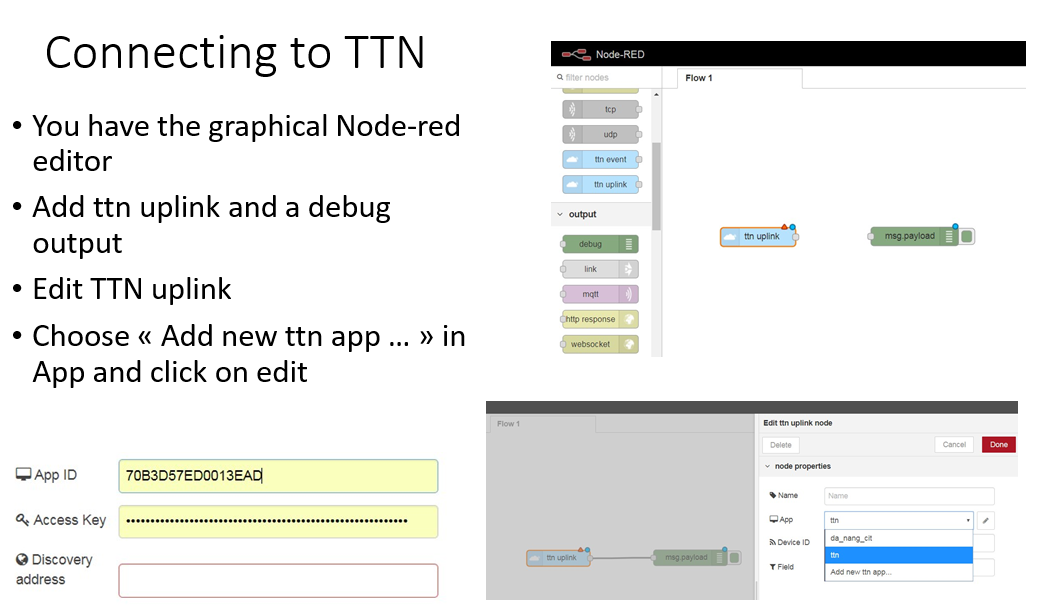
* Install InfluxDB and Grafana following this instruction:

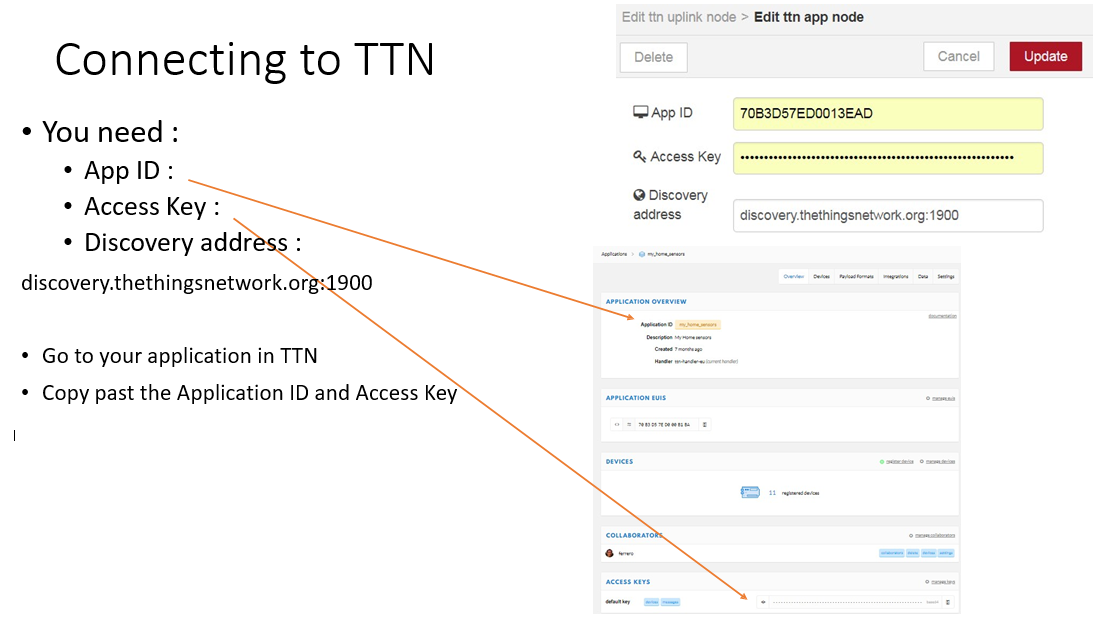
<https://github.com/ITU-PITLab/public/blob/master/TheThingsNetwork%2Bnode-red%2Binfluxdb%2Bgrafana.md>

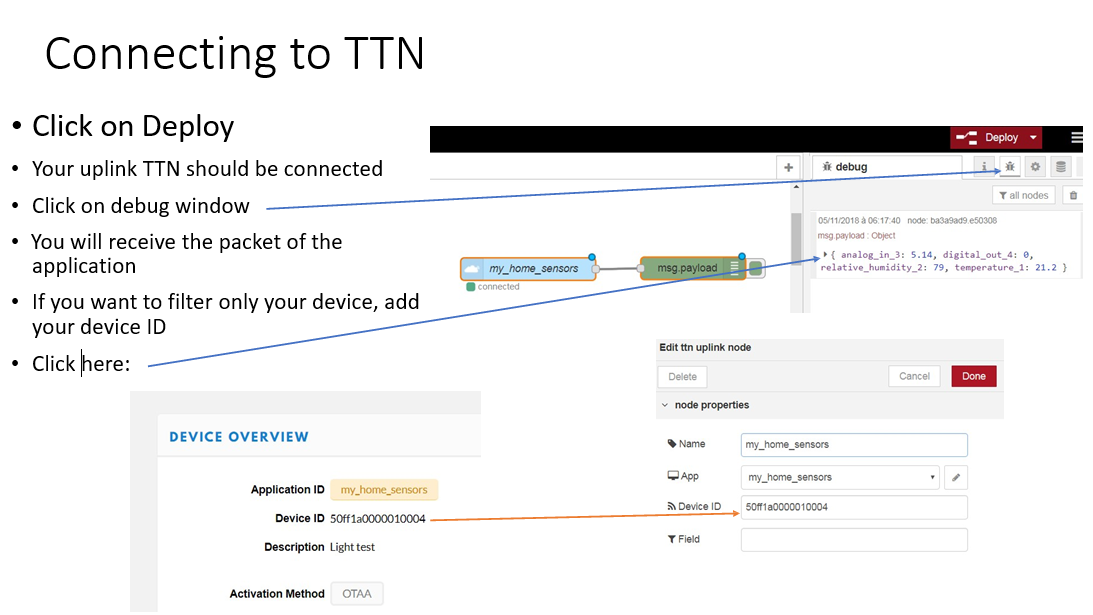
* Install Node-RED

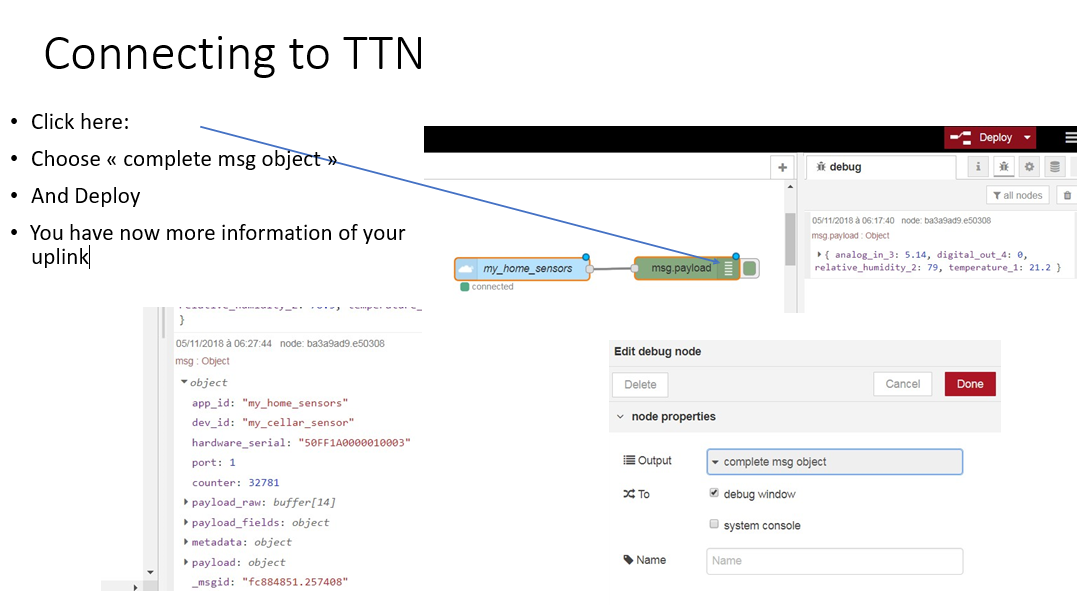
[If Git is not installed on your PC: https://git-scm.com/downloads](file:///D:\OneDrive%20-%20Danang%20University%20of%20Technology\OneDrive\LoRa\GeeLink\Thesis\If%20Git%20is%20not%20installed%20on%20your%20PC%20:%20https:\git-scm.com\downloads). After that, run this command on Gitbash npm install -g --unsafe-perm node-red

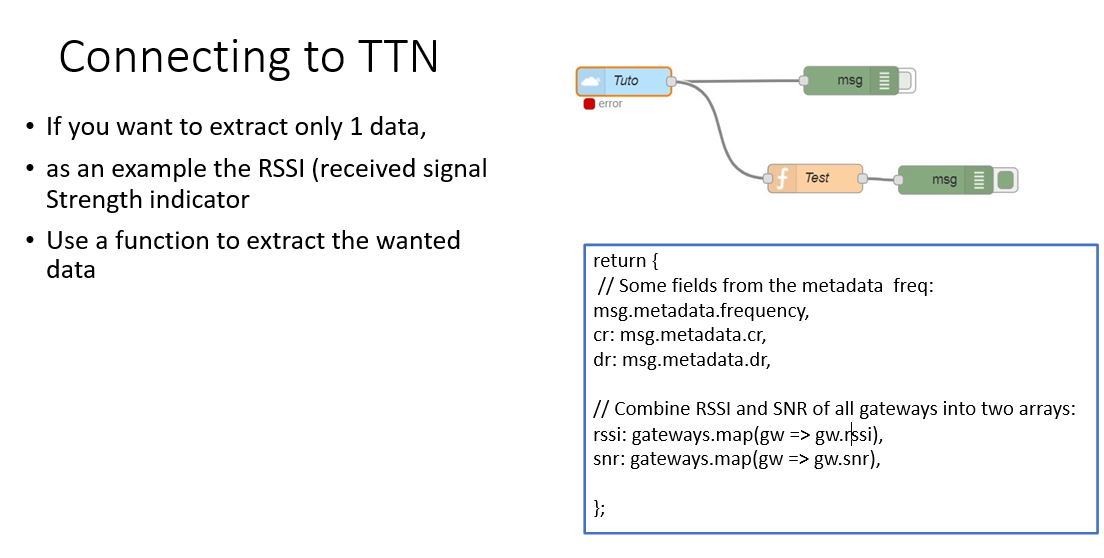


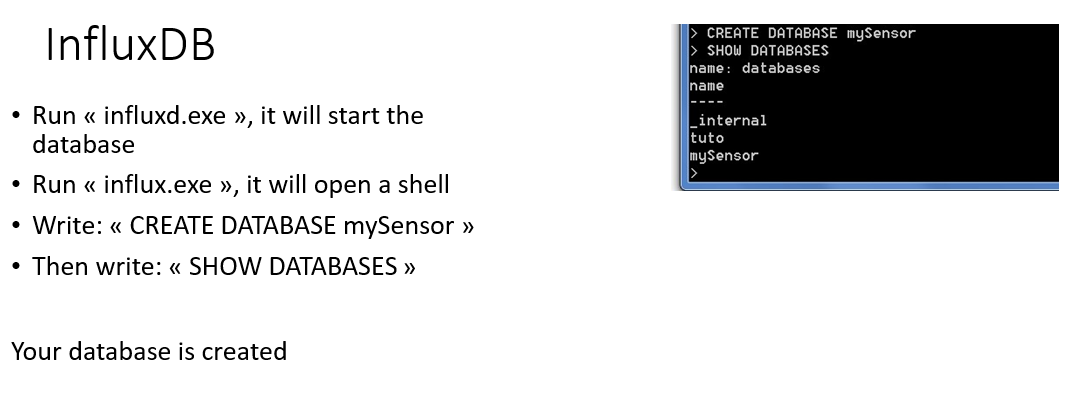


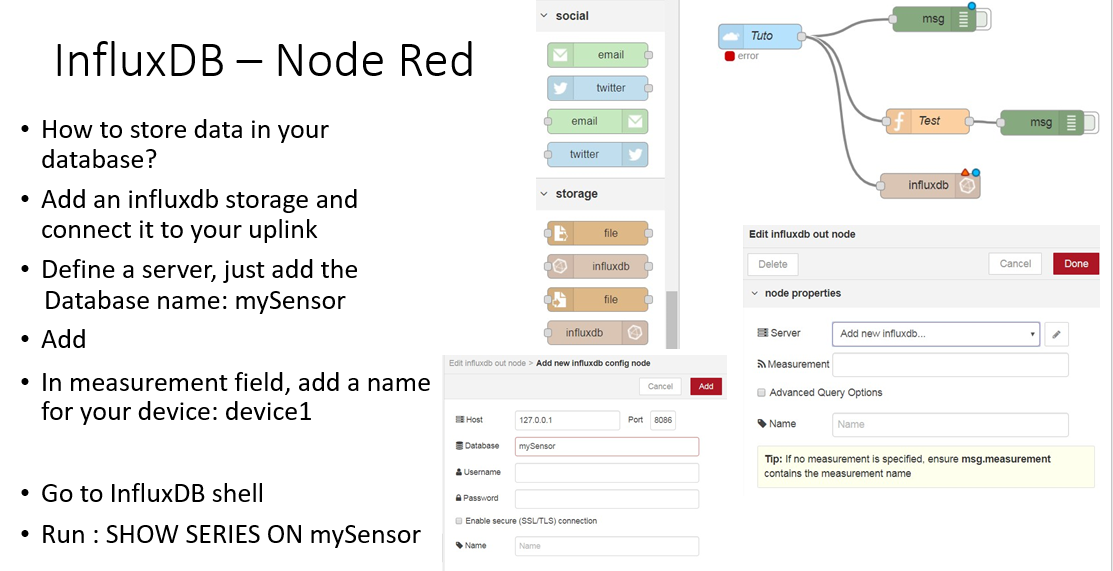


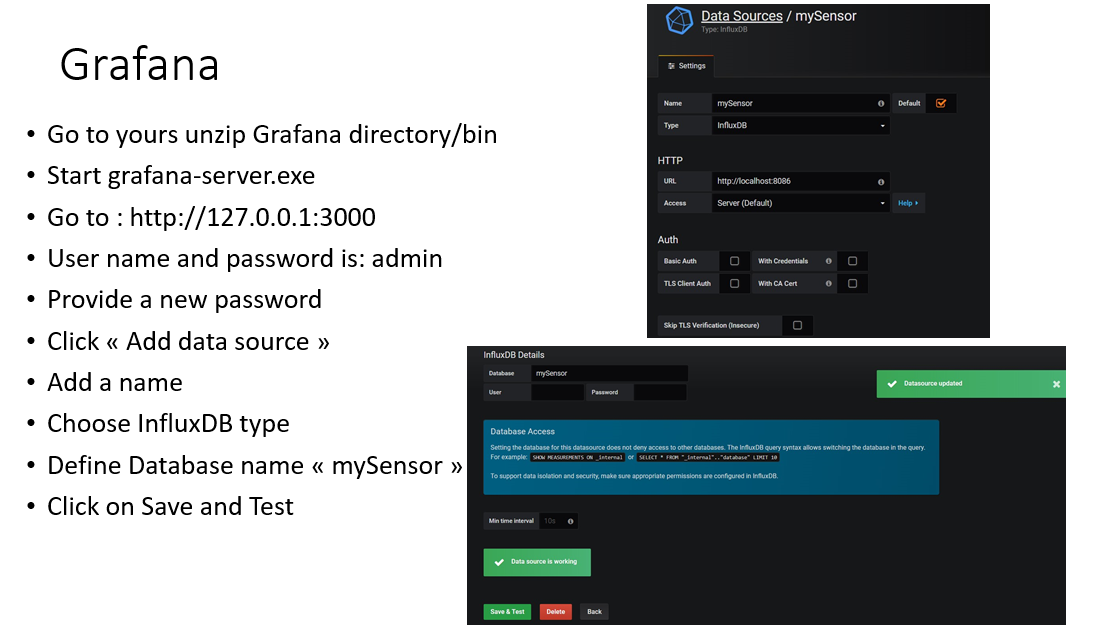


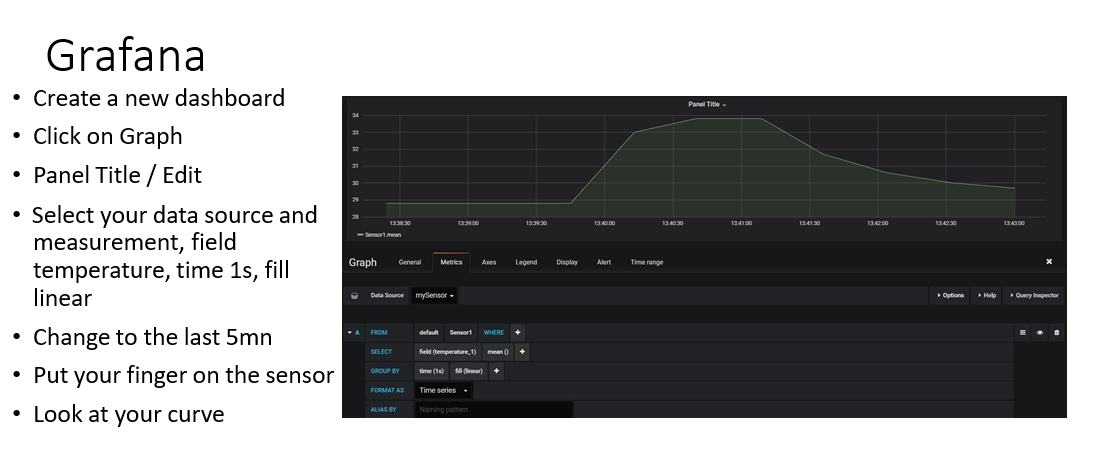












\*Credit to GitHub: Fabien FERRERO – UCA board