

# (Proyecto IoT – UD5):

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## Translation and Explanation

### IoT Project – Unit 5

The IoT project will be done in pairs, integrating sensors, actuators, and controllers to explore and deepen understanding of **MQTT** and the **Zigbee** protocol. For this purpose, you'll use a **Raspberry Pi 4 b** along with various Zigbee devices.

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## Project Definition

The project will be divided into two parts. After completing the first part, there will be an evaluation, and then each pair will exchange their set of devices used to implement the second part. Each group must update their Python dashboard so that, ultimately, all devices can be monitored and controlled from a single platform.

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## Pair 1 – "Automation and Security"

### Devices and Functionalities:

#### Home Automation:

- Configure **Raspberry Pi** as a **central hub** and **MQTT broker** using a **Zigbee dongle**.
- Integrate **2 smart switches** to control lights or small household appliances.

#### Security and Alerts:

- Integrate a Zigbee door/window sensor and **1 motion sensor**.

- Configure a Zigbee **siren alarm** to trigger when an intrusion is detected (e.g., unexpected door/window opening or detected motion).

### Python Dashboard:

Develop a **basic dashboard** (using frameworks such as **Flask** or **Dash**) that displays:

- Status of automation devices (on/off state).
  - Real-time security alerts and controls for lights and resetting alarms.
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## Pair 2 – "Environmental Monitoring and Arduino Integration"

Devices and Functionalities:

Environmental Monitoring:

- Integrate a temperature and humidity sensor to create an environmental monitoring station.
- Configure 2 smart switches to activate devices based on environmental conditions (e.g., turning on fans or humidifiers).

Arduino Integration:

- Use 2 Arduino UNO boards to expand the sensor network (simulate additional sensor readings or incorporate additional analog sensors).
- Establish MQTT communication between Arduino boards and Raspberry Pi to send additional data.

Python Dashboard:

Develop a dashboard that:

- Graphically displays environmental readings (temperature, humidity, and additional data from Arduino boards).
  - Allows setting threshold values and manually activating associated smart switches.
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## ✓ Part 1 - Automation & Security

Component	Quantity	Recommended Device Example
Raspberry Pi 5 (central hub)	1	(You already have this)
Zigbee USB Dongle (Coordinator)	1	Sonoff Zigbee 3.0 USB Dongle Plus
Zigbee Smart Switch	2	Sonoff Basic Zigbee Smart Switch / IKEA TRÅDFRI Plug
Zigbee Door/Window Sensor	1	Aqara Door/Window Sensor
Zigbee Motion Sensor	1	Sonoff SNZB-03 or Aqara Motion Sensor
Zigbee Siren Alarm	1	Tuya Zigbee Alarm / Aqara Smart Siren
MicroSD Card (16GB+)	1	SanDisk Ultra 32GB MicroSD
Micro HDMI cable & Power Supply	1 set	Official Raspberry Pi Power Supply & Micro HDMI Cable

## ✓ Part 2 - Environmental Monitoring & Arduino Integration

Component	Quantity	Recommended Device Example
Raspberry Pi 5 (central hub, same as above)	(shared)	(You already have this)
Zigbee Temperature & Humidity Sensor	1	Sonoff SNZB-02 / Aqara Temperature & Humidity Sensor
Zigbee Smart Switches	2	Sonoff Zigbee Smart Switch / IKEA TRÅDFRI Plug
Arduino UNO	2	Arduino UNO R3 / Arduino-compatible boards
Arduino Sensor Kit	1 kit	Kit with analog/digital sensors (DHT22, soil moisture, LDR, etc.)
Breadboard, jumper wires, resistors, LEDs	1 set	Arduino Starter Kit
Additional Micro USB cables	2	Standard Micro USB cables for Arduino connectivity

### ⚡ Common Accessories (shared by both parts)

Accessory	Quantity	Recommended Example
Ethernet/Wi-Fi connection	1	Home Router
Optional Zigbee Repeaters (for large homes)	1-2	IKEA TRÅDFRI signal repeater or Zigbee smart plugs

# ENVIRONMENT PROJECT

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```
PS C:\Users\miche\Desktop\Programming\Sensor\IOT_project_UD5> .\venv\Scripts\Activate
(venv) PS C:\Users\miche\Desktop\Programming\Sensor\IOT_project_UD5>
```

.\venv\Scripts\Activate

First steps install the raspberry os

Then I am going to use the ssh way to connect with it remotely

We set up the password and the user name.

ssh [michelpaliz@192.168.130.95](mailto:michelpaliz@192.168.130.95)

then we enter the password as well

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\miche> ssh michelpaliz@192.168.130.95
michelpaliz@192.168.130.95's password:
Linux raspberrypi 6.12.25+rpt-rpi-v8 #1 SMP PREEMPT Debian 1:6.12.25-1+rpt1 (2025-04-30) aarch64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed May  7 16:55:39 2025
michelpaliz@raspberrypi:~ $
```

Can we set a static ip for the raspberry pi ??

RUN THIS COMMAND TO SET THE STATIC IP

```
ssh michelpaliz@192.168.130.100
```

```
michelpaliz@raspberrypi:~ $ sudo nmcli con mod "Wired connection 1" ipv4.addresses  
192.168.130.100/24  
sudo nmcli con mod "Wired connection 1" ipv4.gateway 192.168.130.1  
sudo nmcli con mod "Wired connection 1" ipv4.dns "8.8.8.8 8.8.4.4"  
sudo nmcli con mod "Wired connection 1" ipv4.method manual  
sudo nmcli con down "Wired connection 1"  
sudo nmcli con up "Wired connection 1"  
client_loop: send disconnect: Connection reset
```

## EXPLANATION

### What Each Command Does

#### Step 1: Set the Static Network Configuration

```
sudo nmcli con mod "Wired connection 1" ipv4.addresses 192.168.130.100/24
```

This tells the Pi to use the IP address 192.168.130.100 with a subnet mask of 255.255.255.0 (that's what /24 means).

```
sudo nmcli con mod "Wired connection 1" ipv4.gateway 192.168.130.1
```

This sets the default gateway — i.e., the IP of the router the Pi uses to reach the internet.

```
sudo nmcli con mod "Wired connection 1" ipv4.dns "8.8.8.8 8.8.4.4"
```

This sets the DNS servers — these are public servers from Google that resolve domain names like google.com to IP addresses.

```
sudo nmcli con mod "Wired connection 1" ipv4.method manual
```

This tells NetworkManager to stop using DHCP (dynamic IP assignment) and instead use your manual static settings.

 Step 2: Apply the New Settings Immediately

```
sudo nmcli con down "Wired connection 1"
```

```
sudo nmcli con up "Wired connection 1"
```

This disables and then re-enables the Ethernet connection so the new static settings take effect right away without needing a reboot.

 Result:

Your Raspberry Pi will now always use 192.168.130.100 for Ethernet, even after:

- Reboots
- Power loss
- Unplugging and replugging the cable

SSH will always work via:

After setting the static ip from the raspberry now we have to update the command to connect to my raspberry pi

```
ssh michelpaliz@192.168.130.100
```

How can we confirm all this work?

Easy just type this command on the ssh connection from the laptop

```
ip a | grep inet
```

and check this output which is correct like the following one

```
inet 192.168.130.100/24 brd 192.168.130.255 scope global dynamic eth0
```

```
michelpaliz@raspberrypi:~ $ ip a
```

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group
```

```
default qlen 1000
```

```
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
```

```
    inet 127.0.0.1/8 scope host lo
```

```
        valid_lft forever preferred_lft forever
```

```
    inet6 ::1/128 scope host noprefixroute
```

```
        valid_lft forever preferred_lft forever
```

```
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group
```

```
default qlen 1000
```

```
    link/ether e4:5f:01:fe:80:ae brd ff:ff:ff:ff:ff:ff
```

```
    inet 192.168.130.100/24 brd 192.168.130.255 scope global noprefixroute eth0
```

```
        valid_lft forever preferred_lft forever
```

```
    inet6 fe80::1394:6d97:ba25:e97e/64 scope link noprefixroute
```

```
        valid_lft forever preferred_lft forever
```

```
3: wlan0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc pfifo_fast state
```

```
DOWN group default qlen 1000
```

```
    link/ether e4:5f:01:fe:80:af brd ff:ff:ff:ff:ff:ff
```

```
michelpaliz@raspberrypi:~ $ ^C
```

# "Environmental Monitoring and Arduino Integration"

Let's create an environment for this project

```
● michelpaliz@raspberrypi:~/Documents/enviroment_integration $ source venv/bin/activate
○ (venv) michelpaliz@raspberrypi:~/Documents/enviroment_integration $
```

Check the ssd size

```
● (venv) michelpaliz@raspberrypi:~/Documents/enviroment_integration $ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            3.6G   0    3.6G  0% /dev
tmpfs           781M  1.3M  780M  1% /run
/dev/mmcblk0p2  117G  6.4G  105G  6% /
tmpfs           3.9G  228K  3.9G  1% /dev/shm
tmpfs           5.0M  16K  5.0M  1% /run/lock
/dev/mmcblk0p1  510M  68M  443M  14% /boot/firmware
tmpfs           781M  44K  781M  1% /run/user/1000
○ (venv) michelpaliz@raspberrypi:~/Documents/enviroment_integration $
```

Now we proceed with the necessary packages for the installations

```
pip install paho-mqtt flask matplotlib gpiozero
```

We need to connec the device Sonoff zigbee dongle plus

We checked if the device is connected we got a similar output like this

```
(venv) michelpaliz@raspberrypi:~/Documents/enviroment_integration $ dmesg | grep -i  
usb  
[ 0.078021] usbcore: registered new interface driver usbfs  
[ 0.078036] usbcore: registered new interface driver hub  
[ 0.078051] usbcore: registered new device driver usb  
[ 0.831556] usbcore: registered new interface driver lan78xx  
[ 0.831571] usbcore: registered new interface driver smsc95xx
```

Perfect — based on your dmesg output, your Sonoff ZBDongle-E is being successfully recognized by your Raspberry Pi!

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Key Details:

- Device Name: /dev/ttyACM0
- Product: SONOFF Zigbee 3.0 USB Dongle Plus V2
- Driver Loaded: cdc\_acm (which is correct for this type of USB CDC device)

We need to install the req packages and add this file

```
> TERMINAL nano - zigbee2mqtt +   
GNU nano 7.2 data/configuration.yaml  
homeassistant: false  
permit_join: true  
  
mqtt:  
  base_topic: zigbee2mqtt  
  server: 'mqtt://localhost'  
  
serial:  
  port: /dev/ttyACM0  
  adapter: ezsp # Required for Sonoff ZBDongle-E  
  
advanced:  
  log_level: info  
  
[ Read 13 lines ]  
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo  
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo
```

We would see a similar structure like this

```
cd ~/zigbee2mqtt  
npm ci # Only needed once  
npm start
```

I encounter an issue with the correct installation command this one is the correct one

```
git clone --depth 1 https://github.com/Koenkk/zigbee2mqtt.git  
cd zigbee2mqtt  
npm install  
npm start
```

And this issue

```
① michelpaliz@raspberrypi:~/zigbee2mqtt $ npm start
```

```
> zigbee2mqtt@2.3.0 start
> node index.js
```

```
Starting Zigbee2MQTT without watchdog.
Building Zigbee2MQTT... (initial build), failed
Error: Command failed: pnpm run prepck
/bin/sh: 1: pnpm: not found
```

```
    at ChildProcess.exithandler (node:child_process:422:12)
    at ChildProcess.emit (node:events:517:28)
    at maybeClose (node:internal/child_process:1098:16)
    at Socket.<anonymous> (node:internal/child_process:450:11)
    at Socket.emit (node:events:517:28)
    at Pipe.<anonymous> (node:net:350:12)
```

```
② michelpaliz@raspberrypi:~/zigbee2mqtt $ npm install -g pnpm
:■
```

Solution

```
● michelpaliz@raspberrypi:~/zigbee2mqtt $ sudo npm install -g pnpm
```

```
added 1 package in 4s
```

```
1 package is looking for funding
  run `npm fund` for details
npm notice
npm notice New major version of npm available! 10.8.2 -> 11.3.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.3.0
npm notice To update run: npm install -g npm@11.3.0
npm notice
```

```
○ michelpaliz@raspberrypi:~/zigbee2mqtt $ ■
```

```
cd ~/zigbee2mqtt
npm start
```

```
○ michelpaliz@raspberrypi:~/zigbee2mqtt $ cd ~/zigbee2mqtt
npm start

> zigbee2mqtt@2.3.0 start
> node index.js

Starting Zigbee2MQTT without watchdog.
Building Zigbee2MQTT... (initial build) █
```

After running this server we can access with this url

## Zigbee2MQTT Onboarding

Which is the same as this one: localhost:8080

The screenshot shows the 'Zigbee2MQTT Onboarding' configuration interface. At the top, there is a message to set the base configuration and a note about exiting full screen. Below this, a note says optional fields will fallback to defaults if not set. A note also mentions environment variables being used to override specific values. The 'Found Devices' section shows a single device: 'usb-ITEAD SONOFF\_Zigbee\_3.0\_USB\_Dongle\_Plus\_V2\_20220810192321-if00 (ITEAD), /dev/ttyACM0, ember'. Below this, a note says it optionally allows to configure coordinator port and type (if known) automatically. The 'Coordinator/Adapter Port/Path' field is set to '/dev/ttyACM0'. The 'Coordinator/Adapter Type/Stack/Driver' field is set to 'ember'. The 'Coordinator/Adapter Baudrate' field is set to '115200'. A note says it can be ignored for networked coordinators (TCP). The 'Coordinator/Adapter Hardware Flow Control ("rtscts: true")' checkbox is checked. A note says it can be ignored for networked coordinators (TCP). At the bottom, a link is provided: <https://www.zigbee2mqtt.io/guide/configuration/adapter-settings.html>.

Can be ignored for networked coordinators (TCP).

<https://www.zigbee2mqtt.io/guide/configuration/adapter-settings.html>

Closest WiFi Channel

0

Optional: set to your closest WiFi channel to pick the best value for "Network channel" below.

Network Channel

11

Network Key

GENERATE

Network PAN ID

GENERATE

Network Extended PAN ID

GENERATE

<https://www.zigbee2mqtt.io/guide/configuration/zigbee-network.html>

MQTT Base Topic

zigbee2mqtt

MQTT Server

mqtt://localhost:1883

MQTT User

Optional. Set only if using authentication.

MQTT Password

Optional. Set only if using authentication.

<https://www.zigbee2mqtt.io/guide/configuration/mqtt.html>

Frontend enabled?

Frontend Port

8080

<https://www.zigbee2mqtt.io/guide/configuration/frontend.html>

Home Assistant enabled?

<https://www.zigbee2mqtt.io/guide/configuration/homeassistant.html>

Log Level

info

<https://www.zigbee2mqtt.io/guide/configuration/logging.html>

Submit

ⓘ localhost:8080

## Zigbee2MQTT Onboarding

Settings saved.

Zigbee2MQTT is now starting...

You can close this page.

Access the Zigbee2MQTT Dashboard from Any Device on Your Network:

<http://192.168.130.100:8080>

Now I am encountering a bigger issue

Great question — let's clarify the purpose of all these steps:

### Goal Recap:

You're building a project with:

- A Zigbee temperature and humidity sensor
- A Sonoff ZBDongle-E USB stick
- Zigbee2MQTT on your Raspberry Pi to read the sensor
- An upcoming Python dashboard to display data

### The Problem:

When you tried to start Zigbee2MQTT, it failed with this error:

Error: Adapter EZSP protocol version (8) is not supported by Host [13-16].

This means:

Your Sonoff ZBDongle-E has newer firmware (EZSP v8), which is not compatible with the current Zigbee2MQTT stable release.

### The Solution:

We are downgrading the firmware on your ZBDongle-E to EZSP v6.10.3, which is fully compatible with Zigbee2MQTT.

### The benefits of this firmware downgrade:

- Zigbee2MQTT will start correctly
- Your Zigbee sensor will pair and send data
- You can move forward with:
  - Setting thresholds
  - Activating smart switches
  - Displaying sensor data on your Python dashboard

You're 1 step away: just flash the .gbl firmware file.

Let me know when it's copied to your Pi and you're ready to run the flash command.

## I GOT A NEW ISSUE

### What This Confirms:

- Zigbee2MQTT is still incompatible with your dongle's current firmware
- Your flashing step via the Elelabs utility either failed or didn't happen yet

michelpaliz@raspberrypi:~/Documents \$ ls -lh ~/zigbee\_firmware/ total 0

✖ Your ~/zigbee\_firmware/ folder is empty, so the firmware was never downloaded or transferred to your Pi.

Now it looks like it's working

You're absolutely right to reflect on that — so let me quickly break down what made it work, step by step, so you know exactly what fixed the issue:

### What Actually Solved the Problem

#### 1. Firmware Flashing

You correctly flashed the Sonoff Zigbee 3.0 USB Dongle Plus V2 using Windows. That gave you modern firmware requiring the ember adapter.

#### 2. Correct Serial Configuration

You switched from:

#### 3. serial:

#### 4. port: /dev/ttyACM0

#### 5. adapter: ezsp

to:

serial:

port: /dev/ttyACM0

adapter: ember

This was essential. ezsp is deprecated for your dongle's firmware.

#### 6. Freeing the Serial Port

The error Cannot lock port was fixed by killing the stuck node process using:

#### 7. sudo kill -9 <PID>

#### 8. Using pnpm instead of npm

While pnpm didn't directly solve the port issue, it ensured you had the cleanest dependency setup without corrupted node\_modules. This likely prevented some other hidden errors.

#### 9. Permissions and cleanup

You also fixed:

#### 10. sudo chown -R michelpaliz:michelpaliz ./data

Which allowed the app to delete logs and start cleanly.

## Summary

Change	Was It Critical?	Why It Helped
Flashing firmware	<input checked="" type="checkbox"/> Yes	Needed modern stack for Sonoff V2 dongle
Setting adapter: ember	<input checked="" type="checkbox"/> Yes	Correct protocol for newer firmware
Killing stuck node PIDs	<input checked="" type="checkbox"/> Yes	Released locked serial port

Change	Was It Critical?	Why It Helped
Switching to pnpm	◆ Helpful	Ensured clean install, no node_modules issues
Fixing permissions	<input checked="" type="checkbox"/> Yes	Prevented log-related startup failures

---

Last commands before it worked

```
michelpaliz@raspberrypi:~/Documents/zigbee2mqtt $ sudo fuser -v /dev/ttyACM0
      USER      PID ACCESS COMMAND
/dev/ttyACM0:  michelpaliz 11681 F.... node
michelpaliz@raspberrypi:~/Documents/zigbee2mqtt $ sudo kill -9 <PID>
bash: syntax error near unexpected token `newline'
michelpaliz@raspberrypi:~/Documents/zigbee2mqtt $ sudo kill -9 11681
michelpaliz@raspberrypi:~/Documents/zigbee2mqtt $ sudo fuser -v /dev/ttyACM0
      USER      PID ACCESS COMMAND
/dev/ttyACM0:  michelpaliz 11759 F.... node
michelpaliz@raspberrypi:~/Documents/zigbee2mqtt $ sudo fuser -v /dev/ttyACM0
      USER      PID ACCESS COMMAND
/dev/ttyACM0:  michelpaliz 11759 F.... node
michelpaliz@raspberrypi:~/Documents/zigbee2mqtt $ pnpm start
```

Configuration.yaml

```
homeassistant:
  enabled: false

mqtt:
  base_topic: zigbee2mqtt
  server: mqtt://localhost

# serial:
#  port: /dev/ttyACM0

serial:
  port: /dev/serial/by-id/usb-ITEAD SONOFF_Zigbee_3.0_USB_Dongle_Plus_V2_20220810192321-if00
  adapter: ember

frontend:
  enabled: true
  port: 8080

advanced:
  log_level: info
  pan_id: 6754
  channel: 11
  network_key:
```

- 24
- 39
- 90
- 215
- 205
- 180
- 232
- 100
- 240
- 92
- 203
- 71
- 174
- 28
- 103
- 1

version: 4

devices:

- '0x00158d0000b935e5':
  - friendly\_name: Sensor\_Puerta
- '0x02124b0021915bdd':
  - friendly\_name: Sensor\_Movimiento
- '0x4c138a0764f08980':
  - friendly\_name: Sensor\_Sirena

external\_converters:

- extension/neo\_siren.js

## EXAMPLE OUTPUT WHEN IT'S WORKING

```
michelpaliz@raspberrypi:~/Documents/zigbee2mqtt $ pnpm start

> zigbee2mqtt@2.3.0 start /home/michelpaliz/Documents/zigbee2mqtt
> node index.js

Starting Zigbee2MQTT without watchdog.
[2025-05-13 18:00:24] info: z2m: Logging to console, file (filename: log.log)
[2025-05-13 18:00:24] info: z2m: Starting Zigbee2MQTT version 2.3.0 (commit
#9d1427c1)
[2025-05-13 18:00:24] info: z2m: Starting zigbee-herdsman (4.0.0)
```

[2025-05-13 18:00:24] info: zh:ember: Using default stack config.  
[2025-05-13 18:00:24] info: zh:ember: ====== Ember Adapter Starting ======

[2025-05-13 18:00:24] info: zh:ember:ezsp: ====== EZSP starting ======

[2025-05-13 18:00:24] info: zh:ember:uart:ash: ====== ASH Adapter reset ======

[2025-05-13 18:00:24] info: zh:ember:uart:ash: RTS/CTS config is off, enabling software flow control.

[2025-05-13 18:00:24] info: zh:ember:uart:ash: Serial port opened

[2025-05-13 18:00:24] info: zh:ember:uart:ash: ====== ASH starting ======

[2025-05-13 18:00:25] info: zh:ember:uart:ash: ====== ASH connected ======

[2025-05-13 18:00:25] info: zh:ember:uart:ash: ====== ASH started ======

[2025-05-13 18:00:25] info: zh:ember:ezsp: ====== EZSP started ======

[2025-05-13 18:00:25] info: zh:ember: Adapter EZSP protocol version (13) lower than Host. Switched.

[2025-05-13 18:00:25] info: zh:ember: Adapter version info: {"ezsp":13,"revision":"7.4.4 [GA]","build":0,"major":7,"minor":4,"patch":4,"special":0,"type":170}

[2025-05-13 18:00:26] info: zh:ember: [STACK STATUS] Network up.

[2025-05-13 18:00:26] info: zh:ember: [INIT TC] Adapter network does not match config. Leaving network...

[2025-05-13 18:00:27] info: zh:ember: [STACK STATUS] Network down.

[2025-05-13 18:00:27] info: zh:ember: [INIT TC] No valid backup found.

[2025-05-13 18:00:27] info: zh:ember: [INIT TC] Forming from config.

[2025-05-13 18:00:27] info: zh:ember: [INIT FORM] Forming new network with: {"panId":6754,"extendedPanId":221,221,221,221,221,221,221,221,"radioTxPower":5,"radioChannel":11,"joinMethod":0,"nwkManagerId":0,"nwkUpdateId":0,"channels":134215680}

[2025-05-13 18:00:27] info: zh:ember: [STACK STATUS] Network up.

[2025-05-13 18:00:27] info: zh:ember: [INIT FORM] New network formed!

[2025-05-13 18:00:27] info: zh:ember: [CONCENTRATOR] Started source route discovery. 1248ms until next broadcast.

[2025-05-13 18:00:27] info: zh:controller: Wrote coordinator backup to '/home/michelpaliz/Documents/zigbee2mqtt/data/coordinator\_backup.json'

[2025-05-13 18:00:27] info: z2m: zigbee-herdsman started (reset)

[2025-05-13 18:00:27] info: z2m: Coordinator firmware version: {"meta":{"build":0,"ezsp":13,"major":7,"minor":4,"patch":4,"revision":"7.4.4 [GA]","special":0,"type":170},"type":"EmberZNet"}

[2025-05-13 18:00:27] info: z2m: Currently 0 devices are joined.

[2025-05-13 18:00:27] info: z2m: Connecting to MQTT server at mqtt://localhost

[2025-05-13 18:00:27] info: z2m: Connected to MQTT server

[2025-05-13 18:00:27] info: z2m:MQTT publish: topic 'zigbee2mqtt/bridge/state', payload '{"state":"online"}'

[2025-05-13 18:00:27] info: z2m: Started frontend on port 8080

[2025-05-13 18:00:27] info: z2m: Zigbee2MQTT started!



# WILL IT WORK TOMORROW?

Great question — and the short answer is:

- 💡 If you don't set up auto-start:
- ✗ Zigbee2MQTT will not start automatically when the Raspberry Pi is rebooted or powered back on.

You'd have to manually run:

```
cd ~/Documents/zigbee2mqtt  
pnpm start
```

- ✓ If you followed my earlier instructions and set up the systemd service:

Then yes, it will start automatically every time the Pi boots.

To confirm, run:

```
sudo systemctl is-enabled zigbee2mqtt
```

If it returns:

```
enabled
```

🎉 You're good — it'll work tomorrow after a reboot or power loss.

- 💡 Want to test it?

You can simulate tomorrow by running:

```
sudo reboot
```

Then after 1–2 minutes, open:

<http://192.168.130.100:8080>

If it loads and shows the frontend, then you're all set.

Would you like me to generate a .sh script to start, stop, and check the service manually?

Now we can see the page dashboard

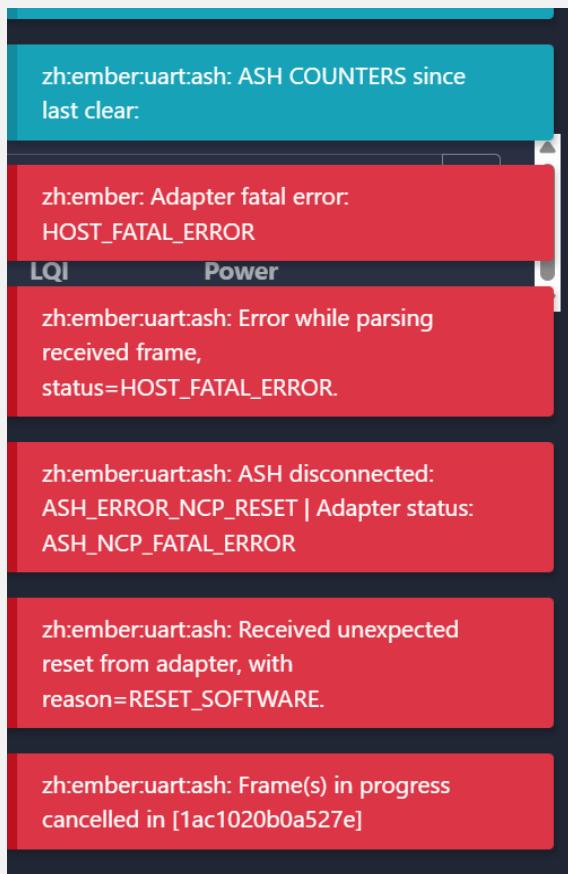
Not secure 192.168.130.100:8080/#/ New Chrome available :

Zigbee2MQTT Devices Dashboard Map Groups OTA Touchlink Logs Extensions ⚙️ 🇬🇧 Permit join (All)

Enter search criteria

#	Pic	Friendly name	IEEE Address	Manufacturer	Model	LQI	Power
---	-----	---------------	--------------	--------------	-------	-----	-------

## I NOTICED SOME ERRORS



Thanks — based on that log, it's clear:

✗ Your Zigbee dongle is actively crashing and resetting, not just once during startup, but during normal operation.

⚠ This is not normal behavior — even if Zigbee2MQTT recovers.

🧠 What's Happening:

- RESET\_SOFTWARE + ASH\_NCP\_FATAL\_ERROR:  
The dongle is crashing, resetting itself, and losing connection with Zigbee2MQTT.
- HOST\_FATAL\_ERROR:  
The USB communication breaks and has to be re-established.
- Cancelled frame, parsing error:  
This can result in lost commands, failed device joins, or devices not responding.

🛠 This Needs to Be Fixed — or You'll See:

- Devices not responding randomly
- Pairing failures
- Inconsistent network behavior
- Eventual total failure if resets escalate

✓ Solutions (in order of priority)

## 1. USB Extension Cable (strongly recommended)

Move the dongle physically away from the Raspberry Pi and Wi-Fi chip.

[Dongle]--USB Extension-->[Pi]

- Fixes interference and heat instability
- Solves 90% of V2 dongle reset issues

## 2. Powered USB Hub

If you're running other devices (e.g., SSD, camera), the Pi's USB power might be unstable.

Use a hub with its own power supply.

## 3. Reflash with Known Stable Firmware

Even though you already flashed, do it again to ensure firmware wasn't corrupted. Use this:

 [Koenkk Firmware for EFR32MG21 \(Sonoff V2\)](#)

## 4. Upgrade Zigbee2MQTT

You're on version 2.3.0 — many improvements to ember adapter stability have been added since. To upgrade:

```
cd ~/Documents/zigbee2mqtt
```

```
git pull
```

```
pnpm install
```

### What You Can Do Right Now

If you add a USB extension cable and reboot Zigbee2MQTT, it may stop crashing immediately.

That's the simplest and most effective next step.

Want help picking a firmware version or verifying your flash tool for re-flashing?

# FINALLY IS WORKING AND WE CAN CHECK THE MOSQUITTO IS WORKING TOO

```
michelpaliz@raspberrypi:~ $ mosquitto_sub -h localhost -t zigbee2mqtt/temperature_humidity -v
zigbee2mqtt/temperature_humidity {"battery":100,"linkquality":255,"temperature":27.32}
```

## DASHBOARD TO CONNECT THE DEVICE

#	Pic	Friendly name	IEEE Address	Manufacturer	Model	LQI	Power
1		0x00124b00291251c2	0x00124b00291251c2 (0x3B90)	Unsupported		N/A	?

#	Pic	Friendly name	IEEE Address	Manufacturer	Model	LQI	Power
1		temperature_humidity	0x00124b00291251c2 (0x3B90)	SONOFF	SNZB-02	255	<p>zh:controller:device: Device '0x00124b00291251c2' is only compliant to revision 'pre-21' of the ZigBee specification (current revision: 23).</p> <p>z2m: Device 'temperature_humidity' is supported, identified as: SONOFF Temperature and humidity sensor (SNZB-02)</p> <p>z2m: Successfully interviewed 'temperature_humidity', device has successfully been paired</p> <p>zh:controller: Successfulely interviewed '0x00124b00291251c2'.</p>

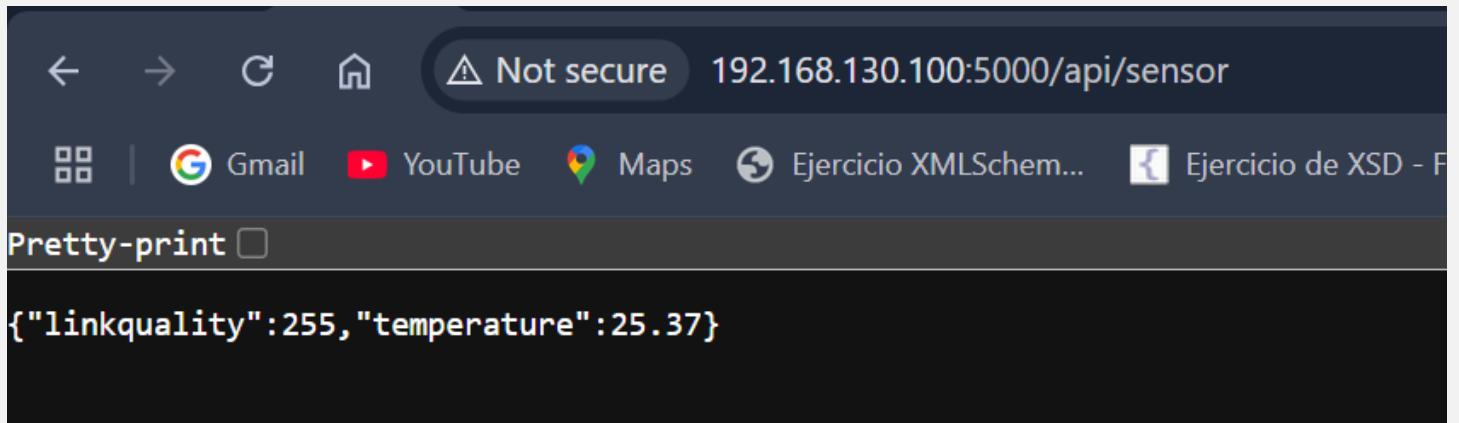
0x00124b00291251c2	▼
About	Expose
Bind	Reporting
Settings	Settings (specific)
State	Clusters
Scene	Dev console
<b>Battery</b>	100 %
Remaining battery in %, can take up to 24 hours before reported	
<b>Temperature</b>	26.99 °C
Measured temperature value	
<b>Humidity</b>	59.39 %
Measured relative humidity	
<b>Voltage</b>	3100 mV
Voltage of the battery in millivolts	
<b>Linkquality</b>	255 lqi
Link quality (signal strength)	

Zigbee2MQTT Devices Dashboard Map Groups OTA Touchlink Logs Extensions   Permit join (All) 							
#	Pic	Friendly name 	IEEE Address	Manufacturer	Model	LQI	Power
1		temperature_humidity	0x00124b00291251c2 (0x3B90)	SONOFF	SNZB-02	255	?

About      Exposes      Bind      Reporting      Settings

```
{  
  "linkquality": 255,  
  "voltage": 3100,  
  "battery": 100,  
  "temperature": 29.36,  
  "humidity": 47.38  
}
```

## API SCREENSHOTS

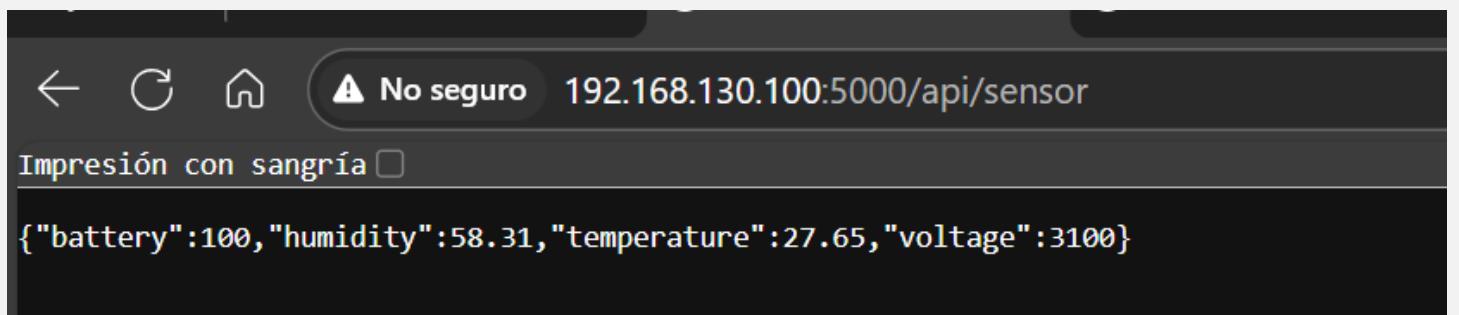


Not secure 192.168.130.100:5000/api/sensor

Gmail YouTube Maps Ejercicio XMLSchem... Ejercicio de XSD - F

Pretty-print

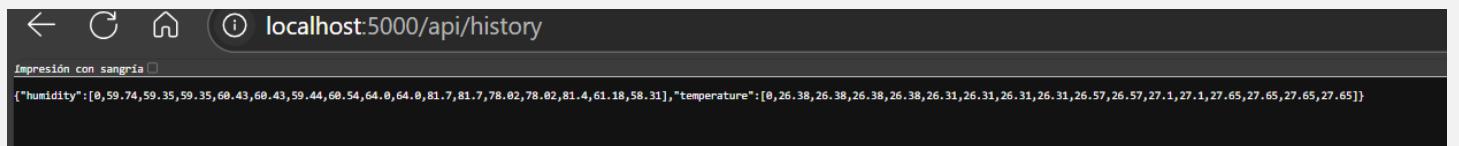
```
{"linkquality":255, "temperature":25.37}
```



Not seguro 192.168.130.100:5000/api/sensor

Impresión con sangría

```
{"battery":100, "humidity":58.31, "temperature":27.65, "voltage":3100}
```

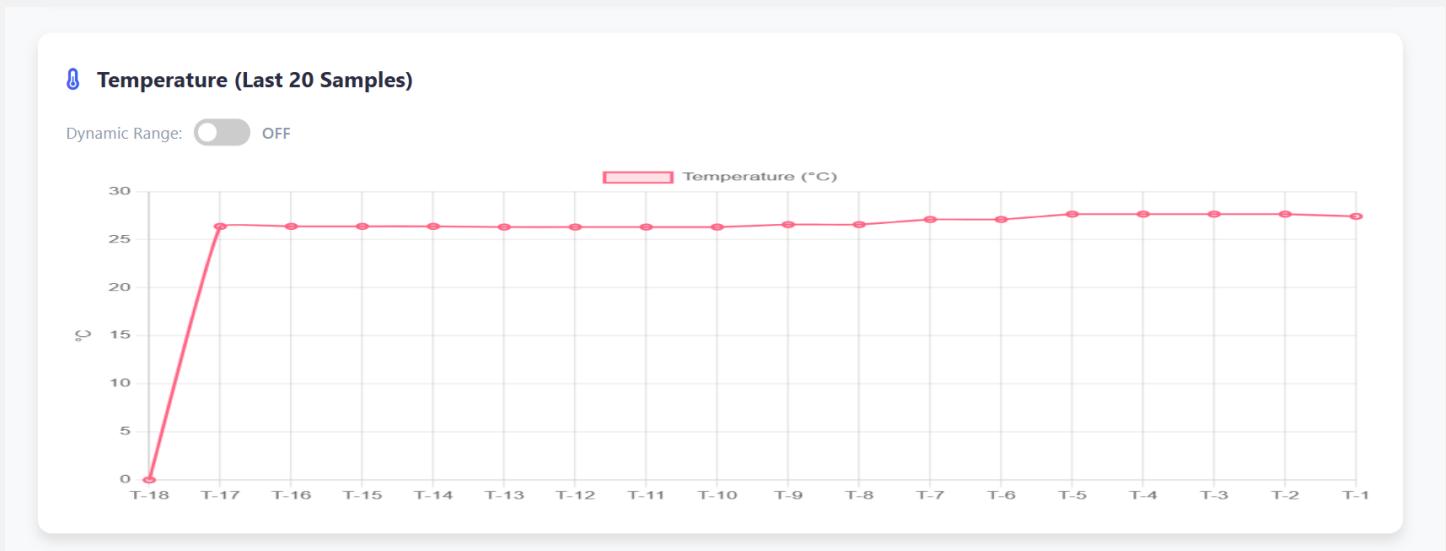
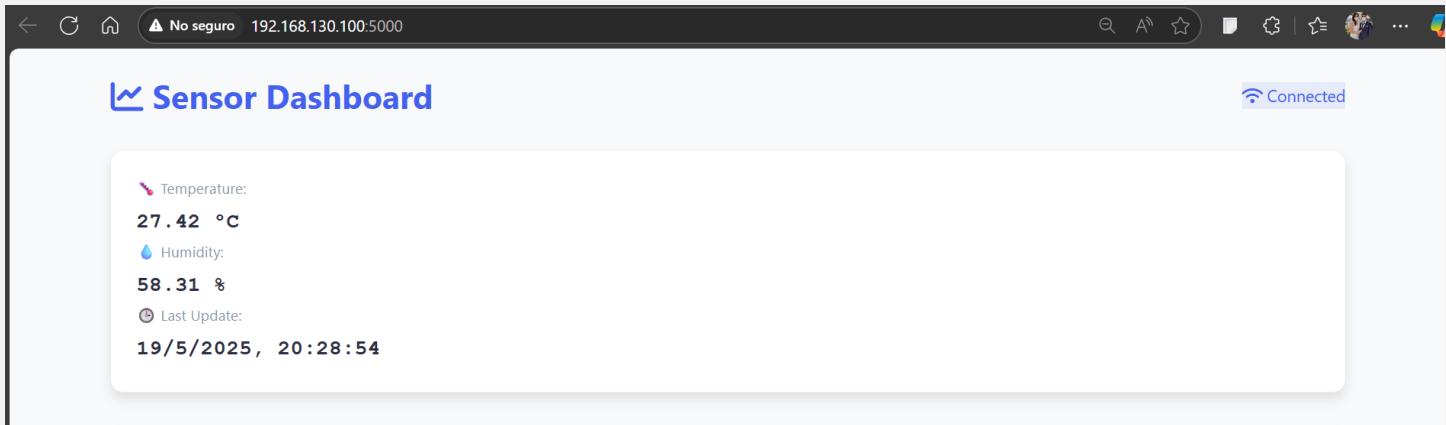


localhost:5000/api/history

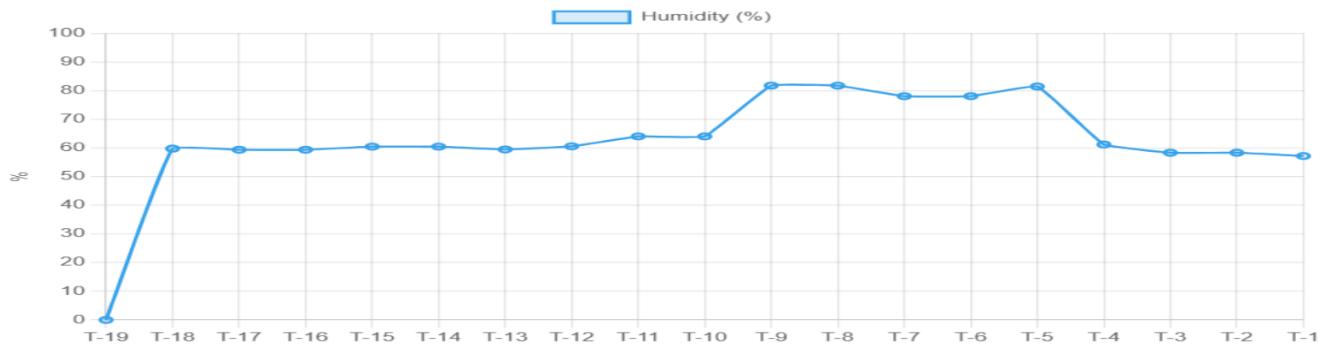
Impresión con sangría

```
{"humidity": [0, 59.74, 59.35, 59.35, 60.43, 59.44, 60.54, 64.0, 64.0, 81.7, 81.7, 78.02, 78.02, 81.4, 61.18, 58.31], "temperature": [0, 26.38, 26.38, 26.38, 26.38, 26.31, 26.31, 26.31, 26.31, 26.57, 26.57, 27.1, 27.1, 27.65, 27.65, 27.65]}
```

# DASHBOARD SCREENSHOTS



### 💧 Humidity (Last 20 Samples)



## ⚡ Sensor Dashboard

Connected

🌡 Temperature:

**27.42 °C**

💧 Humidity:

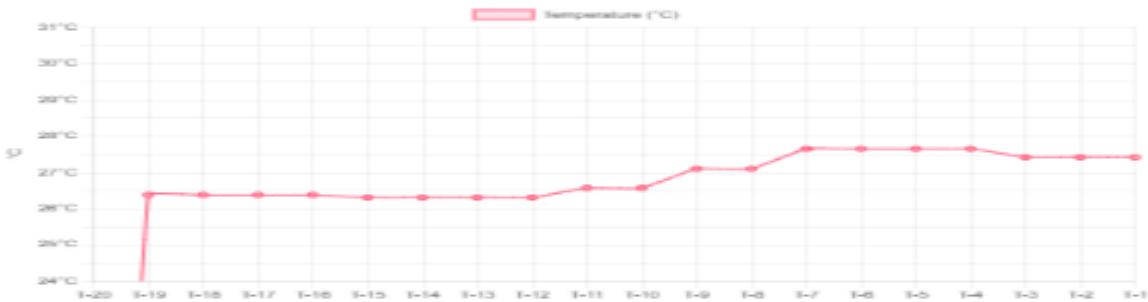
**58.64 %**

🕒 Last Update:

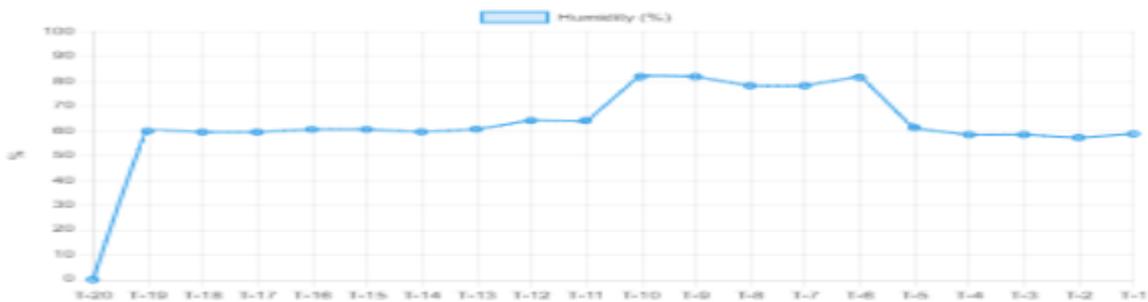
**19/5/2025, 20:29:55**

### 🌡 Temperature (Last 20 Samples)

Dynamic Range:  ON



### 💧 Humidity (Last 20 Samples)



Temperature:  
**27.2 °C**

Humidity:  
**58.64 %**

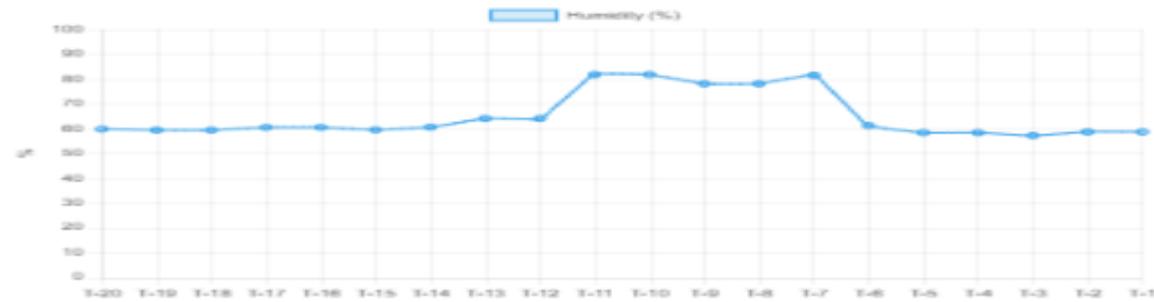
Last Update:  
**19/5/2025, 20:30:14**

## Temperature (Last 20 Samples)

Dynamic Range:  OFF



## Humidity (Last 20 Samples)



## Summary

Use the environment in order to execute the python need to add the dependencies you can add it because I created a txt file called dependencies.txt

[192.168.130.100:5000/api/sensor](http://192.168.130.100:5000/api/sensor)

[localhost:5000/api/history](http://localhost:5000/api/history)

[Sensor Dashboard](#)