



CONSTRUYENDO UNA RED GLOBAL DE INTERNET DE LAS COSAS ENTRE TOD@S

Facendo IoT con LoRaWAN. Introducción

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Integraciones

- Data Storage
- Cayenne
- IFTTT
- Node-RED

Data Storage

Applications > jfmateos_orense

DEVICES

[register device](#) [manage devices](#)

1 registered device

COLLABORATORS

[manage collaborators](#)

jfmateos [collaborators](#) [delete](#) [devices](#) [settings](#)

ACCESS KEYS

[manage keys](#)

default key [devices](#) [messages](#)

ttn-account-v2.1 [base64]

https://jfmateos_orense.data.thethingsnetwork.org/swagger.yaml [Authorize](#) [Explore](#)

Network Data Storage

is available using a REST API

gs Industries B.V.
www.thethingsindustries.com

Available authorizations

The Things Network access key authorization

Enter an app access key. You can find app access keys in The Things Network Console in Application Overview.

key:

[Authorize](#) [Cancel](#)

[Query data](#)

[Query data for a specific device](#)

[VALID](#) [{-}](#)

Data Storage

GET /api/v2/query Query data

Implementation Notes
Query the data for all devices

Response Class (Status 200)
An array of data

Model Example Value

```
[
  {
    "device_id": "string",
    "raw": "string",
    "time": "string",
    "fields": "string",
    "field2": "string"
  }
]
```

Response Content Type

Parameters

Parameter	Value	Description	Parameter Type	Data Type
last	<input type="text"/>	Duration on which we want to get the data (default 1h). Pass 30s for the last 30 seconds, 1h for the last hour, 2d for the last 48 hours, etc	query	string

Try it out! [Make Request](#)

Curl

```
curl -X GET --header 'Accept: application/json' --header 'Authorization: key ttn-account-v2.T6RS_GdC1q0Xs_S3Ij_0SLRLug0Wf2b_Bb1CFH0LbHs' 'https://jfmteos_orense.data.thethingsnetwork.org/api/v2/query'
```

Request URL

```
https://jfmteos_orense.data.thethingsnetwork.org/api/v2/query
```

Response Body

```
[
  {
    "analog_in_1": 3.36,
    "barometric_pressure_3": 946.8,
    "device_id": "jfmteos_orense_01",
    "raw": "AQIBUA3nAM4DcyT88Ghb",
    "relative_humidity_4": 46.5,
```

Data Storage

Postman interface showing an API request to the Things Network API. The URL is `https://jfmateos_orense.data.thethingsnetwork.org/api/v2/query`. The Headers tab is selected, showing an Authorization header with the value `key ttn-account-v2.T6RS_...`. The Body tab is also selected, showing a JSON response with sensor data.

Headers (1)

KEY	VALUE	DESCRIPTION
<input checked="" type="checkbox"/> Authorization	key ttn-account-v2.T6RS_...	

Body

```
1 {
2   "analog_in_1": 3.36,
3   "barometric_pressure_3": 946.8,
4   "device_id": "jfmateos_orense_01",
5   "raw": "AQIBUAJnAN4DcyT8BGhb",
6   "relative_humidity_4": 45.5,
7   "temperature_2": 22.2,
8   "time": "2019-10-24T15:00:10.764739791Z"
9 }
10
11 {
12   "analog_in_1": 3.36
```


Juan Félix Mateos

Cayenne MyDevices

Applications > jfmateos_orense > Integrations

Overview Devices Payload Formats **Integrations** Data Settings

ADD INTEGRATION



MyDevices (v2.6.0)
myDevices
Quickly design, prototype and commercialize IoT solutions with myDevices Cayenne
[documentation](#)

Process ID
The unique identifier of the new integration process

jfmateos_orense_cayenne ✓

Access Key
The access key used for downlink

default key devices messages ⌵

Cayenne MyDevices

The image displays four screenshots of the Cayenne MyDevices web interface, illustrating the steps to add a new device. Red circles highlight the 'Device/Widget' option in the 'Add new...' dropdown, the 'LoRa' option in the 'Extensions' list, and the 'Cayenne LPP' option in the 'Add new...' dropdown.

Screenshot 1 (Top Left): Shows the 'Add new...' dropdown menu with 'Device/Widget' highlighted. Other options include 'Event', 'Trigger', and 'Project'.

Screenshot 2 (Bottom Left): Shows the 'Add new...' dropdown menu with 'Device/Widget' highlighted. The 'Extensions' list is expanded, showing 'LoRa' highlighted. Other extensions include 'Acklio', 'Actility', 'CityKinect', 'Everynet', 'Kerlink', 'Loriot', 'Objenious', 'OrbiWise', 'Pixel Networks', 'Sagemcom', and 'Semtech'.

Screenshot 3 (Top Right): Shows the 'Add new...' dropdown menu with 'Device/Widget' highlighted. The 'Extensions' list is expanded, showing 'LoRa' highlighted. Other extensions include 'Acklio', 'Actility', 'CityKinect', 'Everynet', 'Kerlink', 'Loriot', 'Objenious', 'OrbiWise', 'Pixel Networks', 'Sagemcom', and 'Semtech'.

Screenshot 4 (Bottom Right): Shows the 'Add new...' dropdown menu with 'Device/Widget' highlighted. The 'Extensions' list is expanded, showing 'LoRa' highlighted. Other extensions include 'Acklio', 'Actility', 'CityKinect', 'Everynet', 'Kerlink', 'Loriot', 'Objenious', 'OrbiWise', 'Pixel Networks', 'Sagemcom', and 'Semtech'.

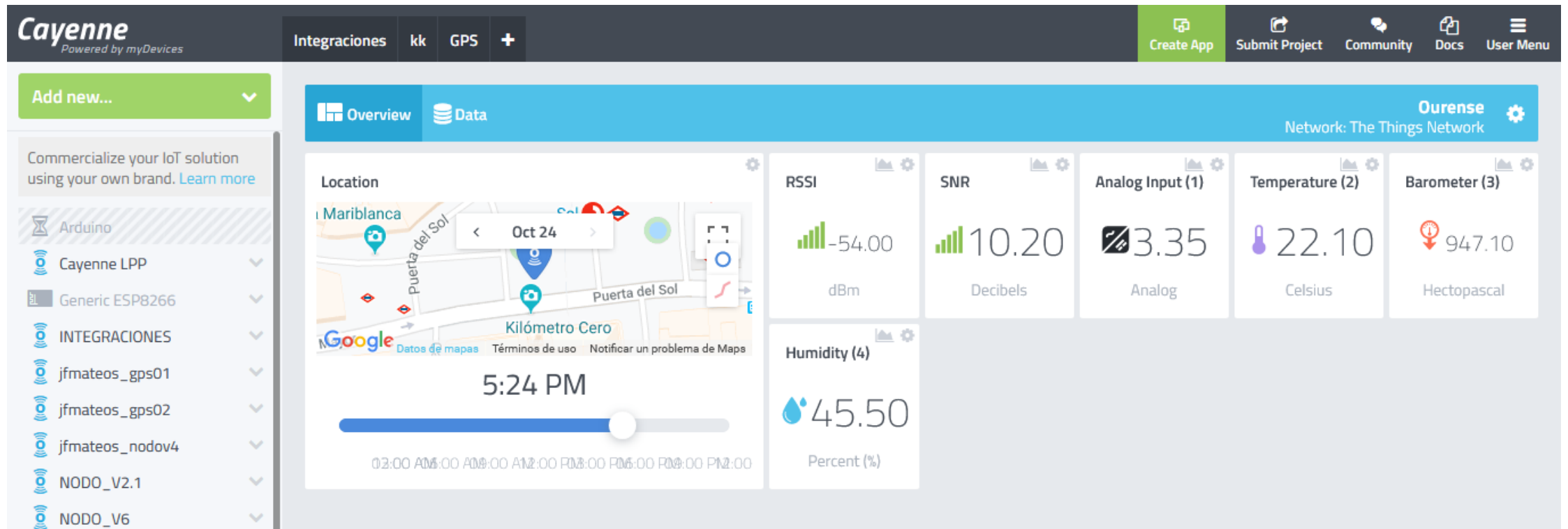
Cayenne MyDevices

The screenshot displays the Cayenne MyDevices web interface. The top navigation bar includes the Cayenne logo, a search bar, and links for Integraciones, kk, GPS, and a plus sign. The right side of the top bar features buttons for Create App, Submit Project, Community, Docs, and User M.

The left sidebar contains an 'Add new...' button and a list of devices. The main content area is titled 'Devices & Widgets' and includes a search bar. Below this, there are categories for DEVICES, Single Board Computers, MicroControllers, Sensors, Actuators, Extensions, and LoRa. The LoRa category is expanded, showing options like Acklio, Actility, CityKinect, Everynet, Kerlink, and Loriot.

The right sidebar is titled 'Enter Settings' and shows the configuration for a Cayenne LPP device. The 'Name' field is set to 'Cayenne LPP'. The 'DevEUI' field is circled in red and contains the value '0008DD...'. The 'Activation Mode' dropdown is set to 'Already Registered'. The 'Tracking' section has a 'Location' dropdown circled in red, showing the option 'This device doesn't move'. There is also an 'Address' field and an 'Add device' button at the bottom.

Cayenne MyDevices



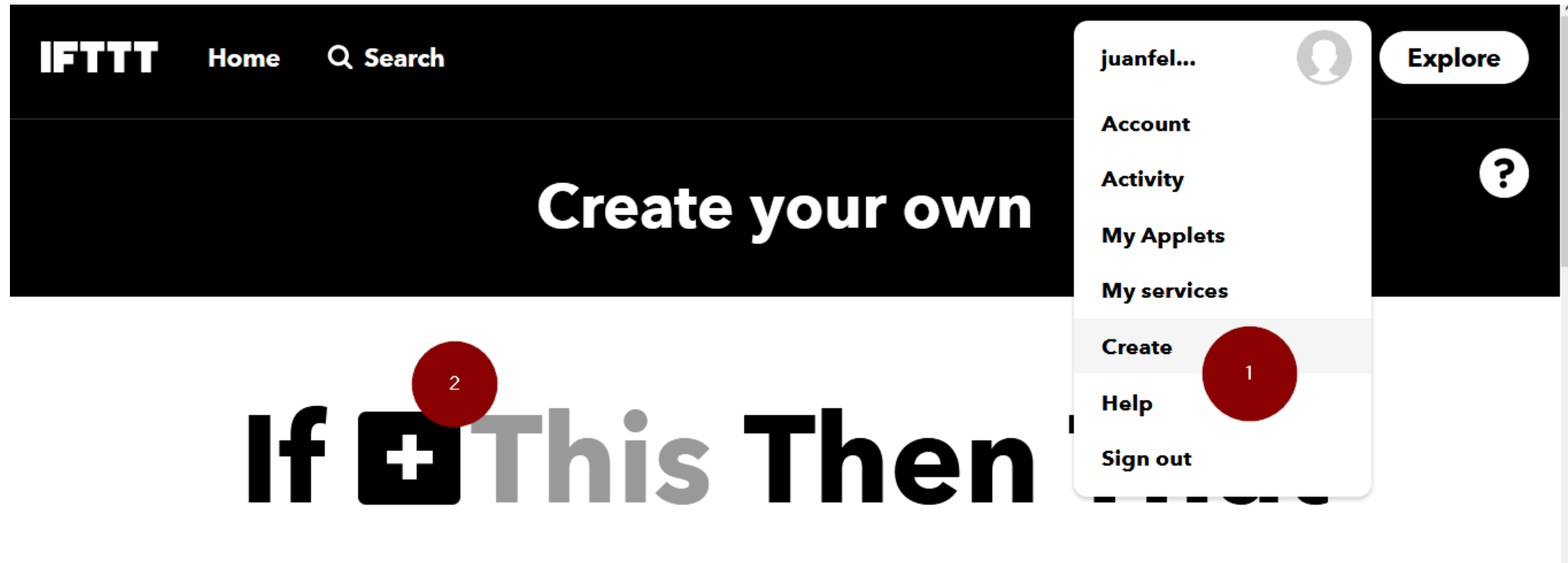
Cayenne MyDevices

The image shows the Cayenne MyDevices web interface. The main dashboard displays several sensor readings: Location (Mariblanca, Kilómetro Cero), RSSI (-60.00 dBm), SNR (9.20 Decibels), Analog Input (1) (3.35 Analog), Temperature (2) (26.50 Celsius), and Barometer (3) (947.30). A red arrow points to the 'Trigger' button in the Temperature (2) sensor's settings menu.

The configuration window for triggers is open, showing the following settings:

- Triggers** (Header)
- if** (Condition): Ourense (Juan - AnalogSensor - Channel 2), Temperature (2), 26 (Value), Sensor above (checked).
- then notify...** (Action):
 - Add custom recipient: +34 616 161 161 (circled in red).
 - Select All: ☐
 - Send Text Message (requires mobile phone number): ☒ (circled in red).
 - Send Email: ☐
- Buttons: Cancel, Save.

IFTTT = If This Then That



IFTTT = If This Then That

Choose a service

Step 1 of 6

Q webhook



Webhooks

< Back



Choose trigger

Step 2 of 6

Receive a web request

This trigger fires every time the Maker service receives a web request to notify it of an event. For information on triggering events, go to your Maker service settings and then the listed URL (web) or tap your username (mobile)

IFTTT = If This Then That



Complete trigger fields

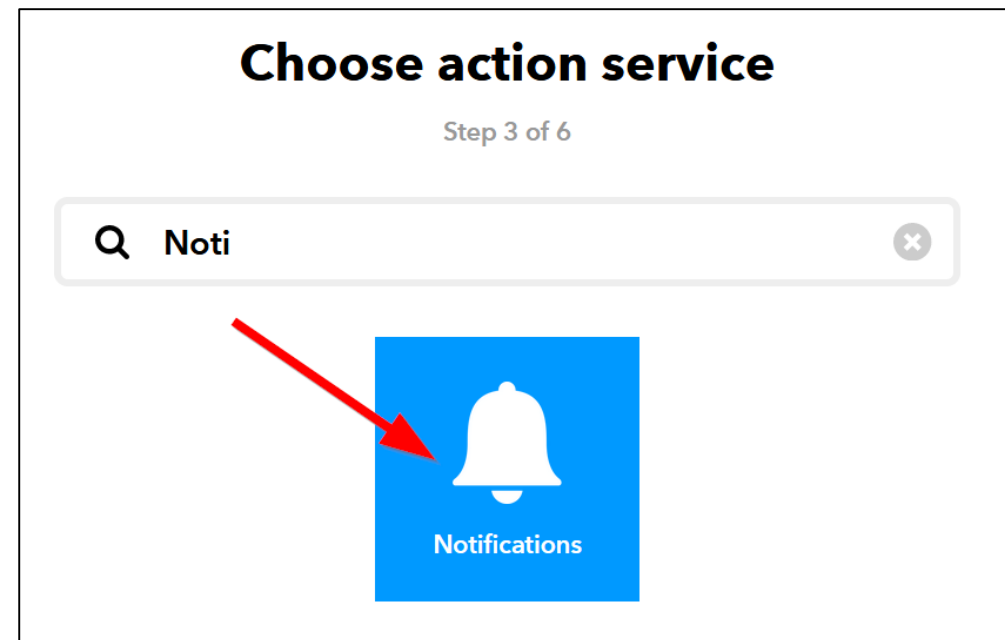
Step 2 of 6

Event Name

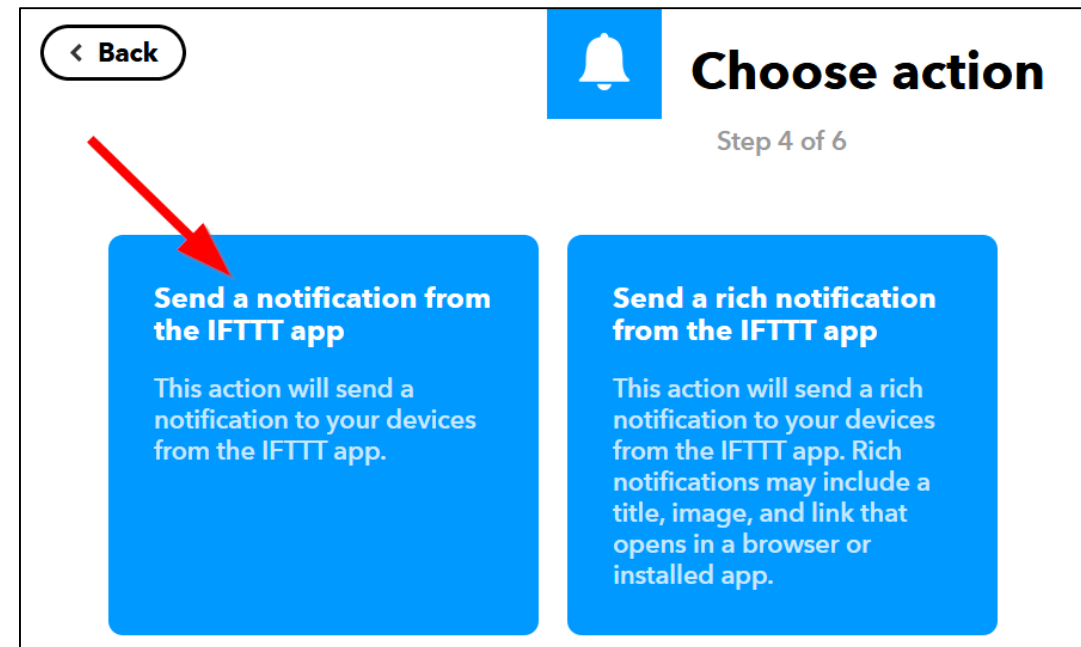
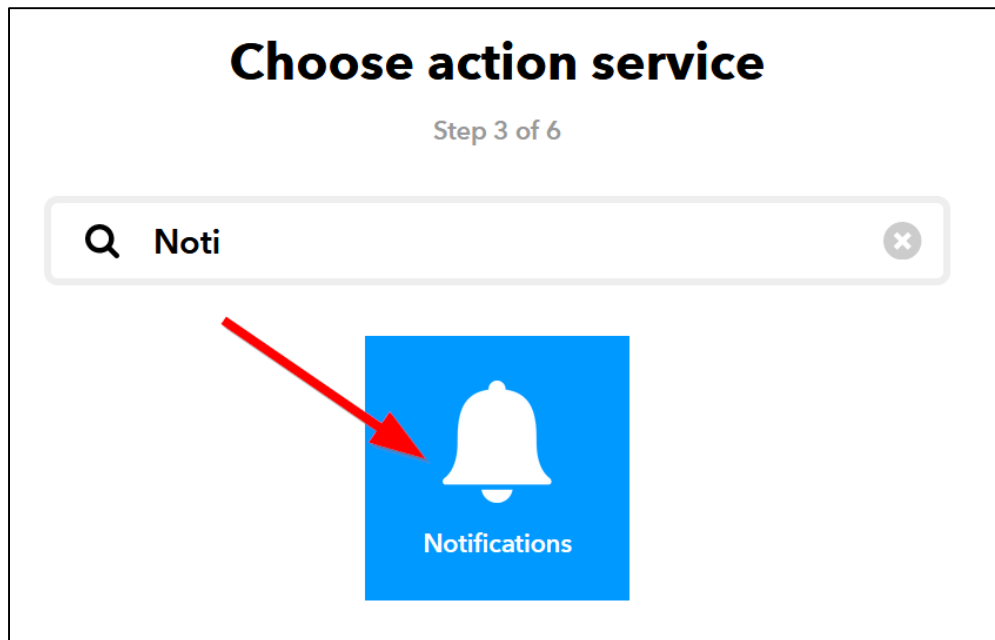
The name of the event, like "button_pressed" or "front_door_opened"

Create trigger


IFTTT = If This Then That



IFTTT = If This Then That



IFTTT = If This Then That



Complete action fields

Step 5 of 6

Message



{{EventName}} {{OccurredAt}} T:
{{Value1}}°C p: {{Value2}}hPa H:
{{Value3}}%

Add ingredient

Create action

Review and finish

Step 6 of 6



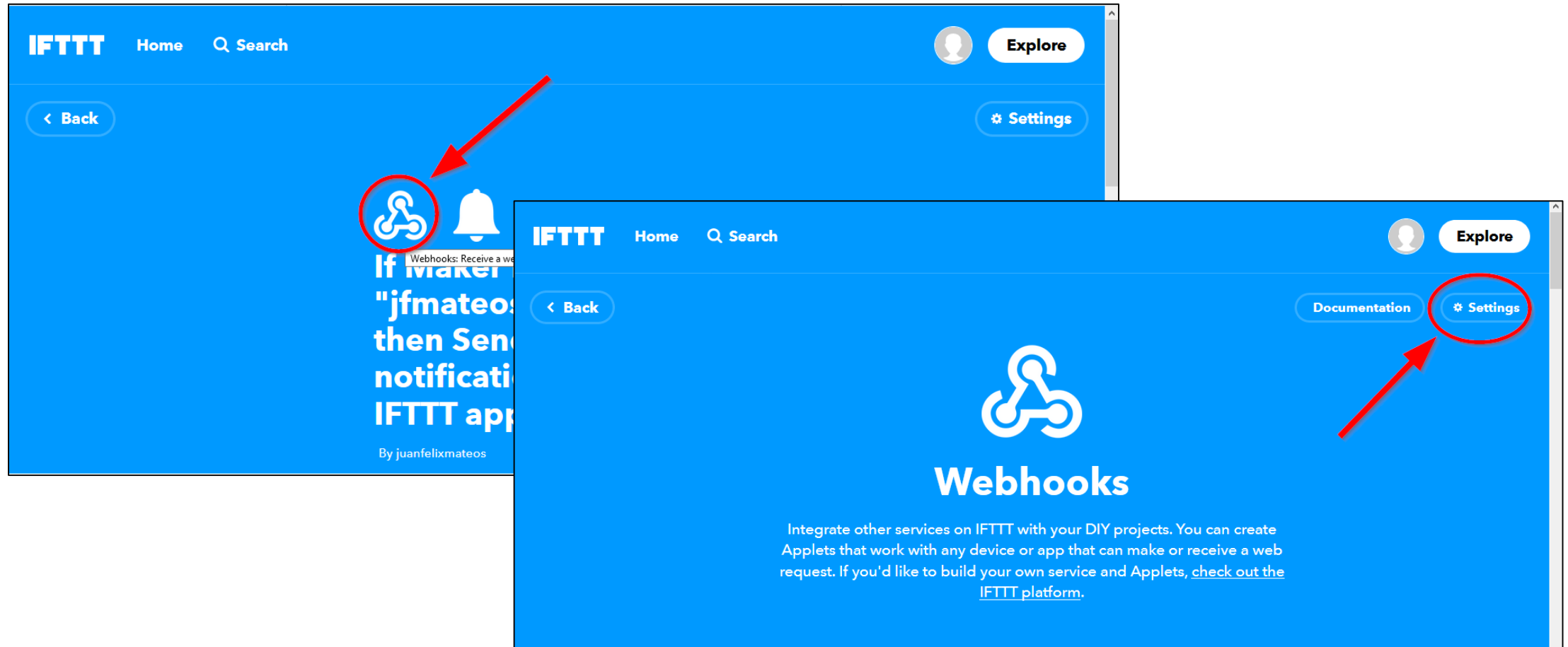
If Maker Event
"jfmateos_ourense_ifttt", then
Send a notification from the
IFTTT app

by jmfelixma

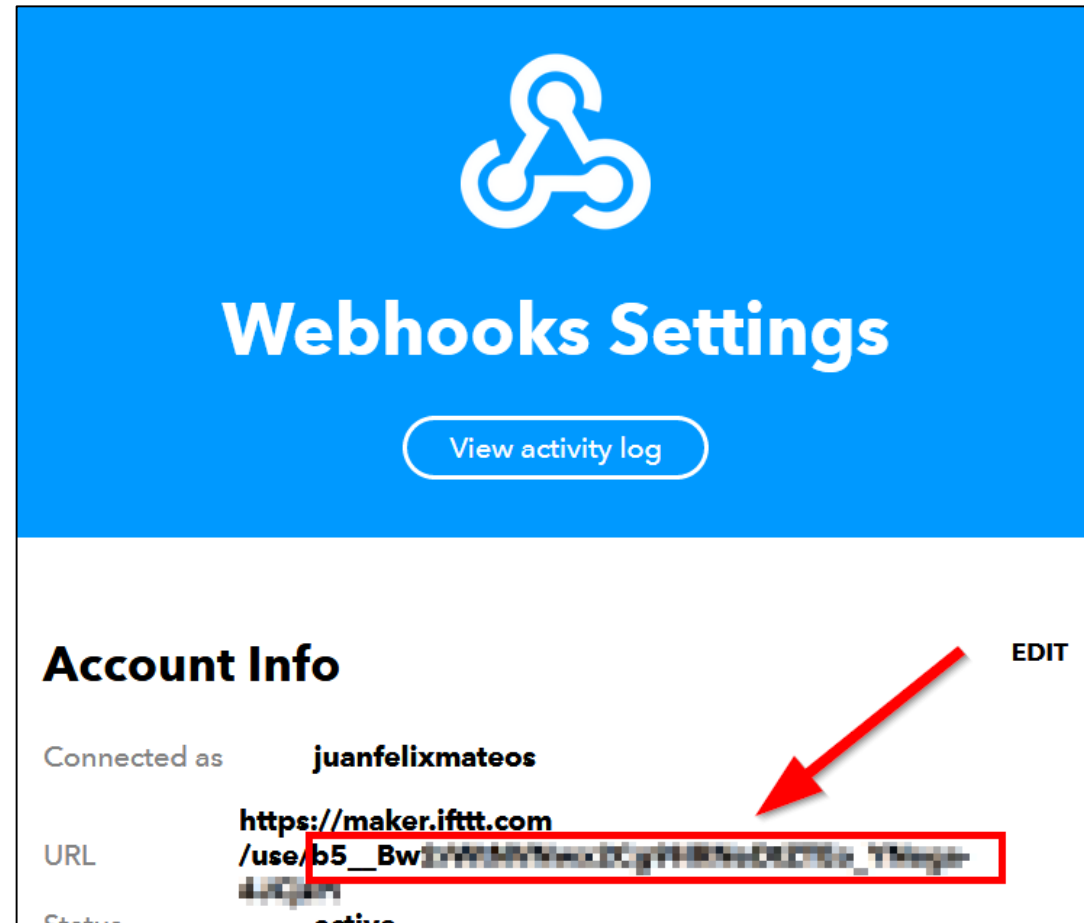
NO OLVIDAR

Finish

IFTTT = If This Then That



IFTTT = If This Then That



The image shows the IFTTT Webhooks Settings page. At the top is a blue header with the IFTTT logo and the title "Webhooks Settings". Below the header is a white button labeled "View activity log". The main content area is white and contains the "Account Info" section. This section shows the user is connected as "juanfelixmateos" and provides a URL: "https://maker.ifttt.com/use/b5_Bw...". A red rectangle highlights the URL, and a red arrow points to it from the right. To the right of the "Account Info" section is an "EDIT" link. The status of the webhook is shown as "active".

Webhooks Settings

[View activity log](#)

Account Info [EDIT](#)

Connected as **juanfelixmateos**


URL **https://maker.ifttt.com/use/b5_Bw...**

Status **active**

IFTTT = If This Then That

Applications > jfmateos_orense > Integrations

ADD INTEGRATION

**IFTTT Maker** (v2.6.0)
The Things Industries B.V.
Sends uplink messages to your IFTTT Maker Channel. If you want to trigger this (true or false) as a result of your decoder or converter payload function. Use the special 'hardware_serial' for the DevEUI.
[documentation](#)

Process ID
The unique identifier of the new integration process

jfmateos_orense_ifttt

Event Name
The event name of your IFTTT recipe

jfmateos_orense_ifttt

Key
Your key

b5_Bw2XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Applications > jfmateos_orense > Integrations

Your key

b5_Bw2XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Value 1
Payload field name to send as value 1

temperature_2

Value 2
Payload field name to send as value 2

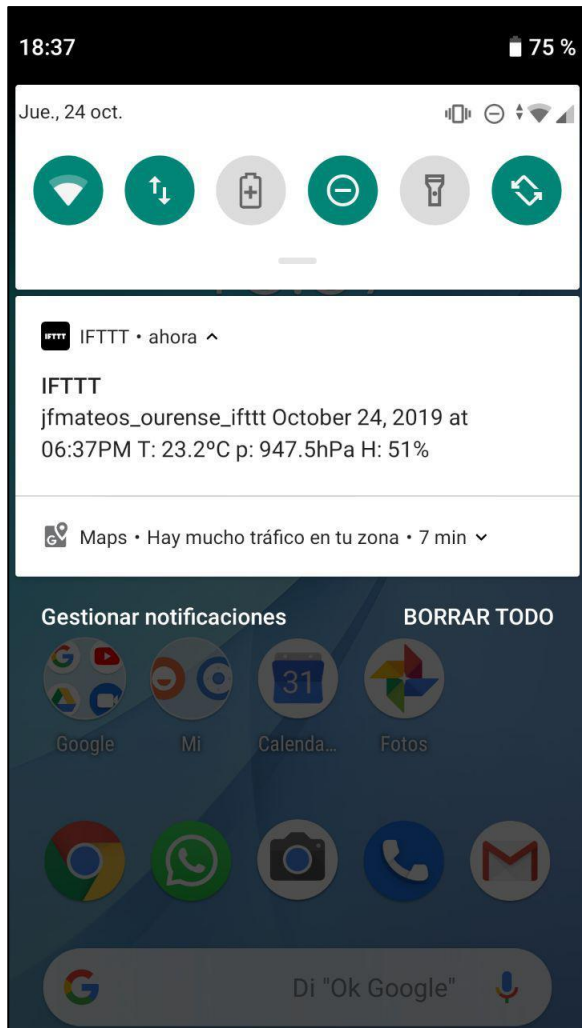
barometric_pressure_3

Value 3
Payload field name to send as value 3

relative_humidity_4

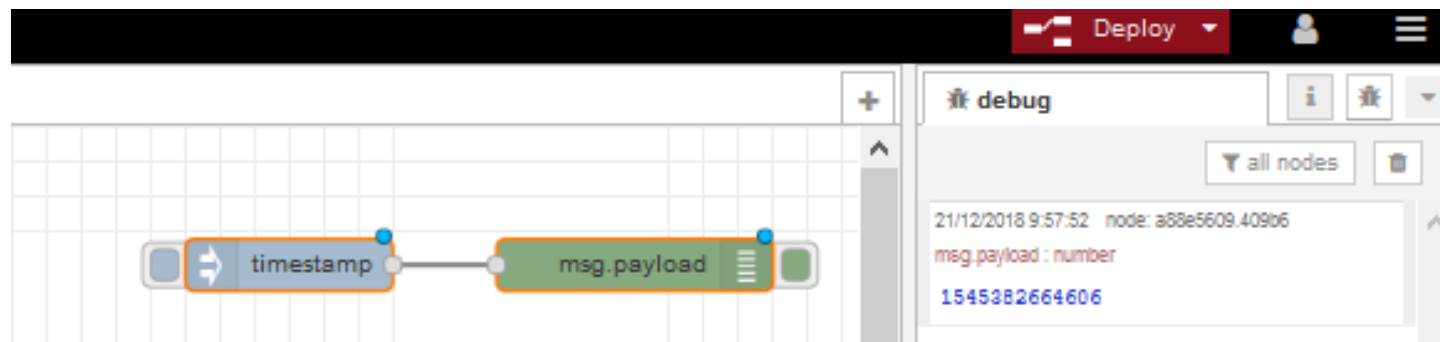
Cancel Add integration

IFTTT = If This Then That



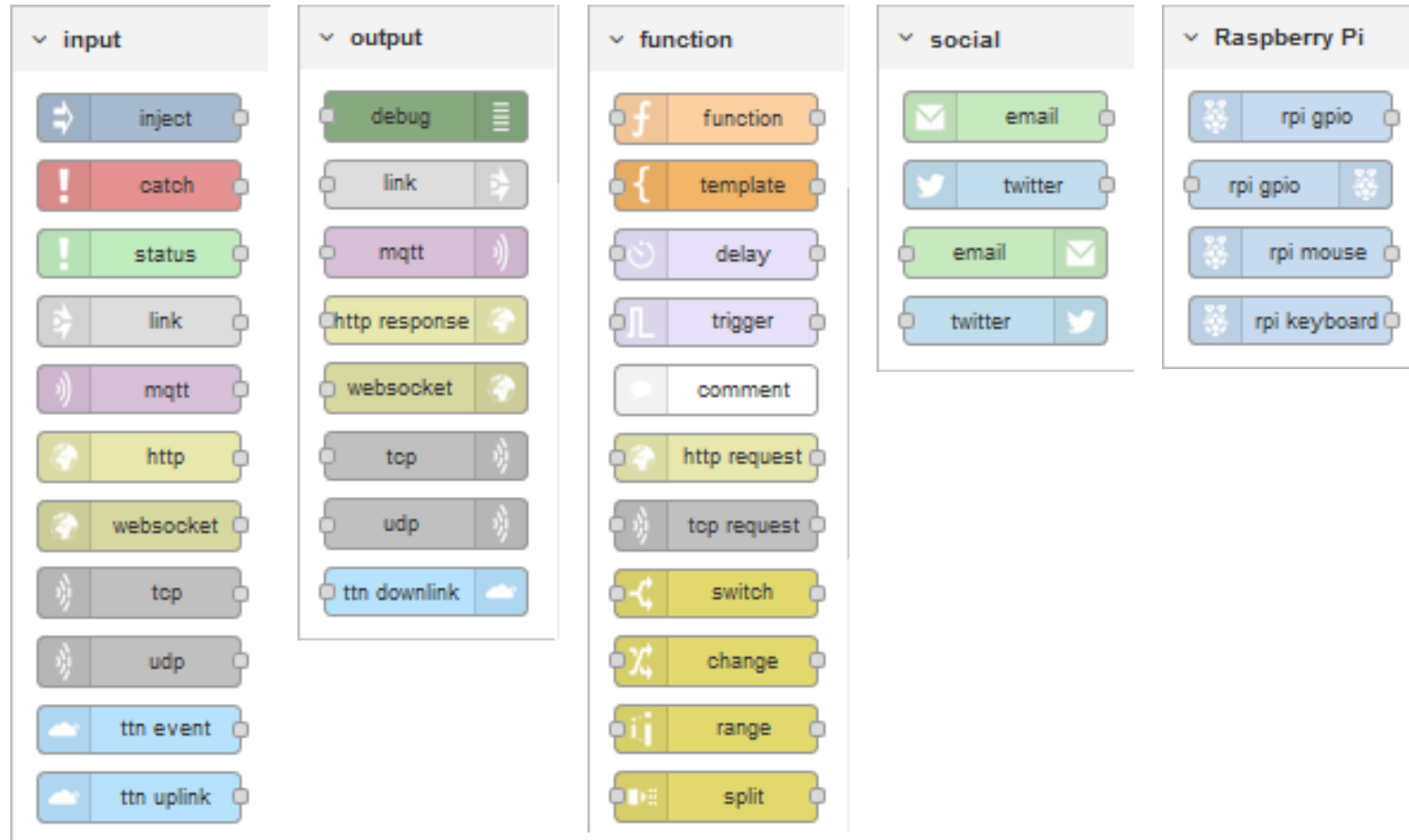
Node-RED

- Desarrollado por IBM en 2013 → Open Source
- Objetivo: Facilitar la construcción de sistemas IoT
- Programación visual basada en **nodos** y **flujos**
- Los nodos "consumen" y "produce" **mensajes**
- Un mensaje es un objeto JavaScript, que contiene al menos la propiedad **payload**
 - `msg={payload:"juanfe"};`
 - Adicionalmente, por defecto, todos los mensajes poseen las propiedades **topic** y **_msgid**



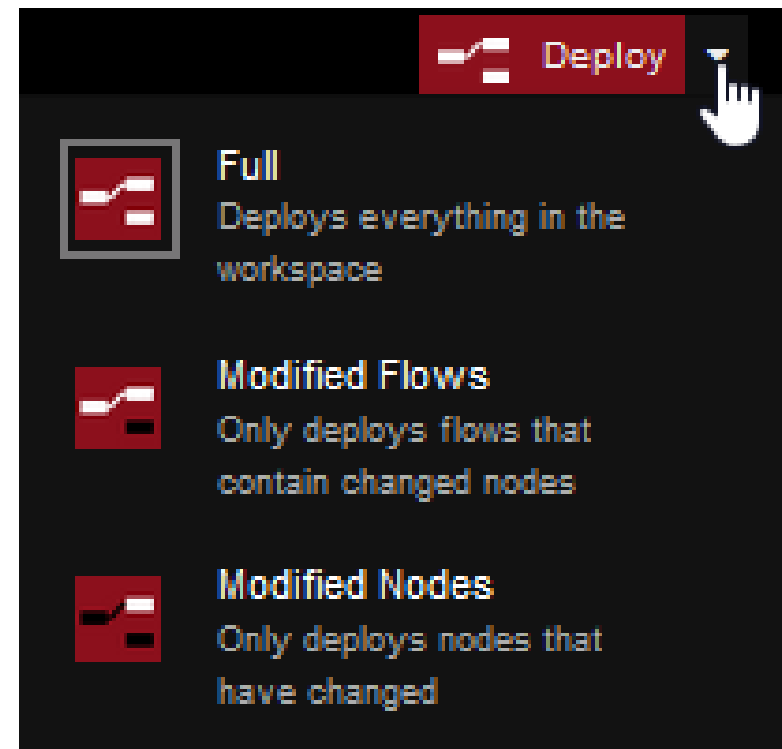
Node-RED: Tipos de nodos

- Entrada
- Salida
- Función
- Otros



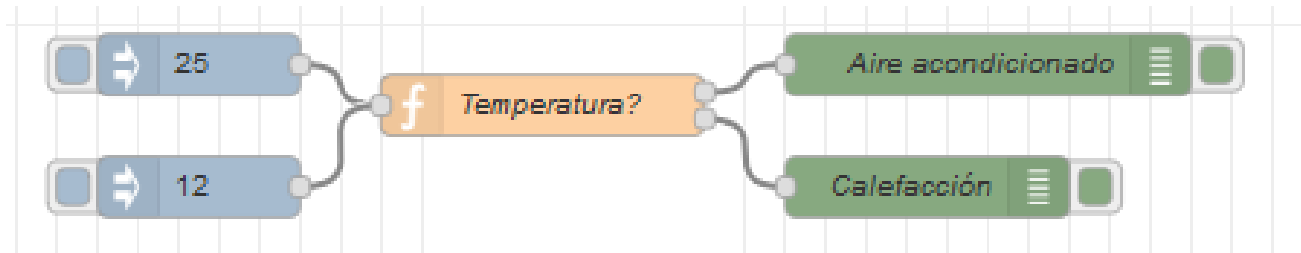
Node-RED: Nodos y deployment

- Deployment/Despliegue = Poner en funcionamiento



Node-RED: Ejemplo básico

- En función del valor recibido, redirigimos la ejecución hacia un nodo u otro



node properties

Name

Temperatura?

Function

```
1 if(msg.payload>22){
2   msg.payload="Hace calor";
3   return [msg,null];
4 }else{
5   msg.payload="Hace frío";
6   return [null,msg];
7 }
```


Node-RED: Fred

Browser address bar: <https://users.sensetecnic.com/register>

Comenzar a usar Firefox manual Lexia - Club C... londonappbrewery/Fl... How to Use Intention ...

STS Accounts | USER REGISTRATION

Username

jfmateos2

Password

.....

E-mail


jfmate...

Name

Juan

Company Name

MADR...



FRED Short
Free
50 node limit, 24 hour run time

SELECTED PLAN

☒

Node-RED: Fred

The image displays three overlapping screenshots of the Node-RED Fred interface, illustrating the process of managing and extending a Node-RED instance.

Left Screenshot: Shows the instance management page. The instance has been running for 1 m 20 s. The API Key is 8ddec13c346edd005021fb049e3e107c. The page includes sections for Tools (Add or Remove Nodes, marked with a red circle 1), Services (STS MQTT, STS InfluxDB), and a sidebar with categories (Protocols, Services, Storage, IoT) and a search bar. A red circle 2 highlights the 'Add or Remove Nodes' button.

Middle Screenshot: Shows the 'Add or Remove Nodes' dialog. The instance has been running for 2 m 48 s. The API Key is 8ddec13c346edd005021fb049e3e107c. The dialog lists various nodes and services, including 'If Itt' (A node-red node to connect to ifttt Maker Webhooks), 'Iot-virtual-device', 'Particle', 'Pubnub', and 'Ttn' (The Things Network Node-RED Application Nodes, marked with a red circle). The 'STOP INSTANCE' and 'CONSOLE' buttons are visible.

Right Screenshot: Shows the Node-RED flow editor. The flow includes nodes like 'Get market data (Google)', 'Format', 'save original headers', 'Parse indexes', 'Generate random number', and 'Twitter feed'. A red arrow points to the 'RESTART INSTANCE' button at the bottom right, which is highlighted by a red circle. A warning message at the bottom states: 'Your instance needs to be restarted in order for changes to your nodes to be applied'.

Node-RED: Fred

This screenshot shows the Node-RED interface for a 'FRED - Cloud Hosted Node-RED' instance. On the left, a sidebar displays instance statistics: 'Your instance has been running for 1 m 44 s', 'API Key: 8ddec13c346edd005021fb049e3e107c', 'Enable Public Dashboard' (PAID FEATURE), 'Node Count: 16/50', 'Running Time Limit: 24 hours', and 'Nodes Installed'. The main workspace shows a 'Sheet 1' with a 'ttn uplink' node. A dialog box titled 'Edit ttn uplink node > Add new ttn app config node' is open on the right, with 'Cancel' and 'Add' buttons. The 'Properties' section shows 'App ID' as 'jfmateos_orelse' and 'Access Key' as a masked string.

This screenshot shows the same Node-RED interface, but the instance has been running for '2 m 18 s' and 'Nodes Installed' is now '9'. The 'ttn uplink' node in the workspace now has a configuration icon. The dialog box is now titled 'Edit ttn uplink node' and includes a 'Delete' button. The 'Properties' section shows 'Name' as 'Ourense', 'App' as 'jfmateos_orelse', and empty fields for 'Device ID' and 'Field'. A red arrow points to the 'Done' button in the top right corner of the dialog.

Node-RED: Fred

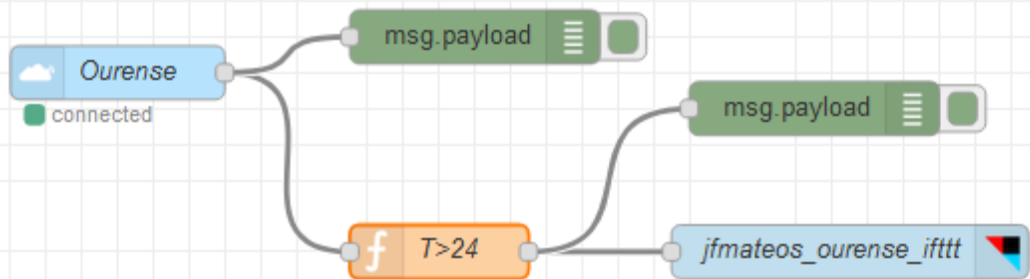
The image displays two screenshots of the Node-RED interface, specifically the 'Fred - Cloud Hosted Node-RED' instance.

Top Screenshot: The interface shows a flow named 'Flow 1' on 'Sheet 1'. The flow consists of two nodes: 'Ourense' (a blue node with a cloud icon) and 'msg.payload' (a green node with a list icon). A red circle highlights the 'Ourense' node. In the top right corner, a red arrow points to the 'Deploy' button, and another red circle highlights the 'debug' tab button.

Bottom Screenshot: The interface shows the same flow, but the 'msg.payload' node is now highlighted with a red dashed border. The 'debug' tab is active, displaying a log of messages. A red circle highlights the JSON payload of the message:

```
{  "analog_in_1": 2.88,  "barometric_pressure_3": 947.5,  "relative_humidity_4": 45.5,  "temperature_2": 22.9}
```

Node-RED: Fred



The screenshot shows the Node-RED interface. On the left, a palette of nodes is visible. In the center workspace, a flow is shown with a 'T>24' function node circled in red. A red arrow points from this node to the 'Edit function node' panel on the right.

Edit function node

Properties

Name: T>24

Function

```
1 if(msg.payload.temperature_2>24){
2   return {payload:{value1:msg.payload.temperature_2,
3     value2:msg.payload.barometric_pressure_3,
4     value3:msg.payload.relative_humidity_4}};
5 }
```

Outputs: 1

HTTP Integration

- Podemos utilizar RequestBin para analizar el formato que utiliza TTN

 RequestBin

<http://requestbin.fullcontact.com/>

http://requestbin.fullcontact.com
POST /12yoxgr1

</> application/json
556 bytes

14s ago
From 52.169.225.45,
70.132.20.159

FORM/POST PARAMETERS

None

HEADERS

Connection: close
Total-Route-Time: 0
X-Request-Id: 65e495b3-6e7f-479a-81ad-012b2ff6abee
Cloudfront-Viewer-Country: IE
Host: requestbin.fullcontact.com
Content-Type: application/json
Cloudfront-Forwarded-Proto: http
X-Amz-Cf-Id: WzdfnfGfp7_Lu6L3vYkaUH-QHJ6Zd-OIRZnZ5FSc9-qz4Afs-26M1A==
User-Agent: http-ttn/2.6.0
Cloudfront-Is-Tablet-Viewer: false
Cloudfront-Is-Mobile-Viewer: false
Via: 1.1 f781469e78b7a441c6f692b1629e1519.cloudfront.net (CloudFront), 1.1 vegur
Accept-Encoding: gzip
Connect-Time: 0
Cloudfront-Is-Smarttv-Viewer: false
Content-Length: 556
Op-Viewer: true

RAW BODY

```
ie": "2018-12-21T13:42:54.028105122Z"}, "downlink_url": "https://integrations.thethingsnetwork.org/ttn-eu/api/v2/down/jfmateos_taller_integraciones/jfmateos_http_integration?key=ttn-accour
```

downlink_url





YOU ARE THE NETWORK
LET'S BUILD THIS THING TOGETHER!

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