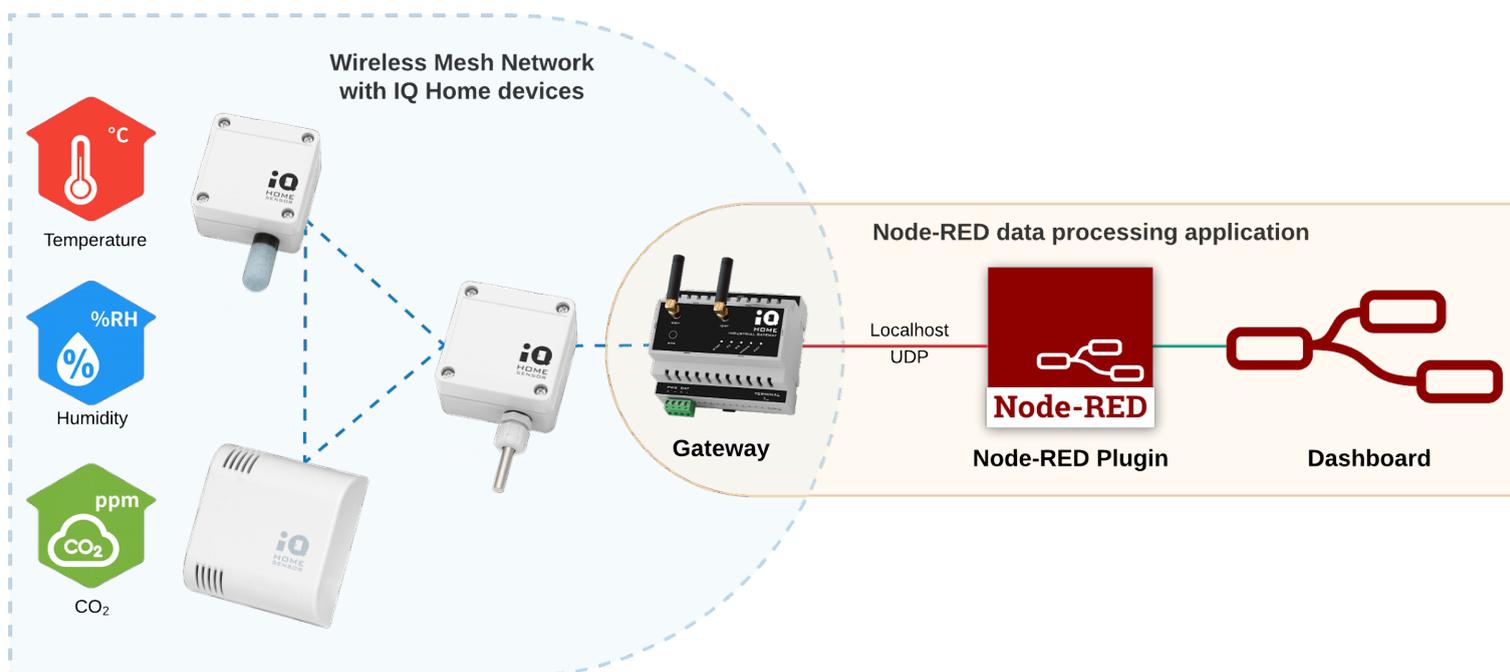


# Visualizing sensor data using Node-RED Dashboard



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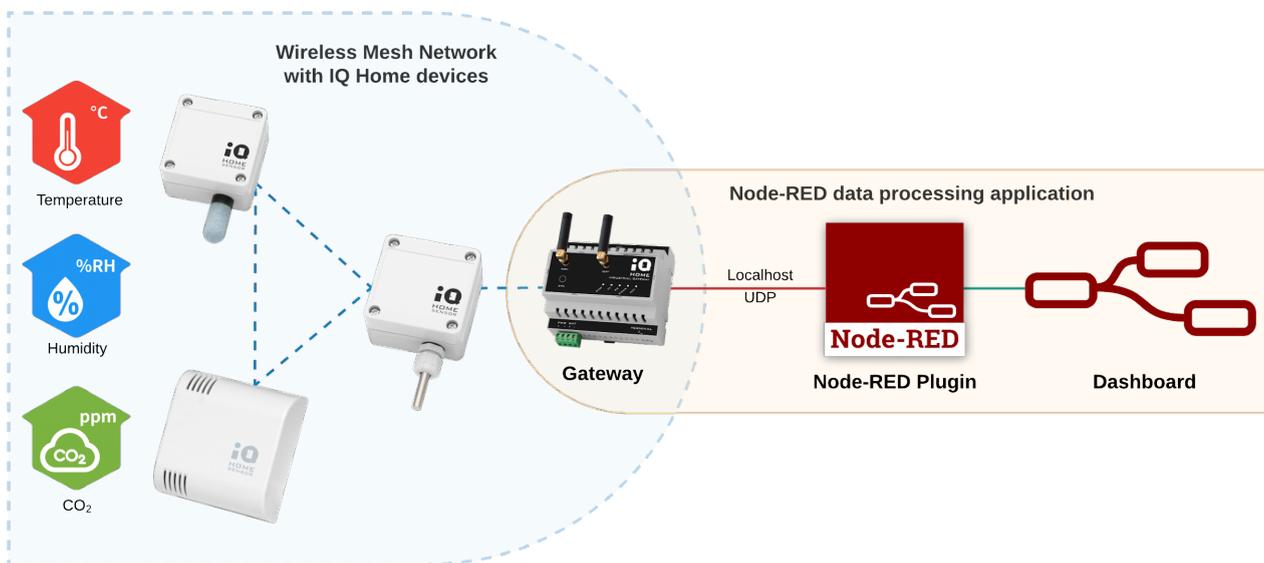
# 1 Overview

In this guide, you will learn about how to visualize periodically collected sensor data from your IQ Home sensor network using **Node-RED Dashboard** hosted on your Gateway.

The pre-installed Node-RED service and Dashboard plugin on the gateway will be used to create the web visualization.

What you need:

- [IQ Home Gateway](#)
- [IQ Home Sensor](#)



## 2 Enable the Application Interface

To collect sensor data with Node-RED, first, we need to enable the Application Interface feature on the gateway.

1. Connect to the Gateway using the “**Link It!**” Software
2. Go to the “**Settings**” tab
3. Enable “**Application Interface**” and set a “**Port Send**” value (e.g. 55000)

The screenshot shows the 'Gateway Settings' interface. The 'Settings' tab is active. The 'Application Interface' section is highlighted with a red box, showing the following configuration:

- Enable:
- Port listen: 55001
- Port send: 55000

The **Port Send** value selected here will be used in Node-RED.

Then enable the Node-RED scheduler for the sensors.

1. Open the “**RF Network**” tab
2. Switch to “**Sensor Data**”
3. Click on the clock icon in the top right corner labeled “**Create Scheduler**”
4. Enable the “**Node-RED**” Response option

**Scheduler Wizard**

Scheduler Settings

Measured values: Temperature, Relative Humidity, CO2

Energy efficient mode:

Active days:  Mon  Tue  Wed  Thu  Fri  Sat  Sun

Active hours: 9:00 - 16:59

Interval in active hours: 10 min

Interval in inactive hours: 60min

Response:  Modbus  Node-RED  SensNet  MQTT

CANCEL SAVE

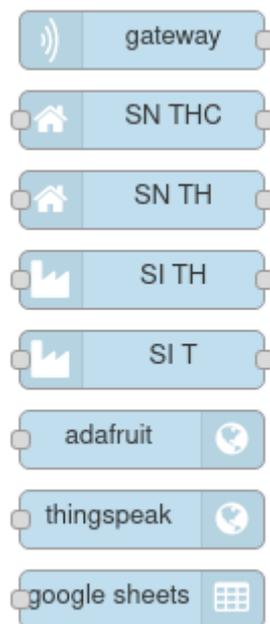
You can also set the time intervals between the sensor measurements.

### 3 Set up a Node-RED network to forward the sensor data

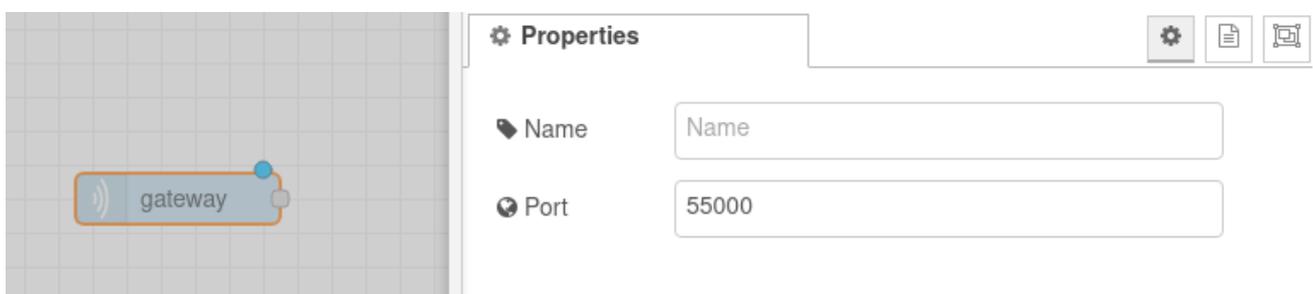
For this demo, we will be using a **Temperature Sensor** [SI-T-02/SC] and a **Temperature and Relative Humidity Sensor** [SN-TH-02].

1. Switch to the **Node-RED** tab in **LinkIt!**

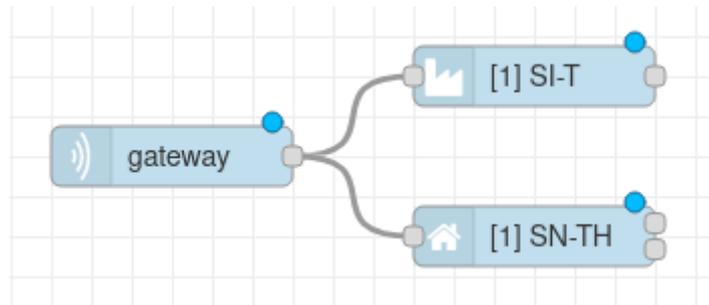
The **IQHome** nodes can be found in the bottom of the panel on the left side of your screen.



2. Add an iqhome **gateway** node. If you changed the used port in the first step, you can set it here by double-clicking on the node



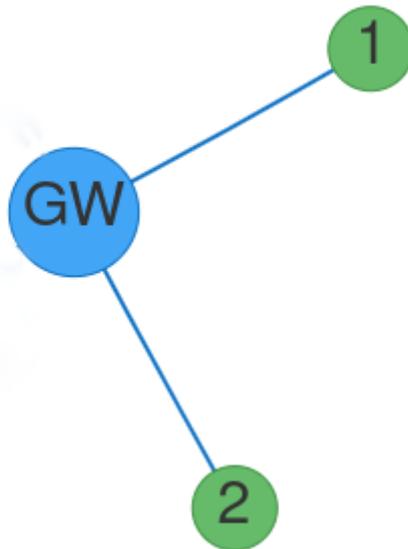
3. Add the sensor nodes corresponding to the sensors you are using in your IQHome network. In this example, we are using the **SI-T-02/SC** and **SN-TH-02** sensors, so we will add the **SI-T** and **SN-TH** nodes



4. Set the **device addresses** corresponding to your sensor's addresses as seen in the **LinkIt! RF Network** tab by double-clicking the sensor nodes. We are using the default topic (feed) names generated by the sensor nodes, so you can leave the boxes under "Topics" empty. If you used a different topic (feed) name on the Adafruit website, you have to write the same topic names here.

#### Note

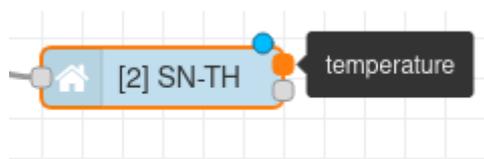
You can easily identify your sensors and their device addresses by using the "indicate" button in the right-click menu of the sensors under the **RF Network** tab in **LinkIt!** and finding the blinking LED on the sensor.



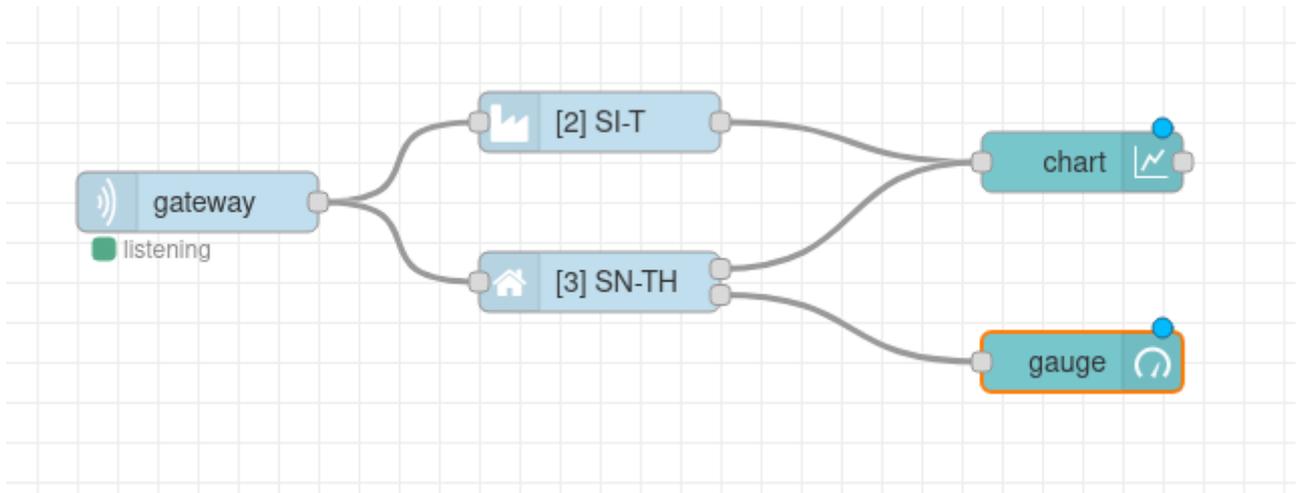
The screenshot shows the Node-RED interface. On the left, a 'gateway' node is connected to two sensor nodes: '[1] SI-T' and '[2] SN-TH'. The '[2] SN-TH' node is selected, and its properties panel is visible on the right. The properties panel includes:

- Properties**
- Name**: Name
- Address**: 2
- Topics**
- Temperature**: temperature-2
- Humidity**: humidity-2

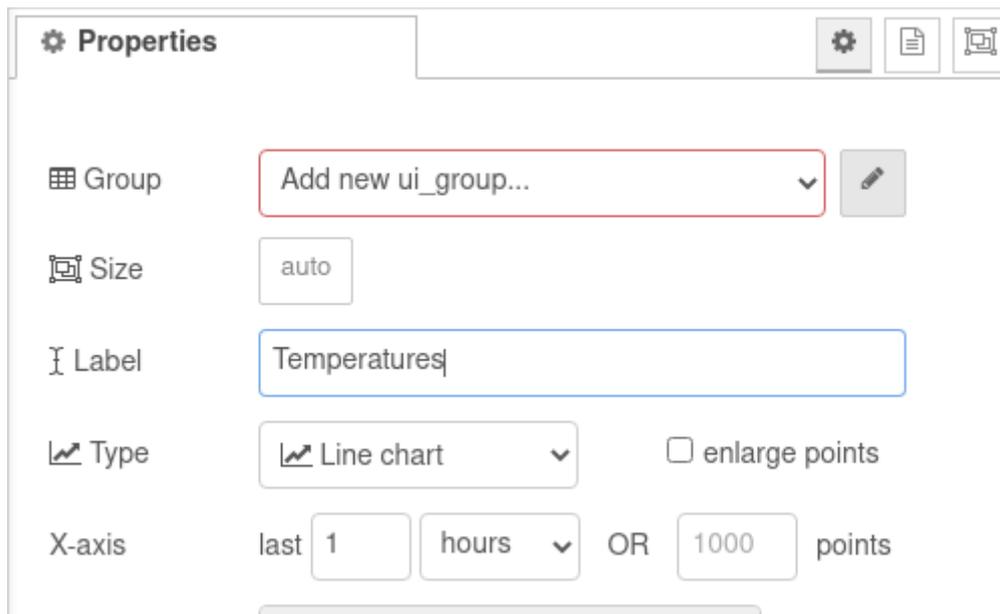
Each sensor node has outputs depending on what types of measurements can that sensor make.



- For this demo, we are going to create a line chart for the two temperature values and a gauge for the humidity. Add a **gauge** and a **chart** node and connect them to the corresponding sensor outputs.



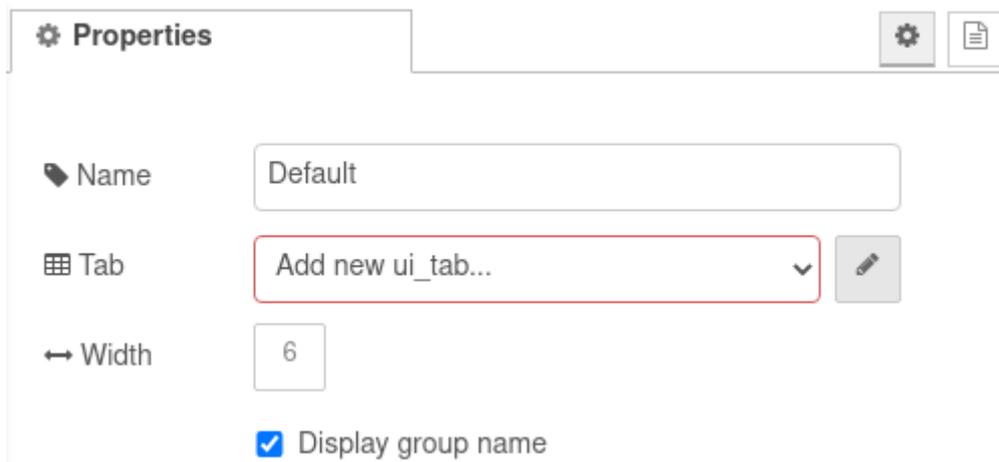
- Configure the **chart** node by double-clicking on it. Give a label to the chart, then click on the **pencil icon** next to **Add new ui\_group...**



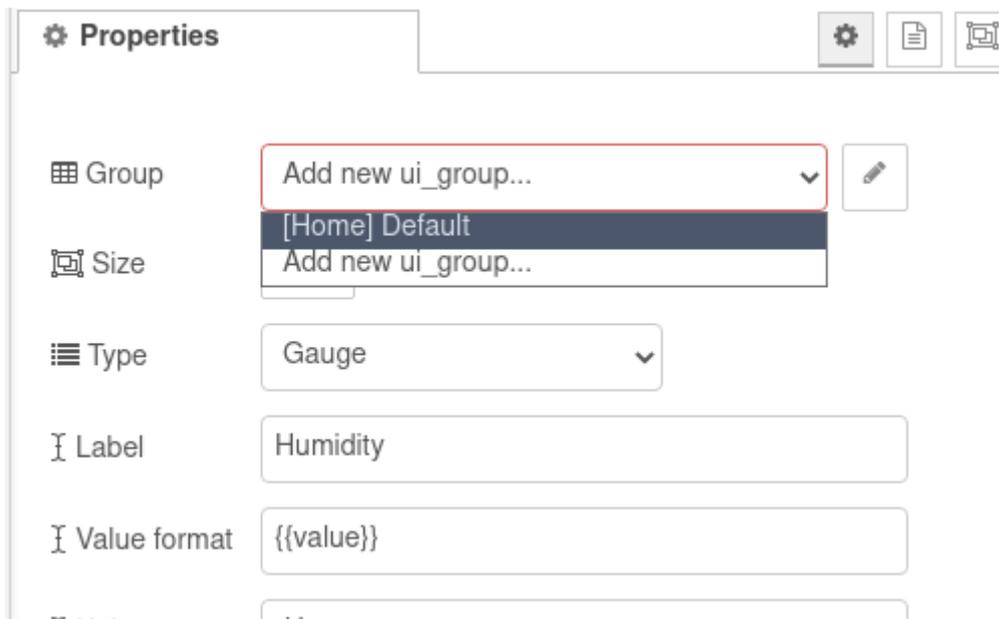
### Note

You can also customize the settings of the chart in this panel, but for now, the defaults are fine.

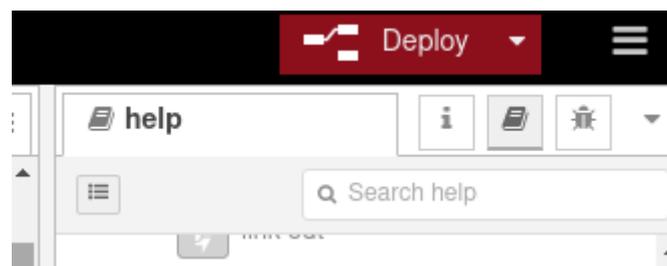
- Then click on the **pencil icon** next to **Add new ui\_tab...** and click the red **Add** button twice



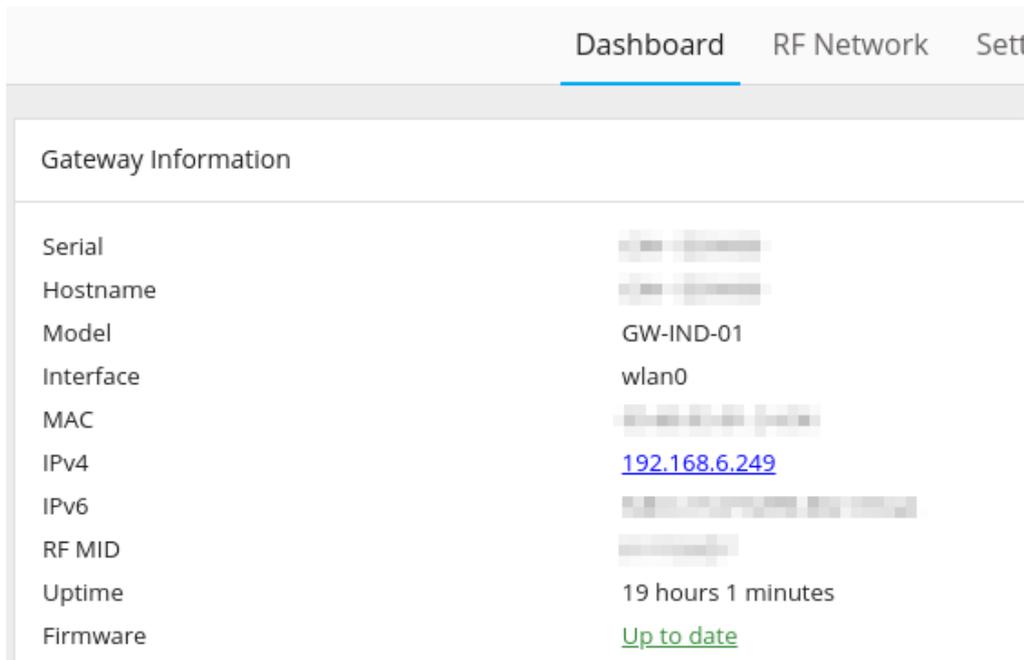
- Configure the **gauge** node by double-clicking on it. Select the **Group** created in the previous step, and give a **label** to the gauge.



- Deploy** your Node-RED network by clicking the **Deploy** button in the top right corner of your window



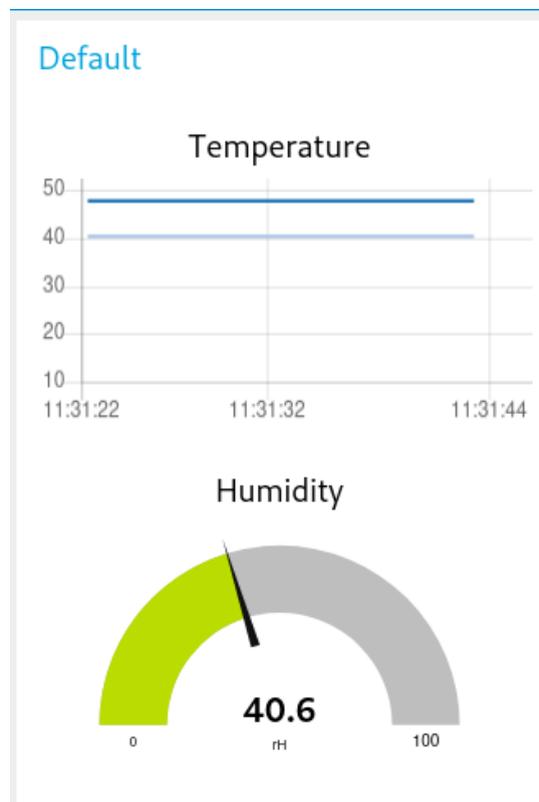
10. Open the **Node-RED Dashboard** by switching to the **Dashboard** tab in **LinkIt!**, and clicking on the link next to **IPv4**



The screenshot shows the Node-RED Dashboard interface. At the top, there are three tabs: "Dashboard" (selected), "RF Network", and "Settings". Below the tabs is a section titled "Gateway Information". This section contains a list of system details:

Property	Value
Serial	[Redacted]
Hostname	[Redacted]
Model	GW-IND-01
Interface	wlan0
MAC	[Redacted]
IPv4	<a href="#">192.168.6.249</a>
IPv6	[Redacted]
RF MID	[Redacted]
Uptime	19 hours 1 minutes
Firmware	<a href="#">Up to date</a>

If you turn on your IQHome gateway and sensors, you will see the incoming data in your Node-RED Dashboard:



## Acknowledgement

This content was created with the support of the Ministry of Foreign Affairs and Trade of Hungary.