

EDGE ANALYTICS FOR BROADCASTING NETWORK MONITORING SYSTEMS

Welcome to the guide for using our web app developed in collaboration with Motus ML. This document will help you understand how to navigate and use the main features of the webpage.

1. Access to the WebApp

Step 1: Opening the Browser

- Open the browser (Chrome, Firefox, Safari, etc.) on your computer or mobile device.

Step 2: Enter the Address

- In the address bar, type the web app URL: localhost:3050 (once a domain is purchased, replace it with the correct URL).
- Press "Enter" on your keyboard.

SIGN-IN

If you are an approved user, log in with the credentials provided to you:

Step 1: Enter Your Credentials

- Use the username and password provided to you.

Step 2: Click "Sign-in"

- Now you are ready to use the web app!

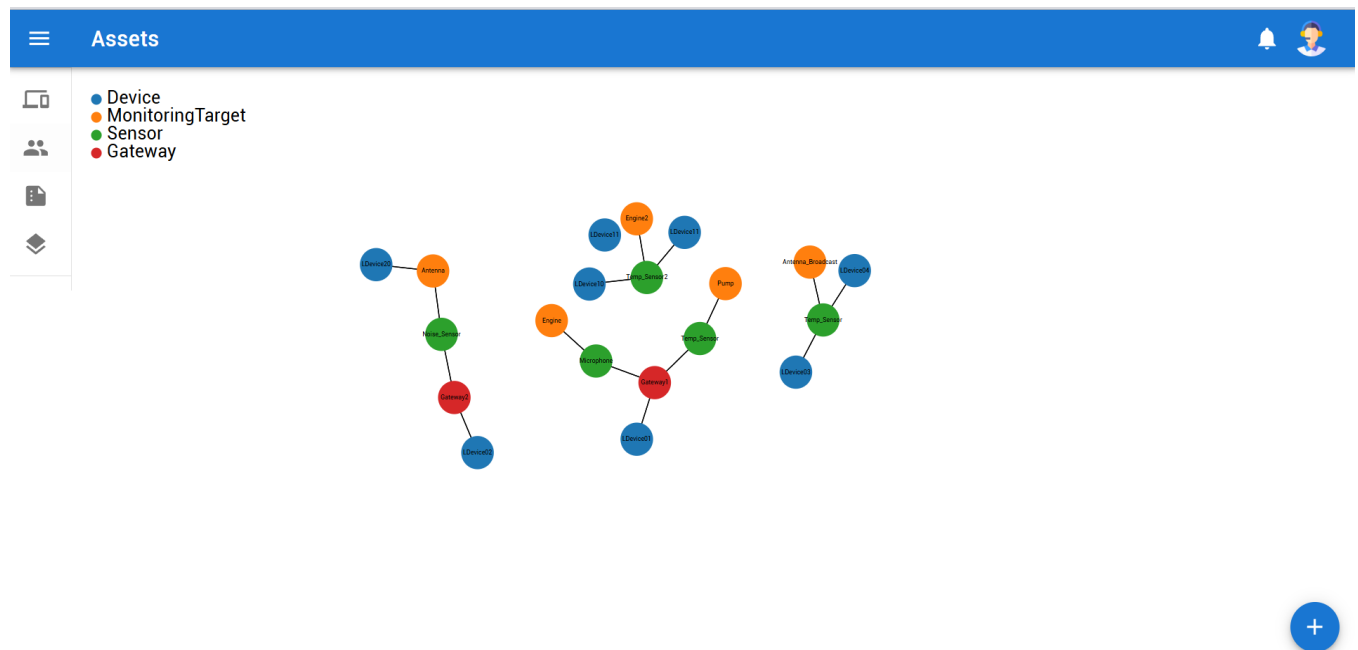
Navigation Menu

Once logged in, you will see a main menu at the top of the page. Here are the main sections:

1. **Dashboard:** Your home page with an overall overview.
2. **Profile:** Where you can view and edit your personal information.
3. **Settings:** To configure your web app preferences.
4. **Support:** If you need help, you can find contact information and FAQs here.

ASSET PAGE

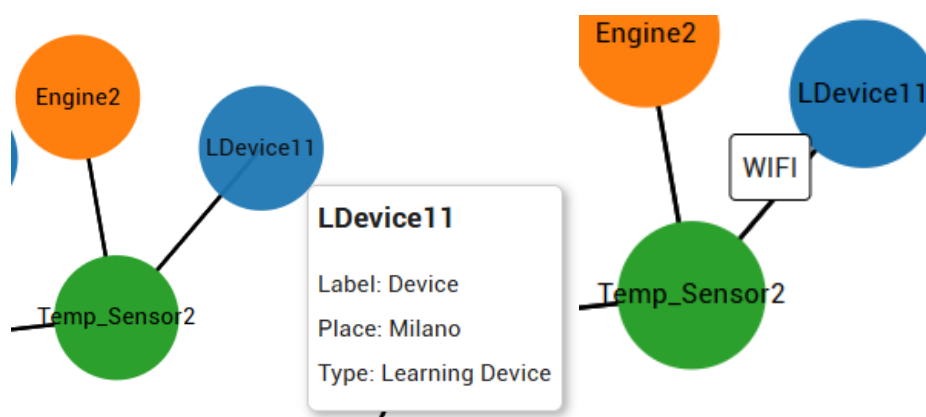
This page is dedicated to all the assets present in the system except for the devices that still need to be registered. It displays the entire network as a graph with a legend indicating the various types of assets, from which an overview of each individual cluster can be easily derived. The graph is easily manageable thanks to the zoom functionality (mouse wheel) and page movement (left-click and drag).



From this page, you can add new assets, excluding devices, to our network, which will then be displayed as nodes within the graph. This operation can be done by clicking the button identified by the "+" icon at the bottom left. Different types of assets can be added, viewable on the following screen:

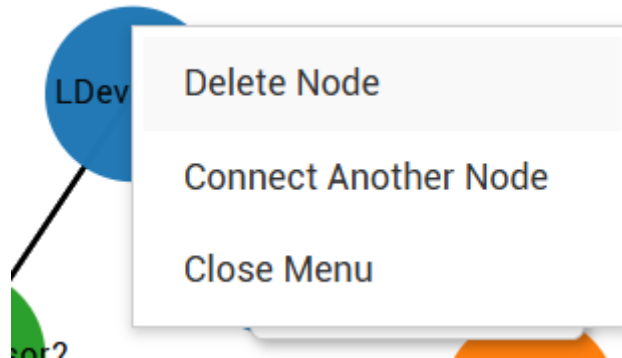
The 'Add New Asset' dialog box is shown. It has a title bar 'Add New Asset'. Below the title is a text input field for 'Name'. Below that is a dropdown menu currently showing 'Monitoring Target'. The dropdown list is open, showing the following options: 'Monitoring Target' (highlighted), 'Sensor', and 'Gateway'.

Hovering over a node or a connection between nodes provides additional data for each.



Right-clicking on a node or connection allows for additional actions. For nodes, these actions are:

- Delete the node
- Connect another node
- Close the menu



When you click "Delete node," if the node has connections, you will be notified that you can only do this for nodes without connections, and the operation will not be executed.

When you click "Connect another node," a message will appear: "Click on another node to link it with the selected node."

You can click on another node in the network to create a new connection. Once clicked, you will be asked to name the connection.

After entering the name, click "Ok," and the connection will be created and the graph refreshed. "Close menu" simply closes the choice menu displayed when you right-click on a node.

Right-clicking on a connection allows you to perform the following operations:

- Delete the connection
- Close the menu

Finally, double-clicking on a node opens the description page of the node: Device Details Page for devices and Asset Details Page for other nodes.

This page provides a general overview of all the devices in the system, both registered and unregistered.

The screenshot shows the 'Devices' page. The left sidebar has links for Devices, Technician, Reports, and Assets. The main content area is divided into three sections:

- Unregistered Devices:** A table with columns ID, Name, Status, Last Modified, and Register. It contains one row for device ID 1, Name LDevice20, Status (red dot), and a Register button with a blue plus icon.
- Statistics:** A box showing 'Registered devices: 6' and 'Unregistered devices: 1'.
- Added Devices:** A table with columns Name, registration Date, Status, Place, Type, and Details. It contains six rows of devices, all registered on 2024-05-30, with statuses 'working' or 'stand-by', Place 'Milano', Type 'Learning Device', and a 'Details' link with a blue arrow.

Unregistered Devices

When a new device is installed in a system monitored by us, it will notify our web app of its presence. The technician is responsible for registering the new device. In the Unregistered Devices section, there will be a list of all the new devices not yet registered.

REGISTRATION:

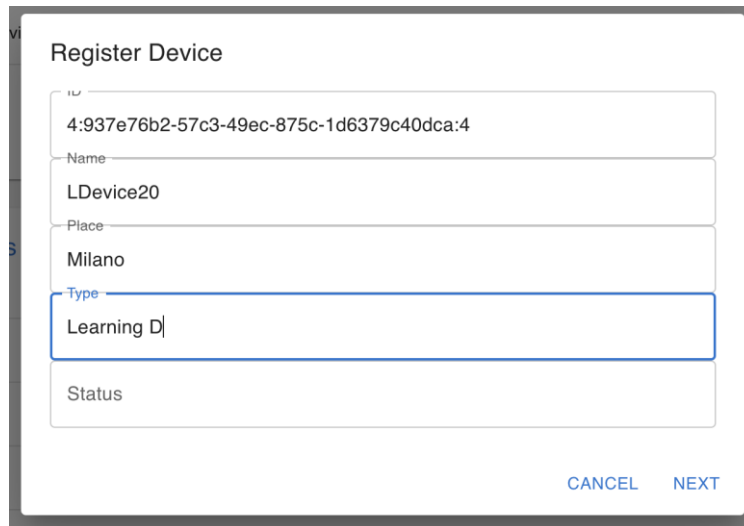
Step 1: Register a Device

- Click the "+" button in the Unregistered Devices section for the device you want to register.

This close-up highlights the registration button. A red circle and a red arrow point to the blue plus icon in the 'Register' column of the table row for device ID 1, Name LDevice20, Status red dot.

Step 2: Add Attributes

- Enter the attributes of the device and then click "NEXT."



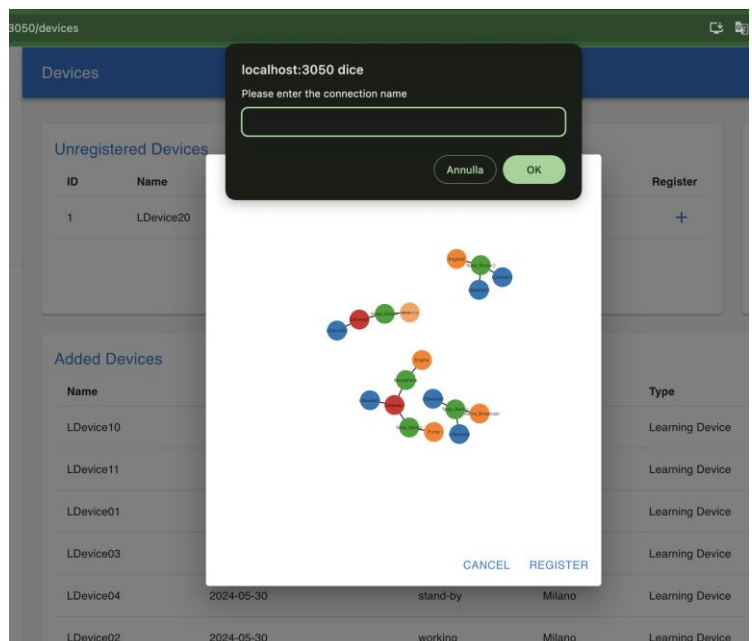
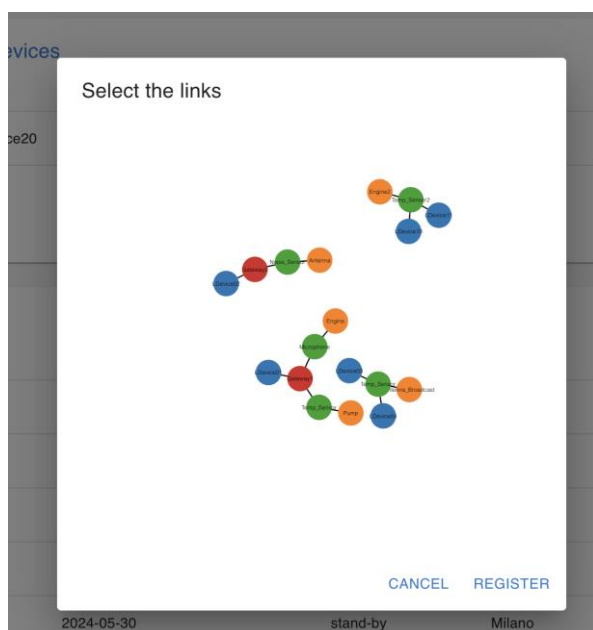
The "Register Device" form contains the following fields:

- ID: 4:937e76b2-57c3-49ec-875c-1d6379c40dca:4
- Name: LDevice20
- Place: Milano
- Type: Learning D|
- Status: (empty)

Buttons: CANCEL, NEXT

Step 3: Add Connections

- Select the node (circle) you want to connect the new device to and enter the name of the connection in the window that opens. Then click "Register."



Step 4: Device Registered

- The device will now be registered and will move to the "Added Device" section.

Added Devices					
Name	registration Date	Status	Place	Type	Details
LDevice20	2024-05-31	working	Milano	Learning Device	>

VIEWING DEVICE DETAILS:

Step 1:

- In the Added Devices section, click the Details arrow to see the specific details of a registered device.

Added Devices

Name	registration Date	Status	Place	Type	Details
LDevice10	2024-05-30	working	Milano	Learning Device	
LDevice20	2024-05-31	working	Milano	Learning Device	>

Step 2:

- Device Details Page

LDevice20

ADD DESCRIPTION

```
graph LR; LDevice02 --- Gateway2; Gateway2 --- Noise_Sensor; Noise_Sensor --- Antenna; Antenna --- LDevice20
```

Properties

Name	Value
pendingSend	false
pendingData	false
pendingRetrieve	false
name	LDevice20
registrationDate	2024-05-31
isRegistered	true
place	Milano
type	Learning Device

ADD PROPERTIES

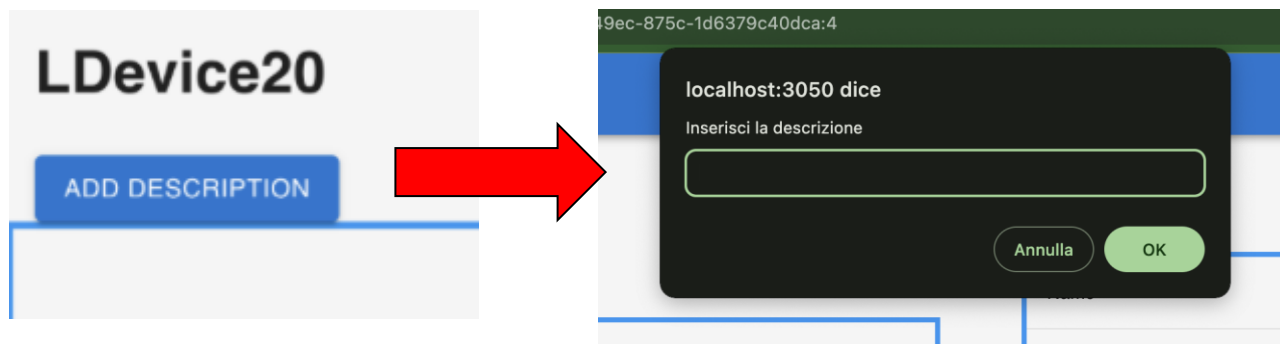
DEVICE DETAILS PAGE

Features of the Device Details page:

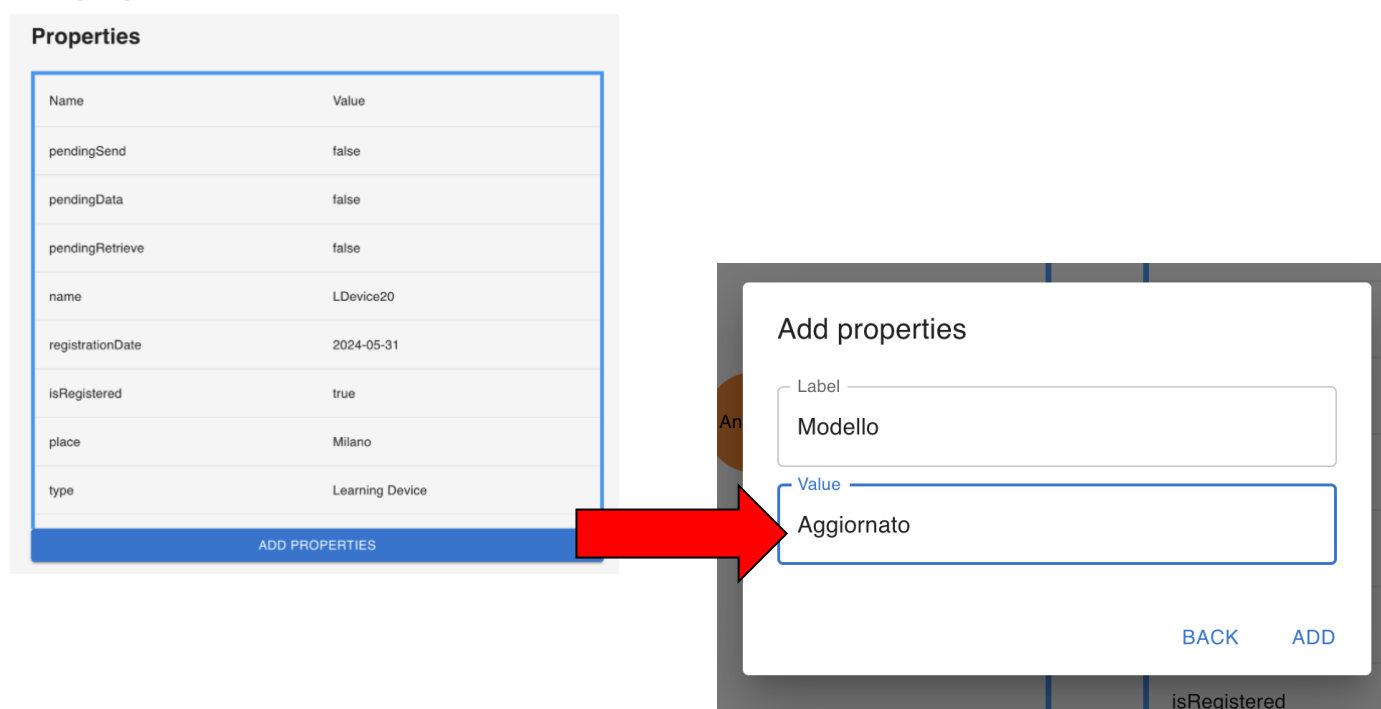
This page contains various functionalities:

- Add Description: To add a brief description of the device.
- Add Properties: To add custom properties to the device.
- Upload New Model: To upload a new ML model (.pkl format).
- Get Latest Version of Current Model
- Download a Model
- Request New Data

Add Description:

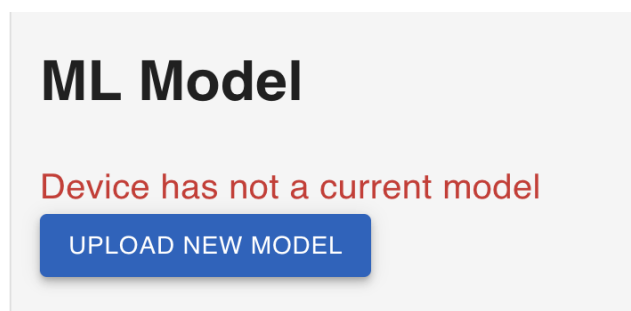



Add properties:



Upload New Model:

Clicking on Upload New Model allows you to upload the .pkl file directly from your computer to the device.



Nome	Dimensioni	Tipo	Data di aggiunta
 ai_model.pkl	12,3 MB	Documento	oggi, 09:35

The upload request will be managed by the system, which will contact the device remotely. The uploaded model will be visible in the pendingModel section, and once the device accepts it, the uploaded model will be visible in the current Model section.

ML Model

Device has not a current model

pendingModel: ai_model.pkl

The request to upload a new model to the device has been submitted but not yet accepted.

Requesting an Updated Version of the Current Model

Clicking the "Get Latest version of current model" button will send a request to the device to obtain an updated version of the current model. When the device responds, the updated model will be available in the table below, from which you can download the updated model by clicking the download button.

ML Model

currentModel: ai_model.pkl

GET LATEST VERSION OF CURRENT MODEL

UPLOAD NEW MODEL

ModelName	CreationDate	From	Download
ai_model.pkl	2024-05-31 07:36:22	User	DOWNLOAD

ai_model (1).pkl

104 B • Fine

View, Download, or Request New Data from the Device

This section allows you to view, download, or request data related to the performance and sensors associated with registered devices. For more details, refer to the "AVAILABLE ACTIONS" paragraph of the "Report Page" section of this document.

ASSET DETAILS PAGE

This is the description page of each asset and is practically the same as that related to devices, with the exception that operations executable only for devices (i.e., those regarding the model and data) are not possible. The only available actions are:

- **Add Description:** To add a brief description of the device.
- **Add Properties:** To add custom properties to the device.

Antenna_Broadcast

ADD DESCRIPTION

Properties

Name	Value
name	Antenna_Broadcast
isRegistered	
Place	Milano

ADD PROPERTIES

REPORT PAGE

Accessing this page allows you to view and download data related to the performance and sensors associated with registered devices. You can select the device whose data you want to view via the dropdown menu.

Device Data Reports

None

None

LDevice11

LDevice10

LDevice20

LDevice11

LDevice01

LDevice03

LDevice04

LDevice02

AVAILABLE ACTIONS:

- **View Data**

- **Request New Data**
- **Download Data**

VIEW DATA:

If the device has previously sent data to the server, it will be possible to view the data related to the device. To do this, first select the measurement (*) you are interested in.

(*) A device during its use may manage or have managed more than one single measurement related to one or more different monitoring targets.

By default, the time range for viewing time series corresponds to the last 30 minutes of available recording. Use the time range controls to change the observation period: the “From” table sets the start of the viewing period, and the “To” table sets the end. (1) Select “OK” to confirm the considered start/end time, and (2) press “ENTER” to confirm the change in the time range to be displayed.

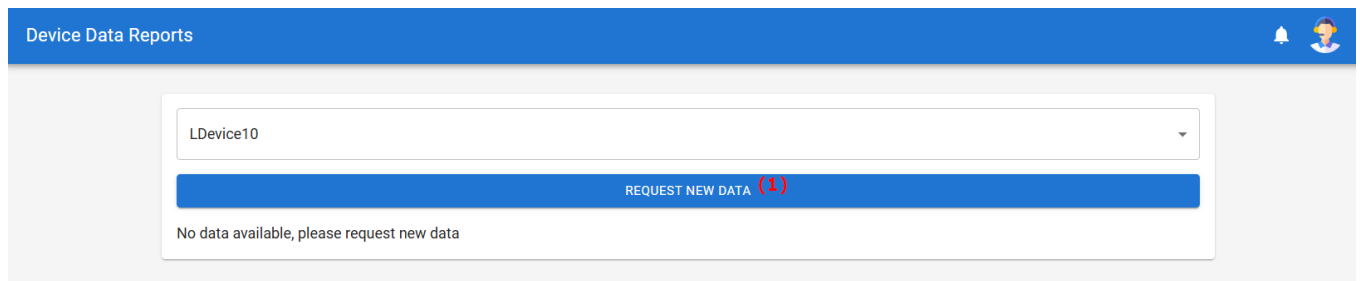


Data is displayed in dashboards, each relating to a single time series. The latter is reported as the title of the dashboard. The dashboards are automatically grouped and shown by sections corresponding to the buckets (*) of the data sent by the device. It is possible to change the time ranges for each individual section.

(*) Each device can send data to the server grouped by different buckets. This way, it is possible to highlight the different nature/category of the collected data. For example, the same device involved in a certain measurement could over time collect data related to the performance of its model and raw data originating from the sensors on which the device is training the same model. The name of the section corresponds to the bucket name of the time series.

REQUEST NEW DATA:

(1) If there is no data available for the selected device or (2) if you still want to request new updated data, you can request it by pressing the “REQUEST NEW DATA” button.

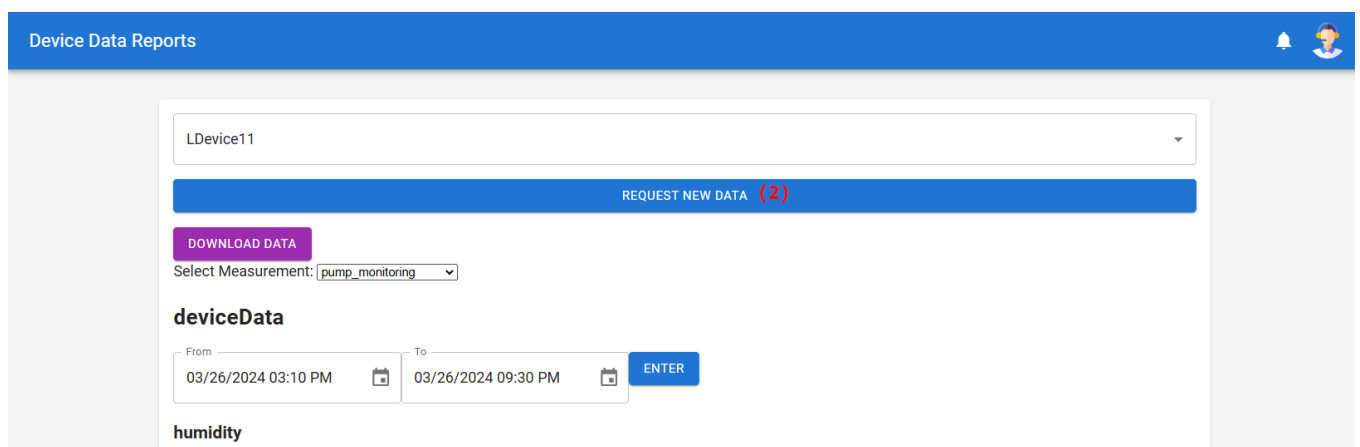


Device Data Reports

LDevice10

REQUEST NEW DATA (1)

No data available, please request new data



Device Data Reports

LDevice11

REQUEST NEW DATA (2)

DOWNLOAD DATA

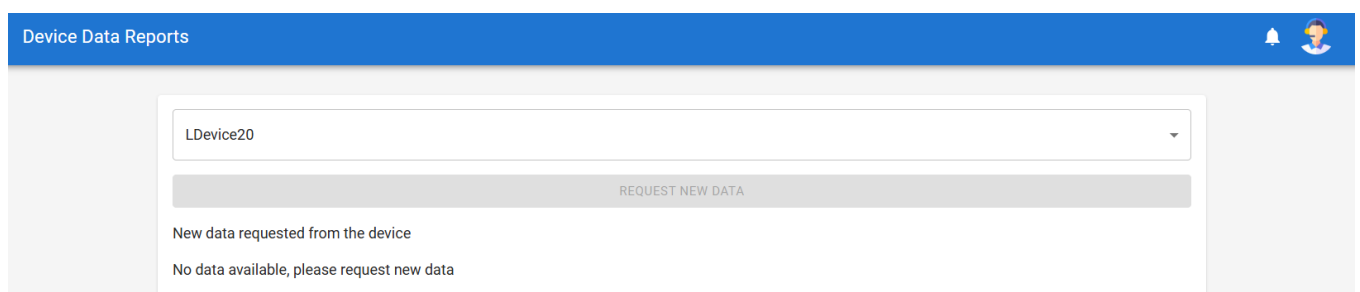
Select Measurement: pump_monitoring

deviceData

From: 03/26/2024 03:10 PM To: 03/26/2024 09:30 PM ENTER

humidity

The request is then sent to the device and will be fulfilled as soon as possible according to the device’s reception availability. Until the request is fulfilled, the following message is displayed for information purposes.



Device Data Reports

LDevice20

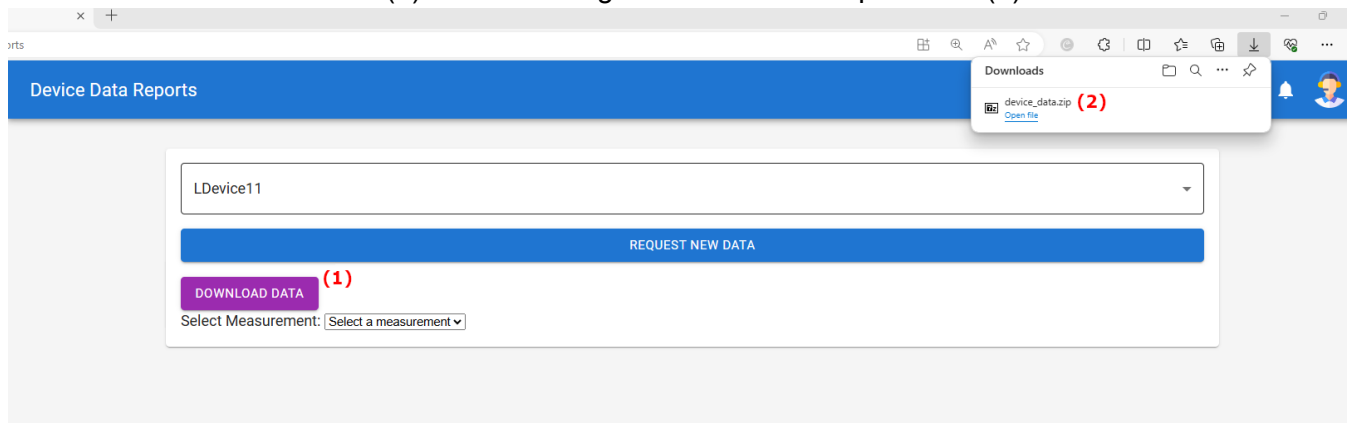
REQUEST NEW DATA

New data requested from the device

No data available, please request new data

DOWNLOAD DATA:

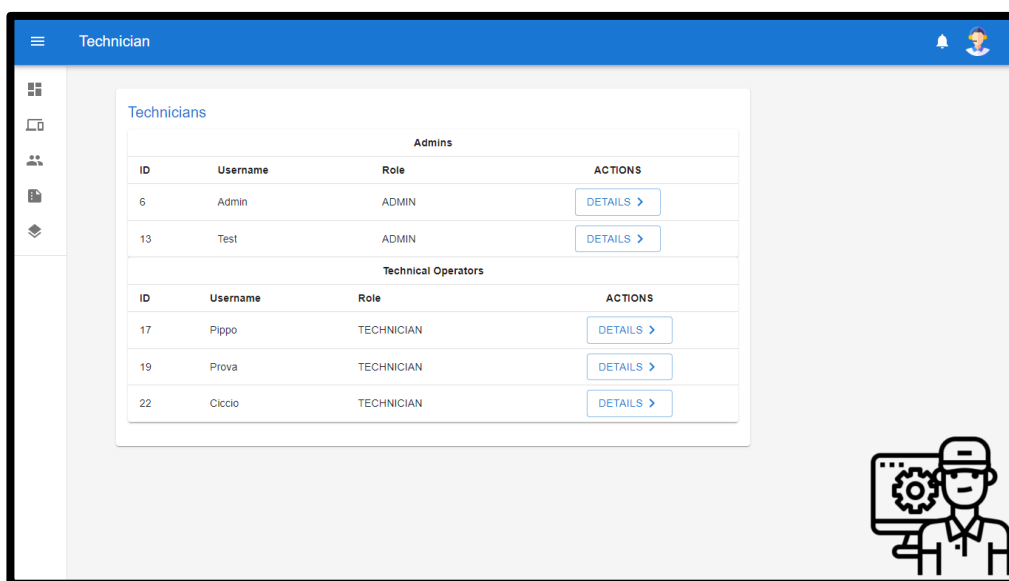
You can download all the data regarding a specific device in a single operation by pressing the “DOWNLOAD DATA” button (1) and extracting the downloaded zip archive (2).



The archive will contain one or more files in .line format, each representing the set of data points of the time series belonging to a single bucket in line protocol format.

TECHNICIAN PAGE

TECHNICIAN VIEW

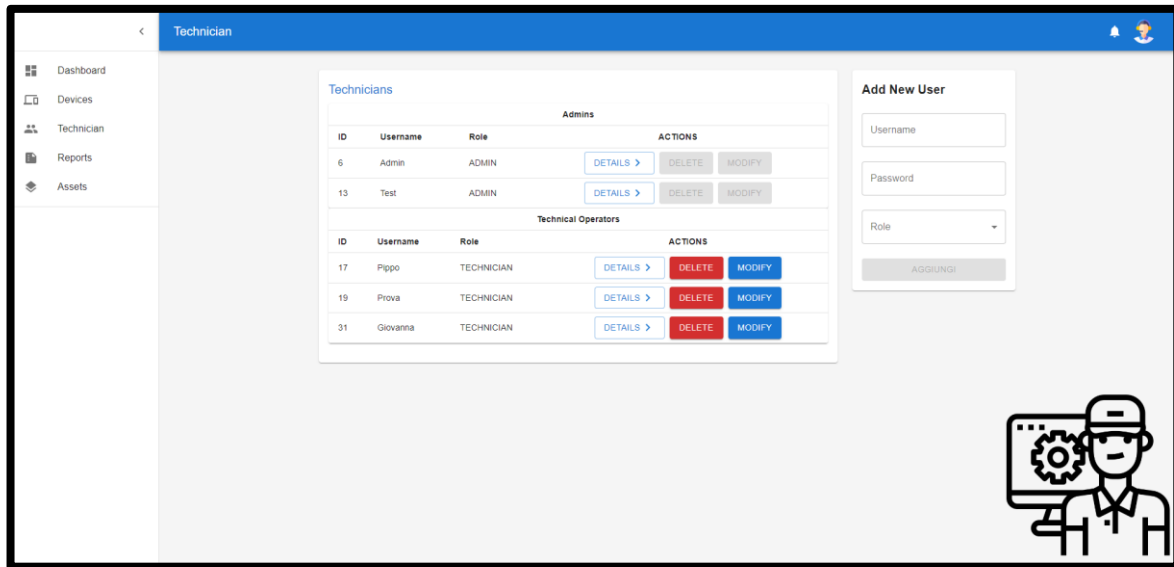


- The “Details” button opens a “Details on the operator/administrator” window.



- No other actions can be performed in the role of a simple “Technician” other than consulting the details.

ADMINISTRATION VIEW



- Form “ADD NEW USER”

Allows you to enter a new “username,” the associated “password” (automatically hashed), and the “role” to be assigned to the new user. The “Add new User” button is enabled only if all fields are correctly filled out.

- “DELETE” button

Allows you to delete a user with the “Technician” role. It is not possible to delete a Web App Administrator; this must be done directly on the DB (therefore only those with maximum Web App Management permissions can do this).

- “Details” button

Add New User

Technician Details

Username: Pippo
Role: TECHNICIAN

Modify Technician Role

Username: Pippo

Role:

ADMIN

TECHNICIAN

Works similarly to the one displayed by technicians but with the addition that they can also modify user roles (again, Administrators cannot be modified, only technical operators).

- **“Modify” Button**

Takes the user directly to the role modification window without needing to go through the technician details page.

Modify Technician Role

Username: Pippo

Role:

[CONFIRM](#) [CANCEL](#)