webdyn
Flexitron group

Application note 2

How to pair sensors using the WebdynEasy web interface

www.webdyn.com

How to pair sensors using the WebdynEasy web interface

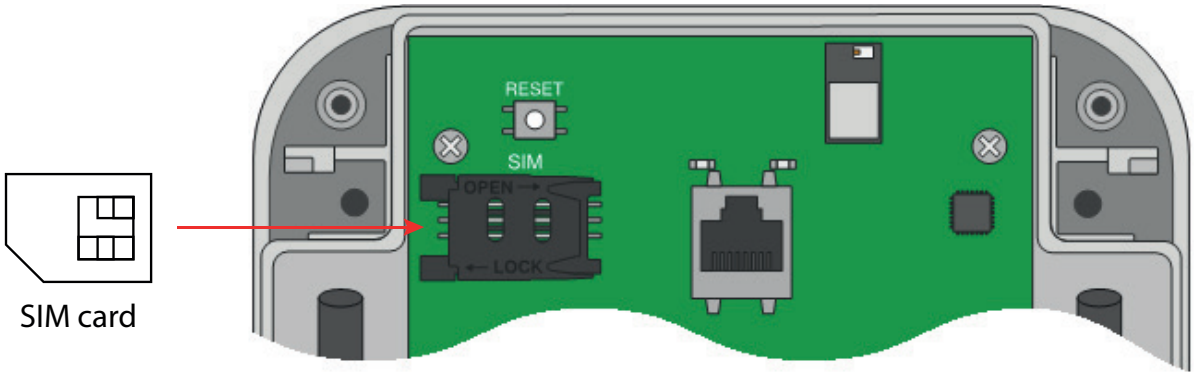
1. Introduction

This application note describes how to configure and set up the WebdynEasy LoRaWAN product if the internal LoRAWAN server is used. The purpose is to explain how to quickly pair the LoRaWAN sensors that you want to attach to the concentrator using its embedded web interface.

2. Getting started

LoRaWAN webdynEasy can upload data either using Ethernet or a Modem.

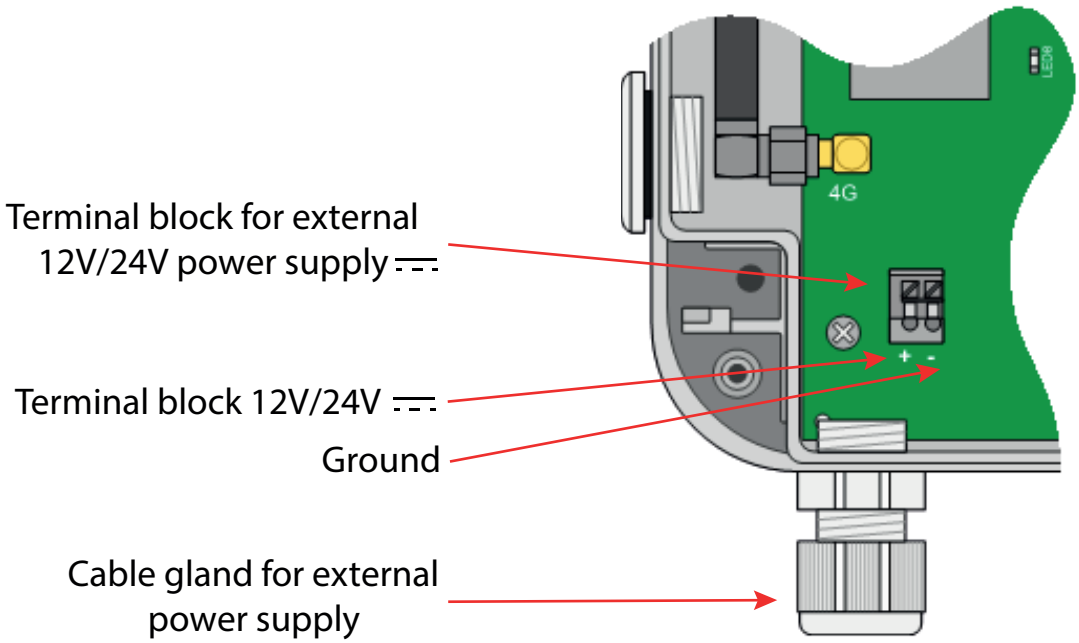
- By Modem: Insert a SIM card into the product. SIM card detection only occurs at start-up. (see SIM card installation in the user manual).



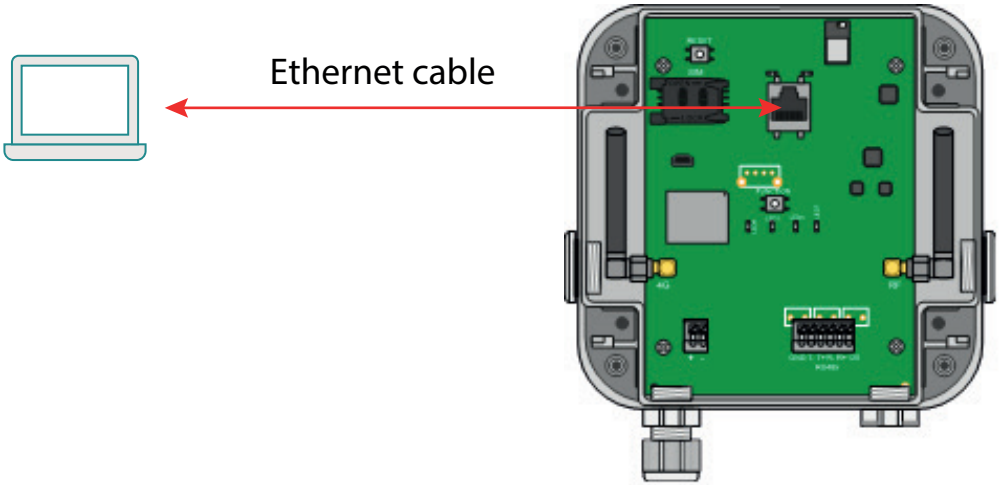
- By Ethernet: Connect the product to the network and configure it with an IP address in the same IP address range, and in the same subnet as the existing network. (see Ethernet configuration in the manual).

Starting up the WebdynEasy LoRaWAN:

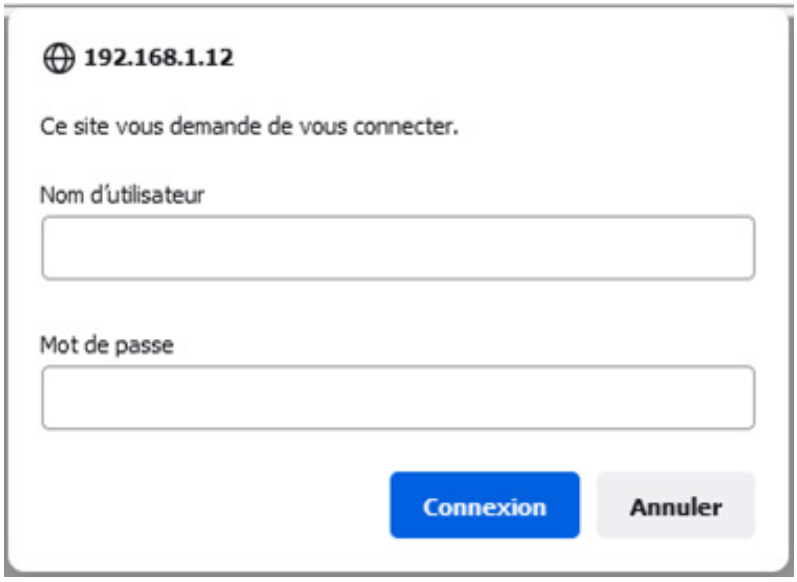
- Connect the 12-24V/0.5A power supply to terminal block J11 located at the bottom left of the board.



- Connect the concentrator to the computer using an Ethernet cable.



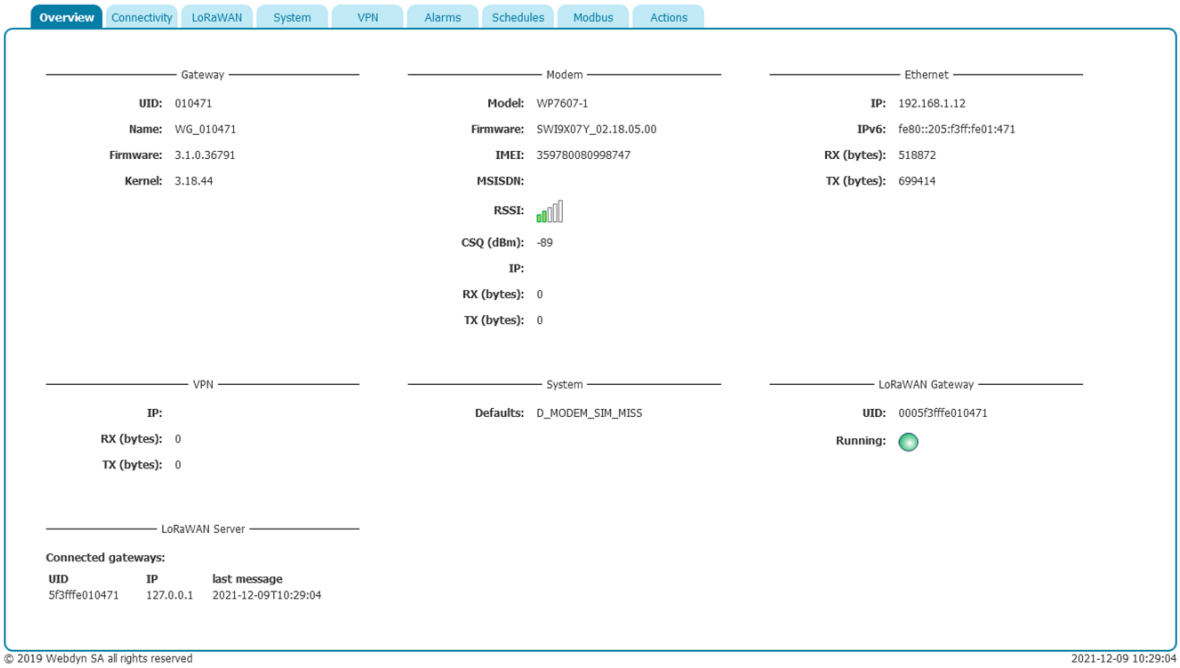
- Wait for the product to start up. Wait for the CPU LED (LED1) to flash.
- Access the concentrator's embedded web interface and follow the steps below:
  - Launch the web browser. The web interface is compatible with the latest browser versions: Firefox, Chrome and Edge.
  - Enter the concentrator IP address in your web browser (the default address is: http://192.168.1.12) to access the WebdynEasy LoRaWAN home page.
  - An identification window should be displayed:



  - Enter the login and password:

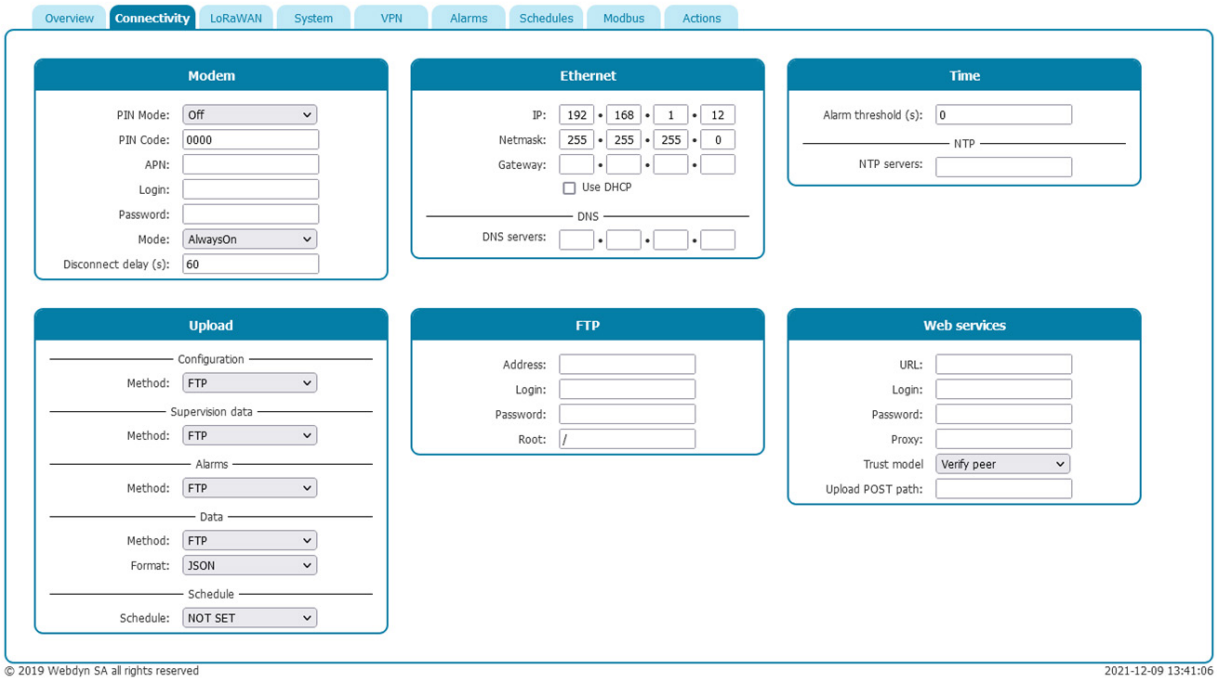
Login	Password
admin	high

- The “Overview” page is displayed:



3. Minimum configuration

For a basic configuration, go to the "Connectivity" tab.



Modem operation:

- Enter the card's PIN code and activate PIN mode if the SIM card's SIM code is activated.
- Enter the operator's APN and login and password if required.

Ethernet operation:

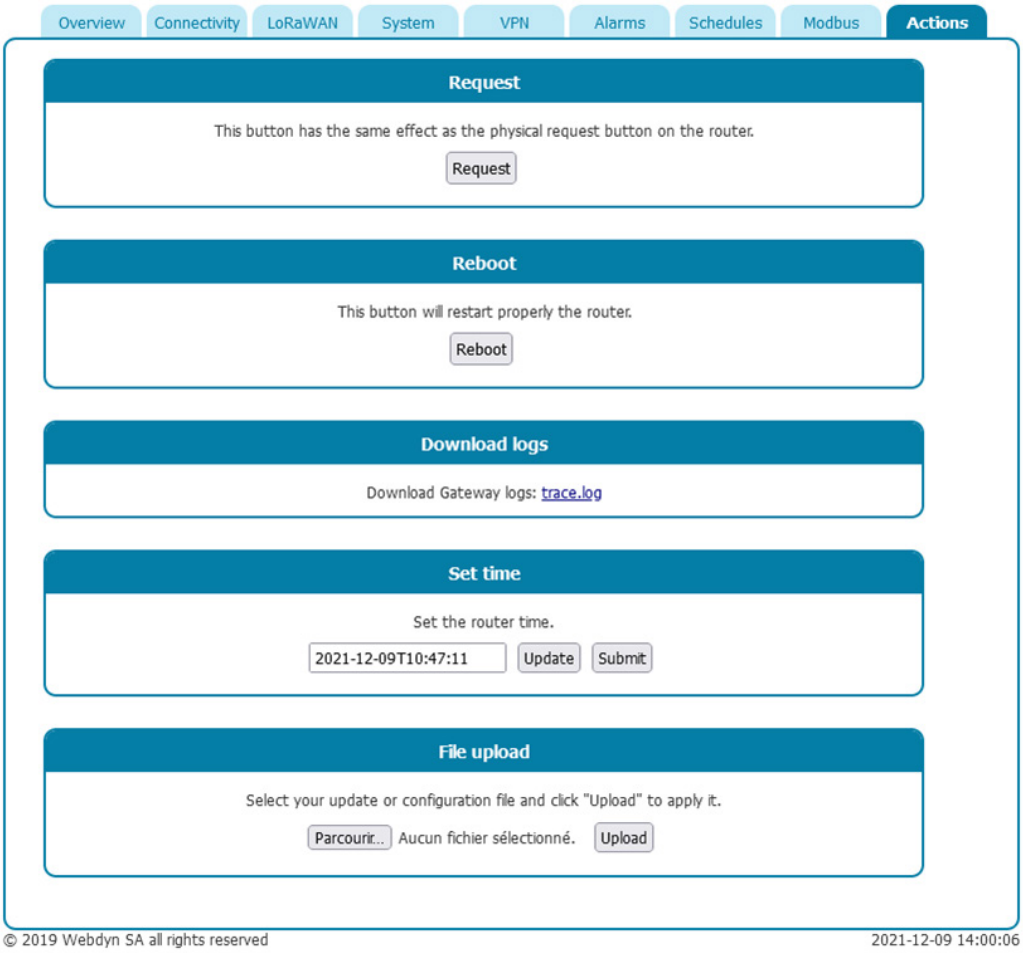
- Enter the IP address, subnet mask and gateway IP for the WebdynEasy LoRaWAN concentrator compatible with your network.
- Enter the DNS server IP.

FTP configuration:

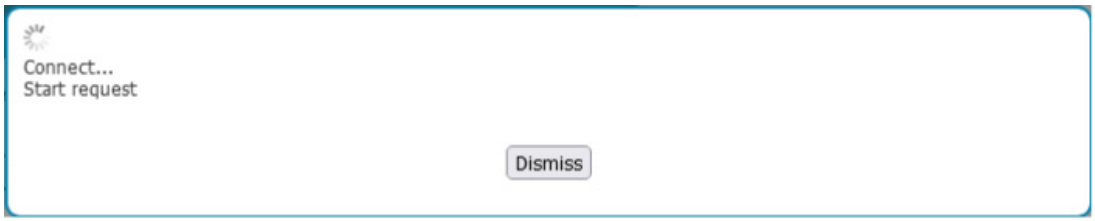
- Enter the FTP server IP.
- Enter the FTP server login and password.
- If necessary, choose an FTP root directory. The directory must contain the following directories:
    - ALARM
    - CONFIG
    - DATA

- INBOX
- SUPERVISION

- Go to the "Actions" tab.



- Test the connection to the server using the "Request" button.



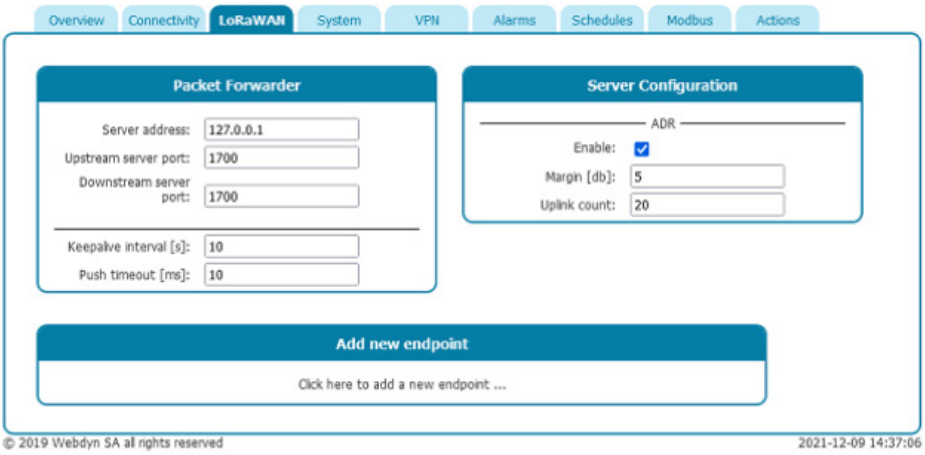
4. Internal LoRaWAN server configuration

By default, the webdynEasy LoRaWAN is configured in internal server mode.

The built-in LoRaWAN server manages the LoRaWAN sensors as a private network. It includes all the LoRaWAN V1.0.2 network functions (gateway, LoRaWAN server and application server). All received data is stored in files and all available data is uploaded each time there is a connection to the remote server.

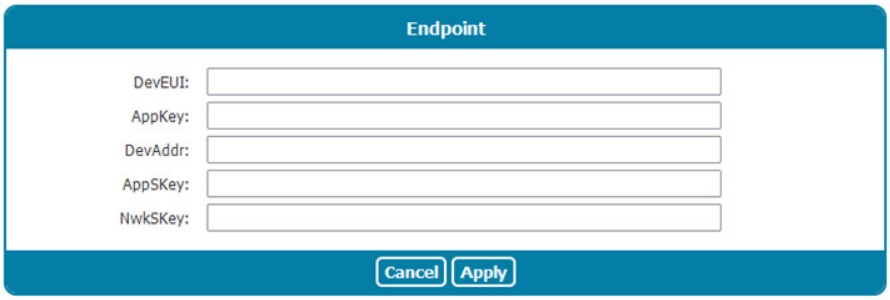
5. Sensor pairing

- Go to the "LoRaWAN" tab:

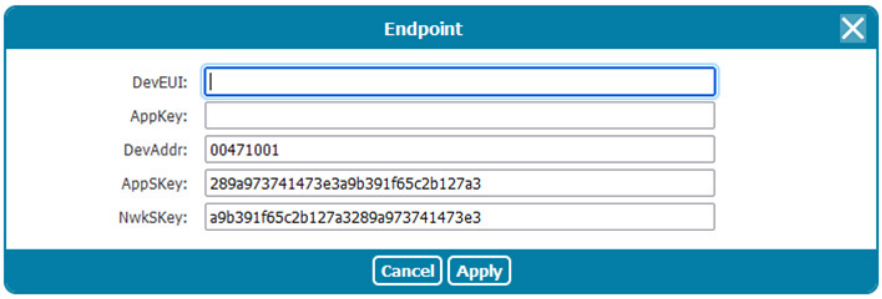


The internal LoRaWAN server only supports class A and the 2 following activation modes: ABP (Activation By Personalization); OTAA (Over The Air Activation).

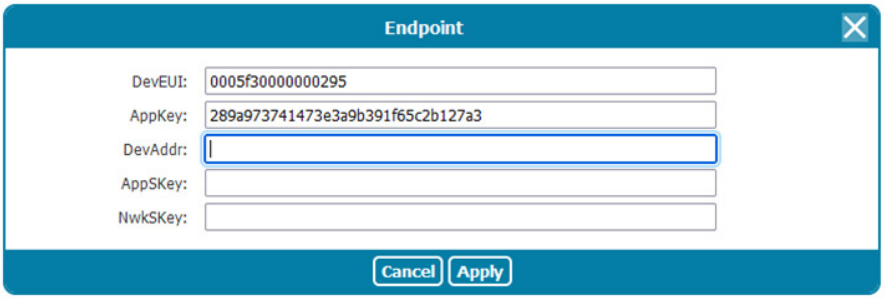
- Click "Add new endpoint" to add a sensor to the concentrator:



- If the sensor is in ABP mode, enter the DevAddr, NwkSKey and AppSKey parameters:



- If the sensor is in OTAA mode, enter the DevEUI and AppKey parameters:



- Confirm the addition of the sensor by clicking "Apply".

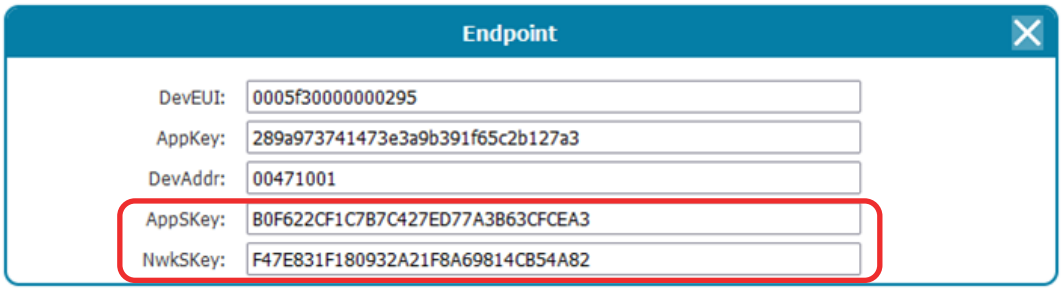
- Repeat the operation as many times as the number of sensors to be paired with the concentrator.

The sensor parameters are provided by the sensor manufacturer.

6. Sensor operation

Start the LoRaWAN sensor. (see sensor user manual)

If the sensor is in OTAA mode, the AppSKey and NwkSKey keys are generated and saved at JOIN time. It is possible to check the sensor pairing to the concentrator by checking the presence of the AppSKey and NwkSKey on the web interface.



It is also possible to force data files to be uploaded to the server to check that the sensors are in working order.

- Go to the "Actions" tab.

- Start the connection to the server using the "Request" button.

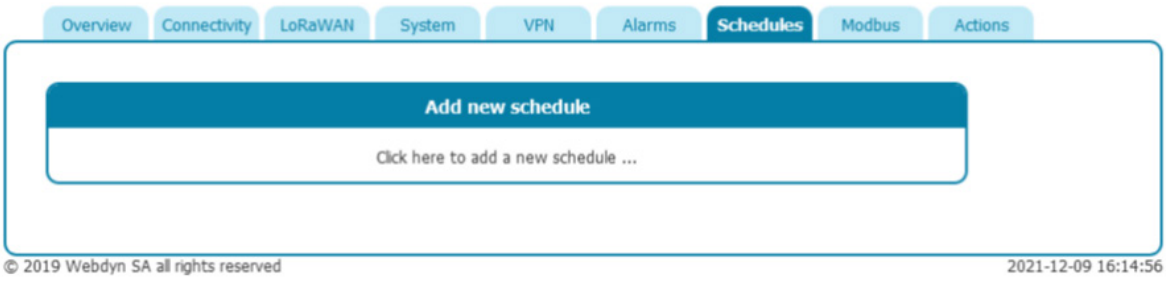
- Go to the FTP server and check the data in the file in the FTP server DATA directory.

  Example of a JSON data file:

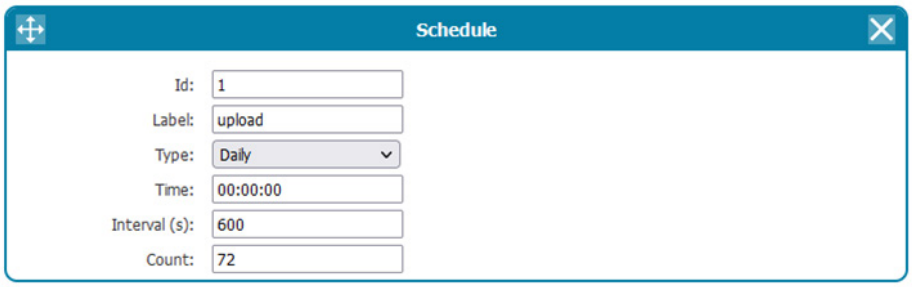

```
{
        "uid": "010471",
        "data": [
                {
                        "type": "lora",
                        "date": "2021-12-09T15:10:45",
                        "deveui": "0005f30000000295",
                        "devaddr": "00471001",
                        "rxinfo": {
                                "gatewayuid": "0005f3ffe010471",
                                "freq": "868.1",
                                "datr": "SF12BW125",
                                "codr": "4/5",
                                "rssi": "-20",
                                "lsnr": "7.2"
                        },
                        "fcnt": "2",
                        "fport": "1",
                        "records": [
                                {
                                        "type": "raw_hex",
                                        "data": "810005F3000000029500471001000101 01"
                                }
                        ]
                }
        ]
}
```

7. Automatic upload of data to the remote server

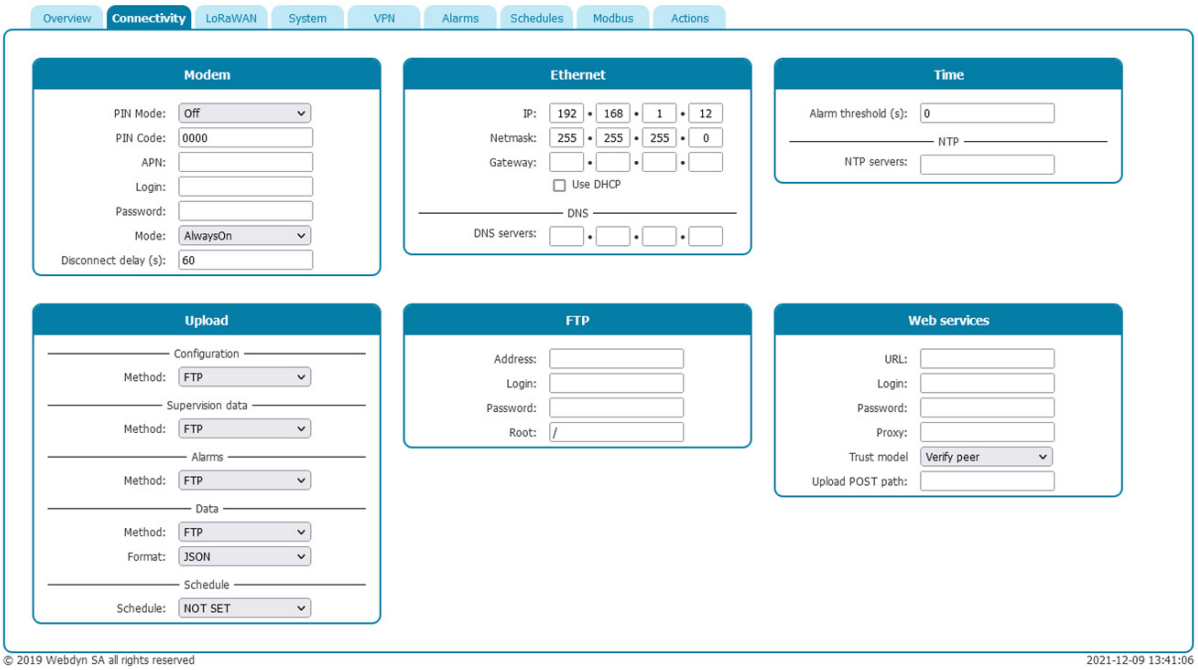
The connection interval to the remote server can be configured using the "Schedules" tab.



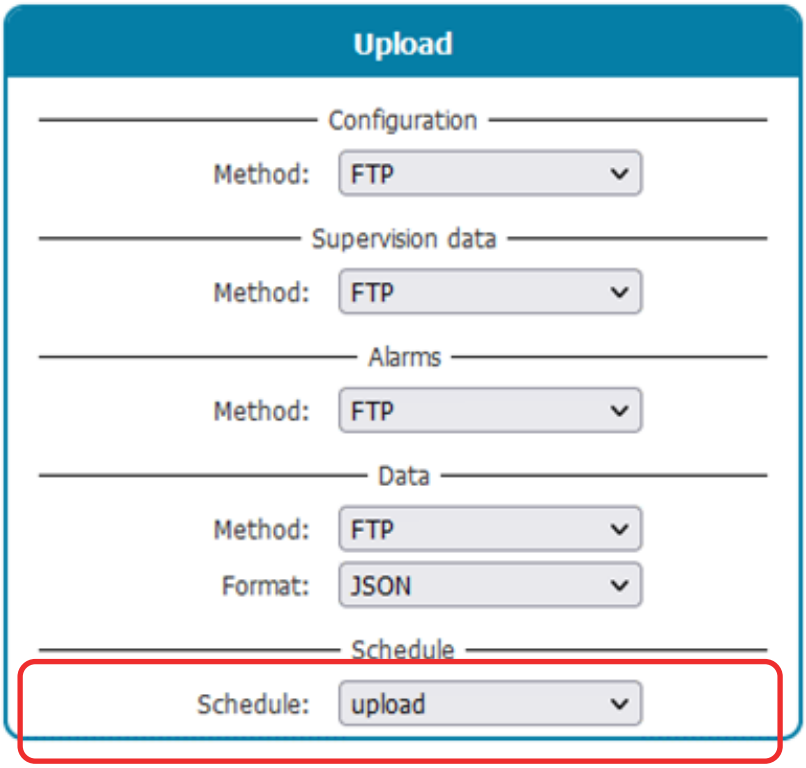
- Click "Add a new schedule" to add a new schedule.
- Configure the new schedule. Example of a data upload every 10 minutes:



- Go to the "Connectivity" tab:



- Choose the schedule you have just named (“upload” in this example) on the "Upload" panel.



The WebdynEasy LoRaWAN will then upload the data to the FTP server every 10 minutes.