AIoT Sensing Platform

User Guide

Readers

This guide is intended for the following users:

- Distributors
- Network Planners
- On-site technical support and maintenance personnel
- Network administrators responsible for network configuration and maintenance

For assistance, please contact

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Revision History

Date	Doc Version	Description
May 15, 2023	V 1.0	Initial version

Contents

1. Product Introduction

1.1 Overview

Milesight AIoT Sensing Platform, based on open-source Thingsbaord, provide an efficient solution to collect and store data from Milesight sensing camera products. Besides, AIoT Sensing Platform is able to manage and maintain the remote sensing camera devices.

1.2 Key Features

- Support smart recognition of data on the image from sensing cameras
- Support monitor and store data of remote devices
- Support managing and monitoring bulks of devices
- Support firmware and configuration file update remotely
- Friendly GUI for easy configuration

1.3 Recommended System

Hardware

For 1 to 300 devices

- RAM: 8 GB
- Disk: 50 GB

For 300 to 500 devices

- RAM: 16 GB
- Disk: 200 GB

Software

Operating System:

- Ubuntu Kinetic 22.10
- Ubuntu Jammy 22.04 (LTS)
- Ubuntu Focal 20.04 (LTS)
- Ubuntu Bionic 18.04 (LTS)

2. Installation

2.1 Requirement

- AIoT Sensing Platform Image Package
- WinSCP
- Putty (or other SSH tool)
- Install Docker: for Ubuntu

AIoT sensing platform supports to install by compose or command, please select one of them to complete the installation.

2.2 Compose Installation

1. Download AIoT sensing platform image package from Milesight website and import it to local path of system via WinSCP or other tools.

2. Push image to docker.

```
sudo -i
docker load < ~/msaiotsensingplatform.tar
```

3. Create docker compose file:

```
nano docker-compose.yml
```

Add the following lines to the yml file:

```
version: '3.0'
services:
  mysp:
    restart: always
    image: "msaiotsensingplatform:1.0.0.1"
    ports:
      - "5220:9090"
      - "1883:1883"
      - "7070:7070"
      - "5683-5688:5683-5688/udp"
    environment:
      TB_QUEUE_TYPE: in-memory
    volumes:
      - ~/.mysp-data:/data
      - ~/.mysp-logs:/var/log/msaiotsensingplatform
```

Parameter introduction:

- 5220:9090 - connect local port 5220 to exposed internal HTTP port 9090, this is not allowed to change, or the platform may not work well
- 1883:1883 - connect local port 1883 to exposed internal MQTT port 1883

- 7070:7070 - connect local port 7070 to exposed internal Edge RPC port 7070
- 5683-5688:5683-5688/udp - connect local UDP ports 5683-5688 to exposed internal COAP and LwM2M ports
- ~/.mysp-data:/data - mounts the host's dir ~/.mysp-data to platform DataBase data directory
- ~/.mysp-logs:/var/log/msaiotsensingplatform - mounts the host's dir ~/.mysp-logs to platform logs directory
- mysp - friendly local name of this machine
- restart: always - automatically start AIoT Sensing platform in case of system reboot and restart in case of failure.
- image: msaiotsensingplatform:1.0.0.1 - image name

4. Run following commands, before starting docker container(s), to create folders for storing data and logs. These commands additionally will change owner of newly created folders to docker container user. To do this (to change user) **chown** command is used, and this command requires sudo permissions (command will request password for a sudo access):

```
mkdir -p ~/.mysp-data && sudo chown -R 799:799 ~/.mysp-data
mkdir -p ~/.mysp-logs && sudo chown -R 799:799 ~/.mysp-logs
```

Create authorities for new folders:

```
sudo useradd -m msaiotsensingplatform
sudo groupadd msaiotsensingplatform    //ignore the error
sudo usermod -aG msaiotsensingplatform msaiotsensingplatform
mkdir -p ~/.mysp-data && sudo chown -R msaiotsensingplatform:msaiotsensingplatform ~/.mysp-data
sudo chmod -R 777 ~/.mysp-data
mkdir -p ~/.mysp-logs && sudo chown -R msaiotsensingplatform:msaiotsensingplatform ~/.mysp-logs
sudo chmod -R 777 ~/.mysp-logs
```

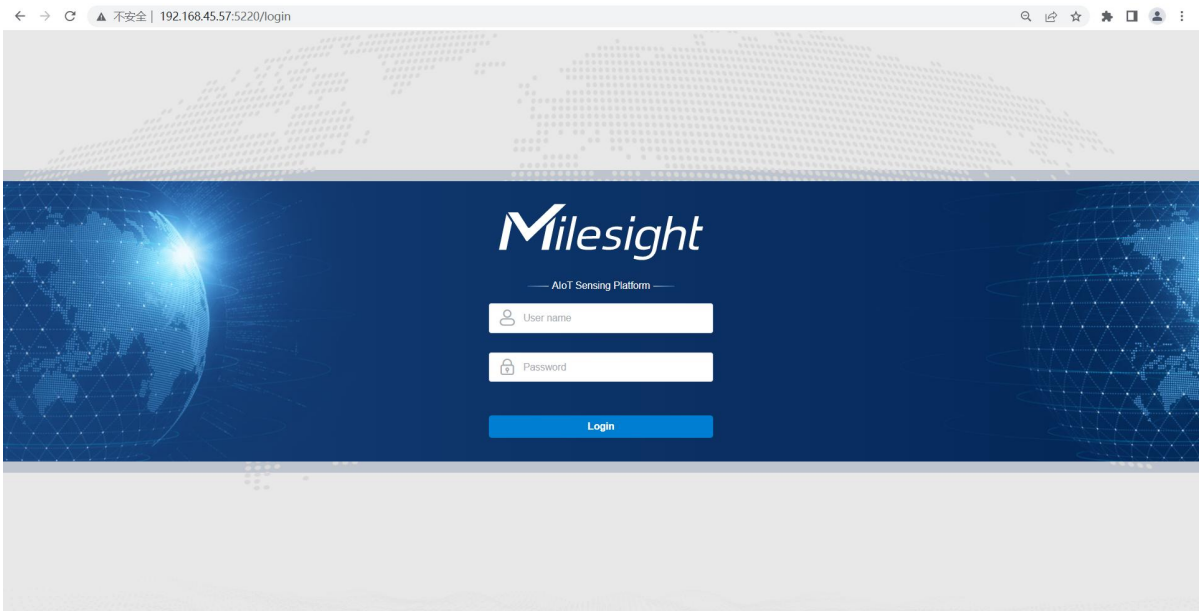
5. Set the terminal in the directory which contains the docker-compose.yml file and execute the following commands to up this docker compose directly:

```
docker compose up -d
docker compose logs -f mysp
```

It will take about 1 minutes to complete the installation and start the program.

Note: Docker Compose as docker-compose (with a hyphen) is deprecated. It is recommended to use Docker Compose V2 instead. If you still rely on docker compose as standalone here is the list of the above commands:
docker-compose up -d
docker-compose logs -f mysp

6. After installation, type http://{your-host-ip}:5520 in your browser to visit the login page.
Default username: admin
Default password: password



7. In case of any issues you can examine service logs for errors. For example to see platform lo gs execute the following command:

```
docker compose logs -f mysp
```

To stop the AIoT Sensing platform:

```
docker compose stop mysp
```

To start the AIoT Sensing platform:

```
docker compose start mysp
```

Note: Docker Compose as docker-compose (with a hyphen) is deprecated. It is recommended to use Docker Compose V2 instead. If you still rely on docker compose as standalone here is the list of the above commands:
docker-compose logs -f mysp
docker-compose stop mysp
docker-compose start mysp

2.3 Command Installation

1. Download AIoT sensing platform image package from Milesight website and import it to local path of system via WinSCP or other tools.
2. Push image to docker.

```
sudo -i
docker load < ~/msaiotsensingplatform.tar
docker images
```

3. Run following commands, before starting docker container(s), to create folders for storing data and logs. These commands additionally will change owner of newly created folders to docker container user. To do this (to change user) **chown** command is used, and this command requires sudo permissions (command will request password for a sudo access):

```
mkdir -p ~/.mysp-data && sudo chown -R 799:799 ~/.mysp-data
mkdir -p ~/.mysp-logs && sudo chown -R 799:799 ~/.mysp-logs
```

Create authorities for new folders:

```
sudo useradd -m msaiotsensingplatform
sudo groupadd msaiotsensingplatform    //ignore the error
sudo usermod -aG msaiotsensingplatform msaiotsensingplatform
mkdir -p ~/.mysp-data && sudo chown -R msaiotsensingplatform:msaiotsensingplatform ~/.mysp-data
sudo chmod -R 777 ~/.mysp-data
mkdir -p ~/.mysp-logs && sudo chown -R msaiotsensingplatform:msaiotsensingplatform ~/.mysp-logs
sudo chmod -R 777 ~/.mysp-logs
```

4. Execute the following commands to up this docker directly:

```
docker run -it -p 5220:9090 -p 1883:1883 -p 7070:7070 -p 5683-5688:5683-5688/udp -v ~/.mysp-data:/data -v ~/.mysp-logs:/var/log/msaiotsensingplatform --name mysp --restart always msaiotsensingplatform:1.0.0.1
```

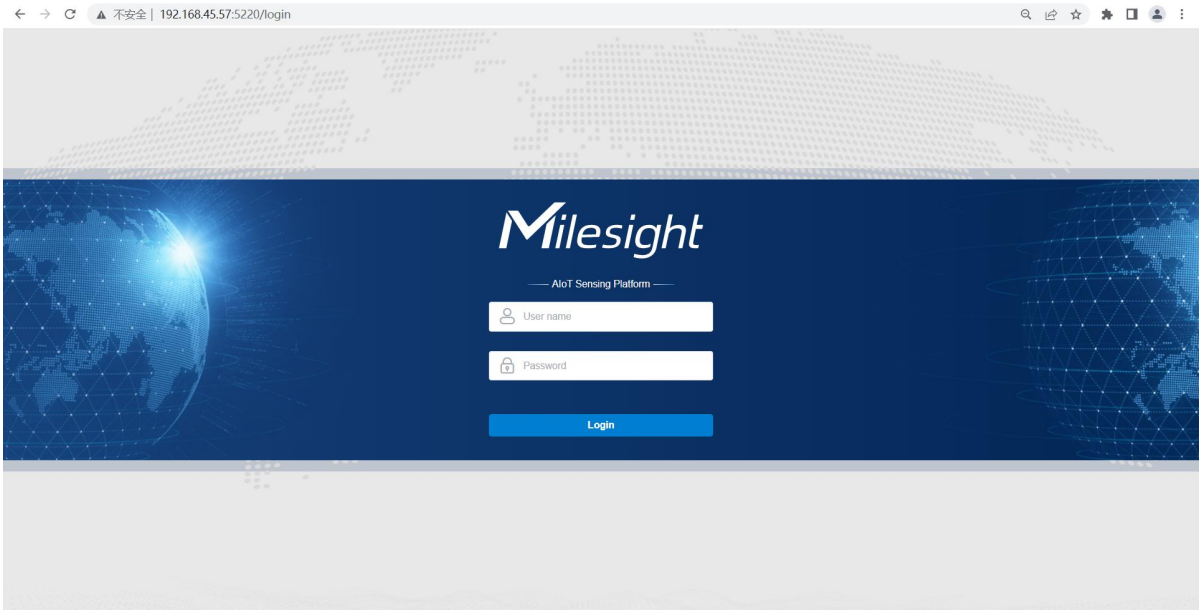
Parameter introduction:

- docker run - run this docker
- -p 5220:9090 - connect local port 5220 to exposed internal HTTP port 9090, this is not allowed to change, or the platform may not work well
- -p 1883:1883 - connect local port 1883 to exposed internal MQTT port 1883
- -p 7070:7070 - connect local port 7070 to exposed internal Edge RPC port 7070

- -p 5683-5688:5683-5688/udp - connect local UDP ports 5683-5688 to exposed internal COAP and LwM2M ports
- -v ~/.mysp-data:/data - mounts the host's dir ~/.mysp-data to platform DataBase data directory
- -v ~/.mysp-logs:/var/log/msaiotsensingplatform - mounts the host's dir ~/.mysp-logs to platform logs directory
- -name mysp - friendly local name of this machine
- --restart always - automatically start AIoT Sensing platform in case of system reboot and restart in case of failure.
- msaiotsensingplatform:1.0.0.1 - image name

It will take about 1 minutes to complete the installation and start the program.

5. After installation, type http://{your-host-ip}:5520 in your browser to visit the login page.
Default username: admin
Default password: password



6. Connect to AIoT Sensing Platform:

```
docker attach mysp
```

To stop the AIoT Sensing platform:

```
docker stop mysp
```

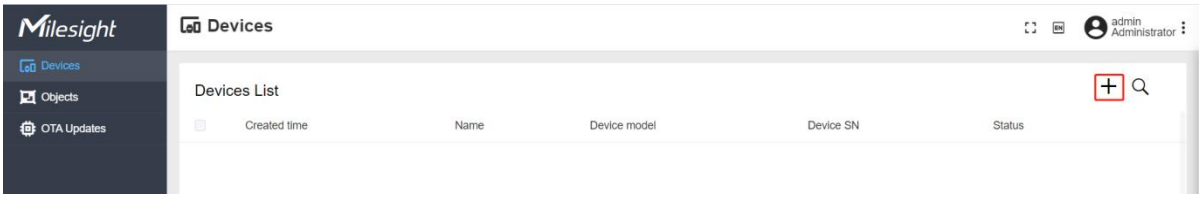
To start the AIoT Sensing platform:

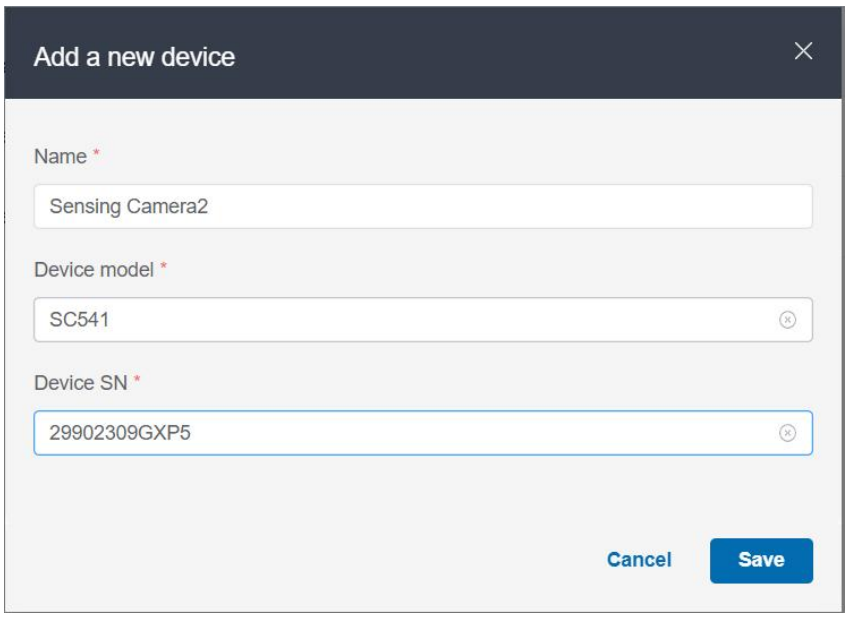
```
docker start mysp
```

3. Operation Guide

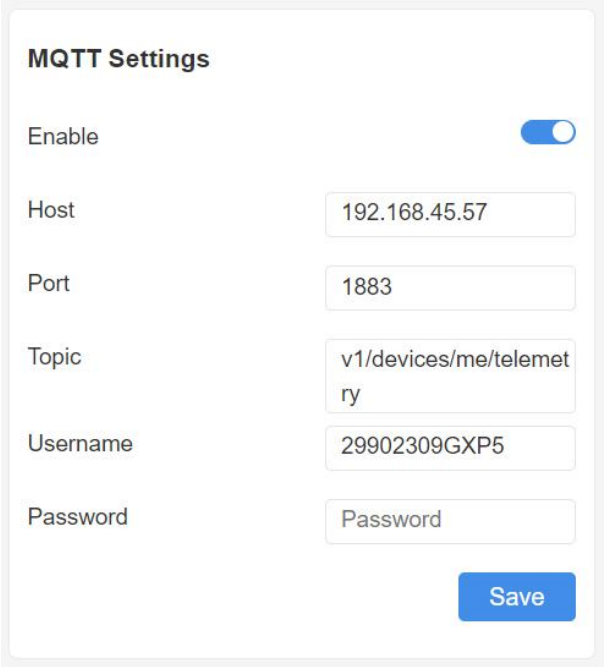
3.1 Connect Device

Step 1: Click "+" to add a device by adding the device SN.

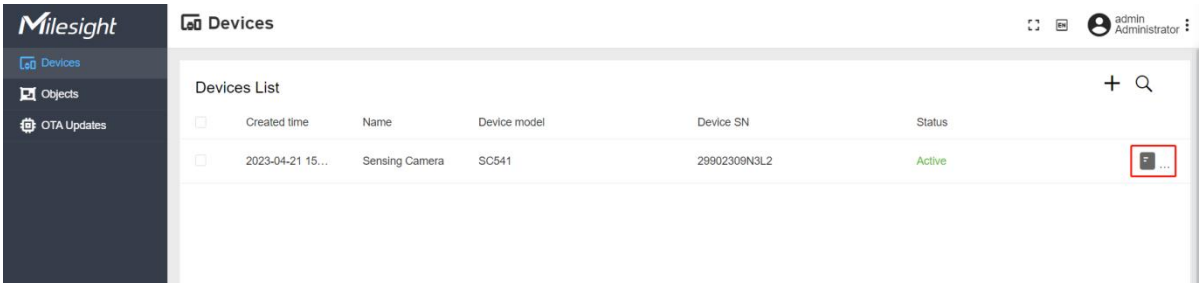




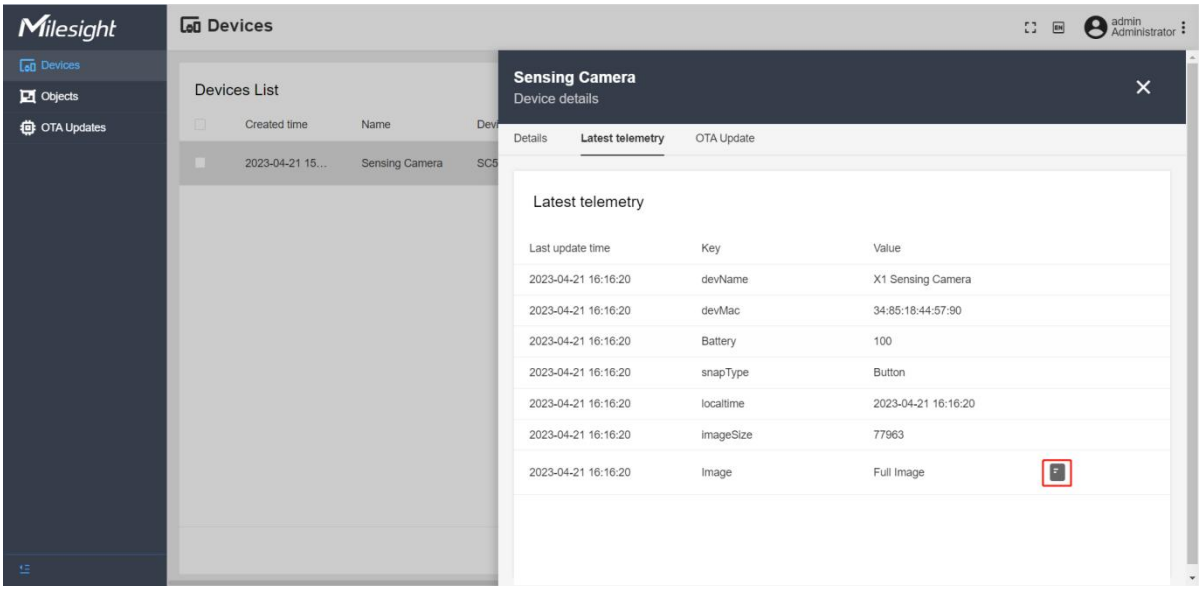
Step 2: Ensure the device has connected to the network which can reach the platform and configure the device to connect to the platform. Take SC541 as example, set the platform information as below:



Step 3: Only when the device sends the image to platform, the platform can change the status to Active. If the device does not send for more than 24 hours, the status will change to Inactive.

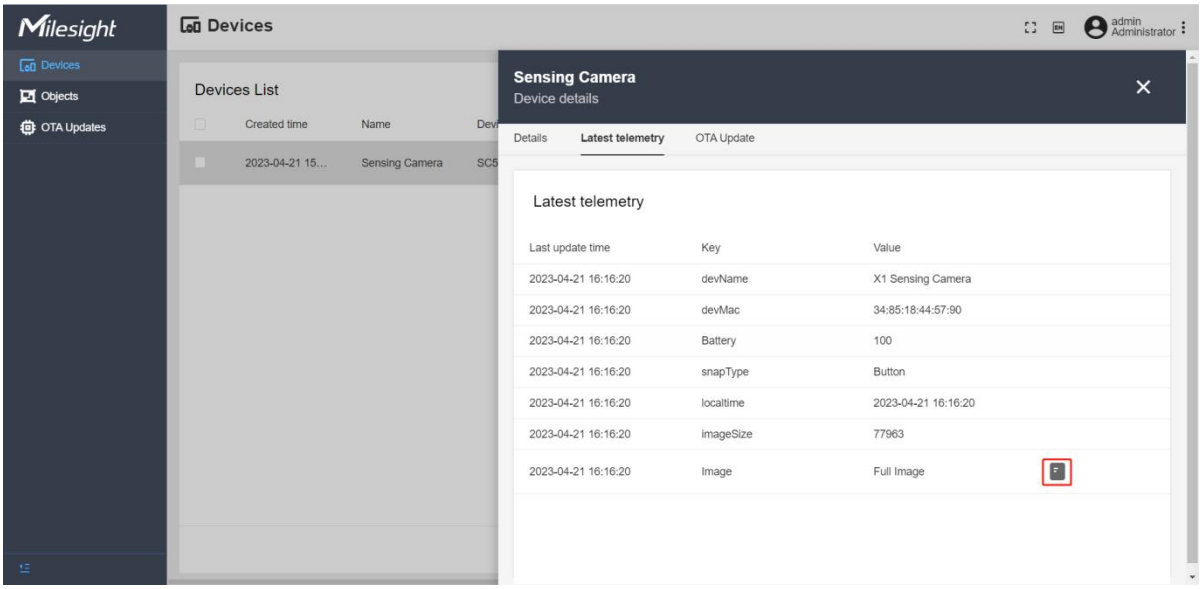


Step 4: Click the button on the right of device item to check the latest information of device and the image.

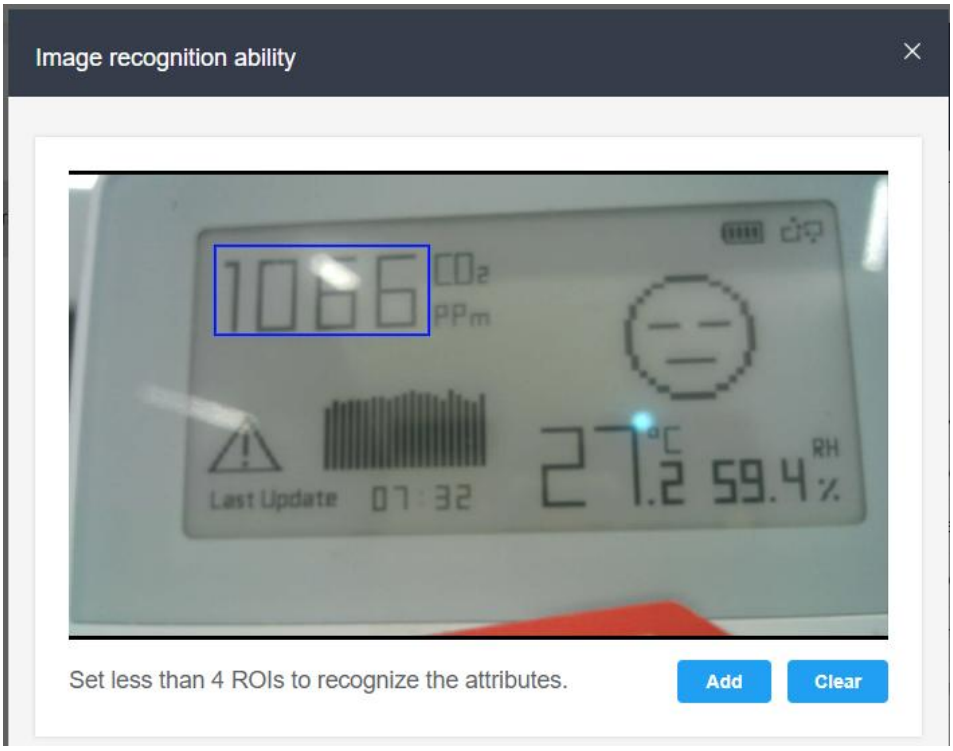


3.2 Sensing Data

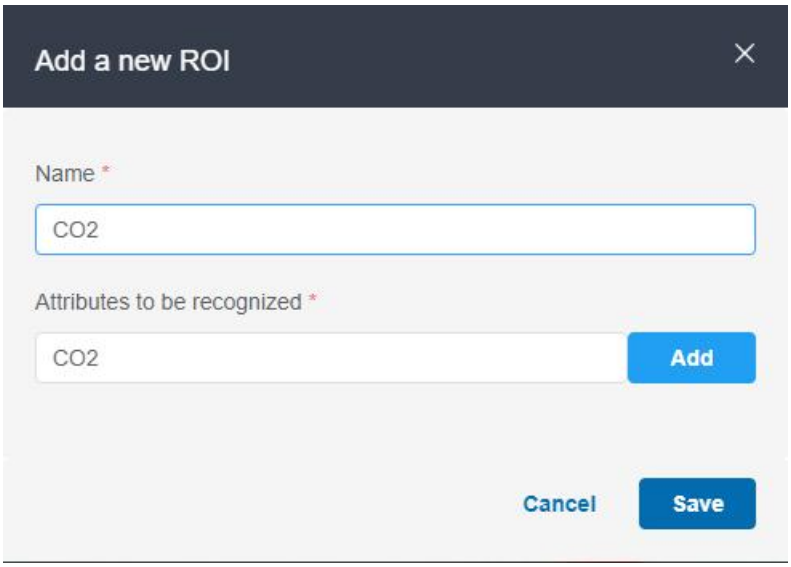
Step 1: Go to **Device** page, click the button on the right of device item to check the latest information of device, click the full image.



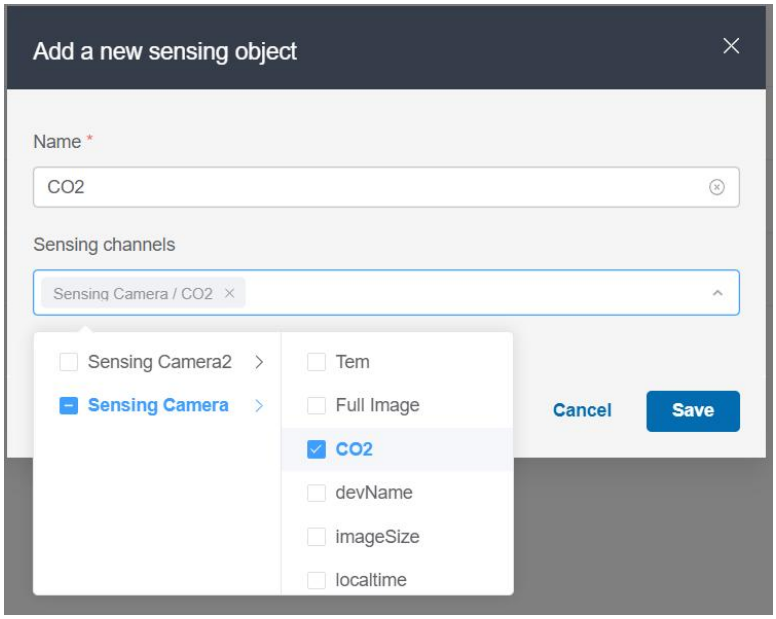
Step 2: Draw at least a ROI area to cover the data on the image, then click **Add**.



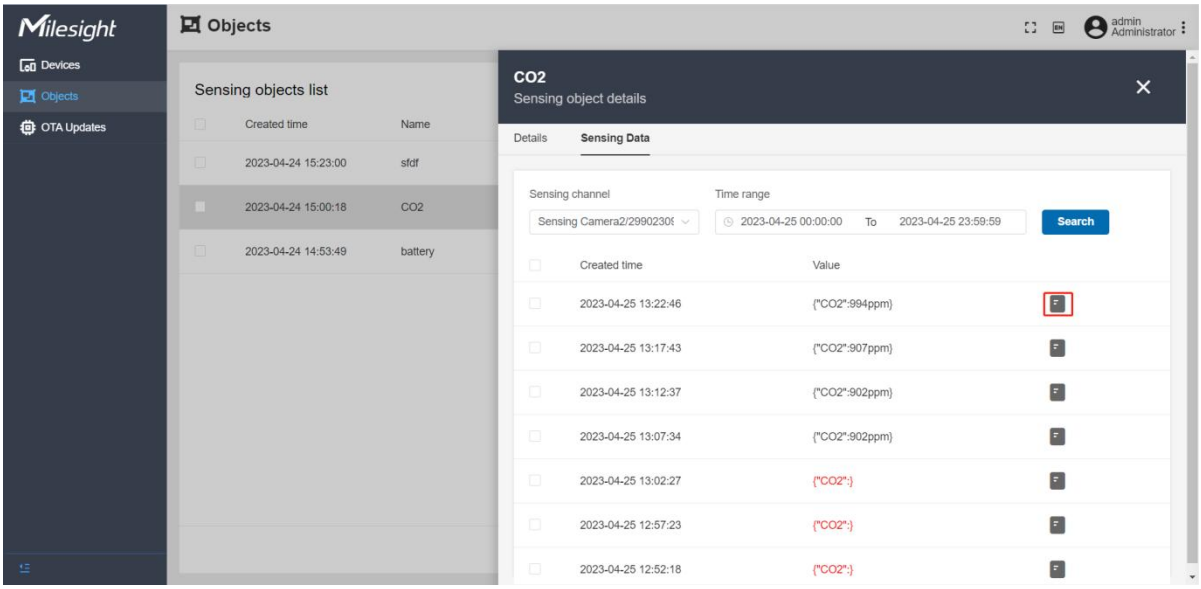
Set a name and an attribute name, click **Save** to save all settings.



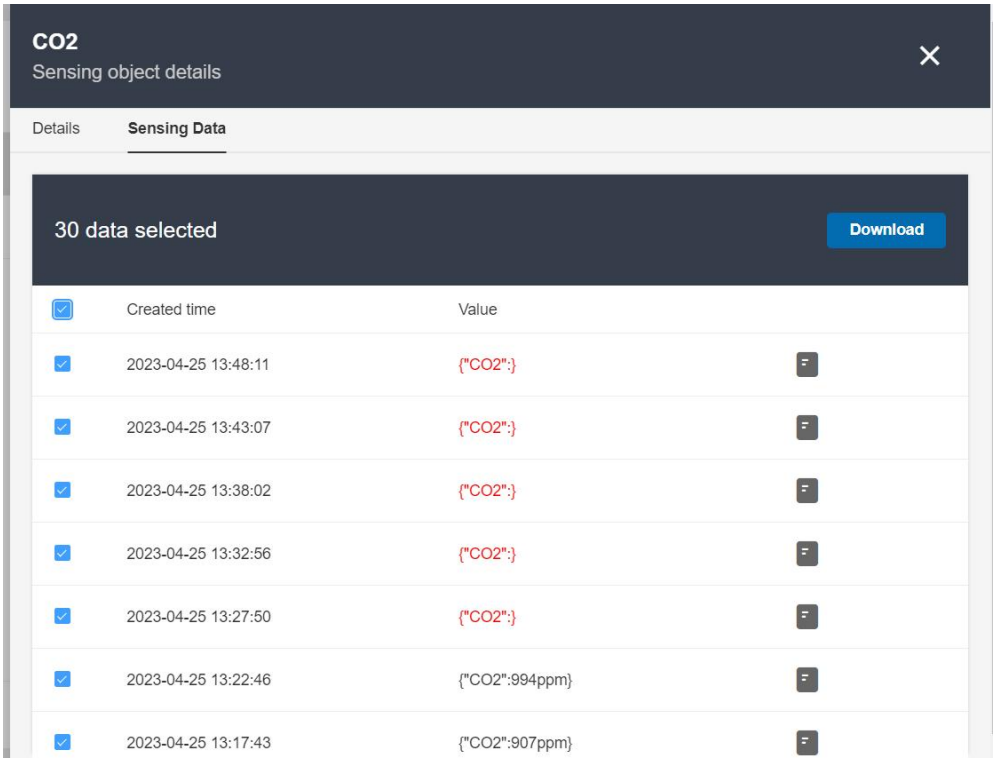
Step 3: Go to **Objects** page, click + to add sensing objects which needs to monitor.



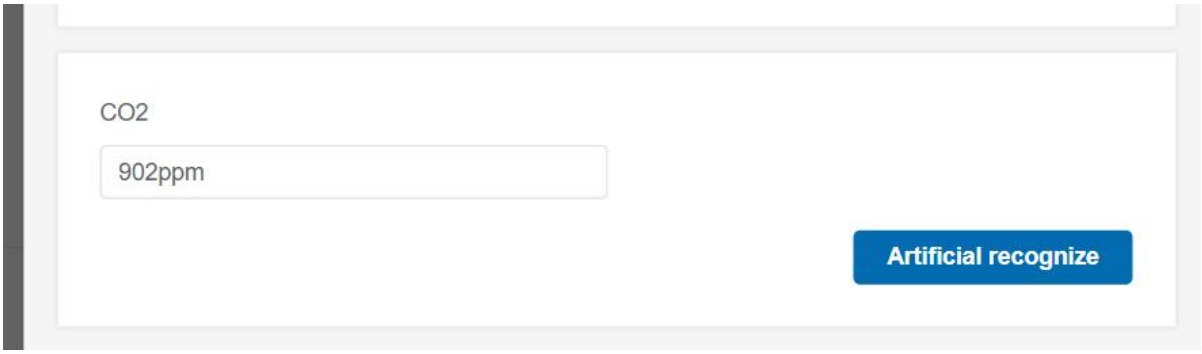
Step 4: Click the button on the right of object item to check the sensing data.



Users can also search for the historical data and download as json format file.

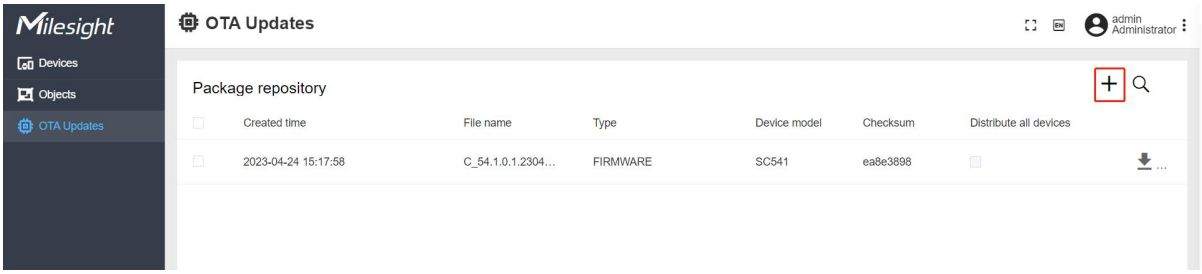


If the value is unrecognized or error, click the button beside the value to manually type the data and click **Artificial recognize**.



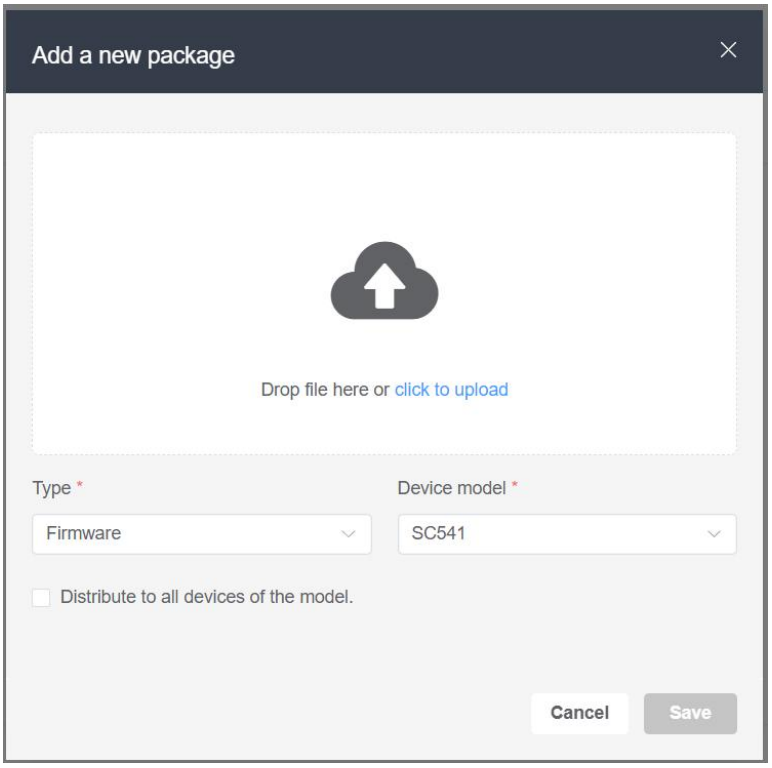
3.3 OTA Updates

Step 1: Go to **OTA Updates** page, click + to add a new package.

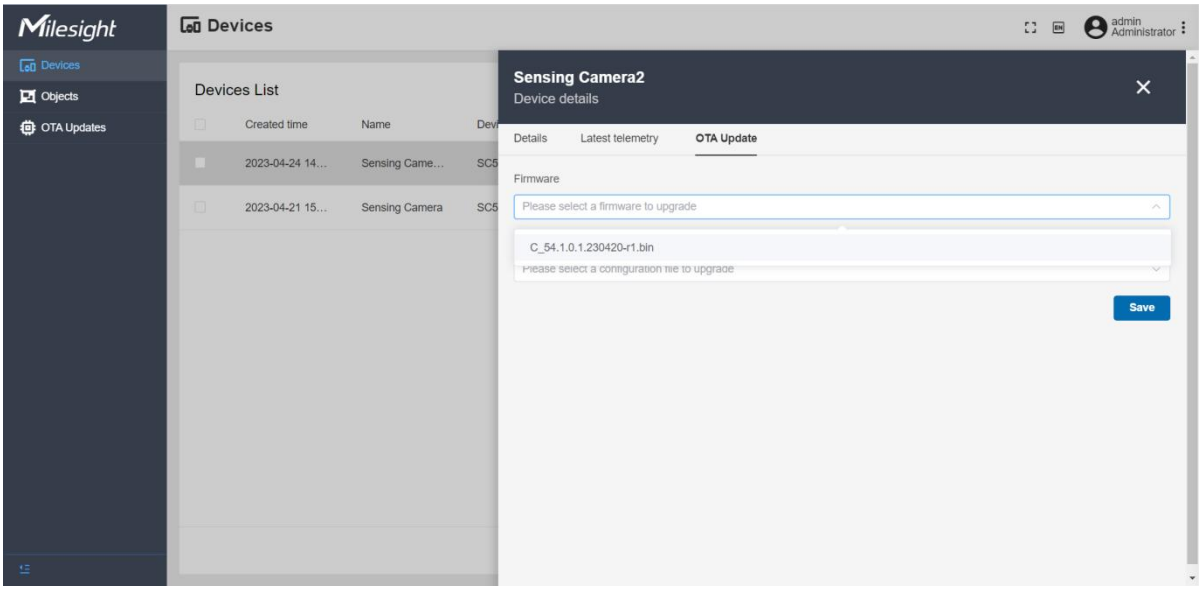


Step 2: Select the type as firmware or configuration file and select the model, then drag the file to corresponding area to upload, then click **Save**.

Note: if **Distribute to all devices of the model** option is enabled, the platform will apply the firmware or configuration file to all devices of this model right away.



Step 3: Go to **Devices** page, select the device you need to upgrade or apply configuration, click the button on the right of it and navigate to OTA Update page, users can select the files and click **Save** to complete the update of one device.



-END-