



# AIoT Sensing Platform

User Guide



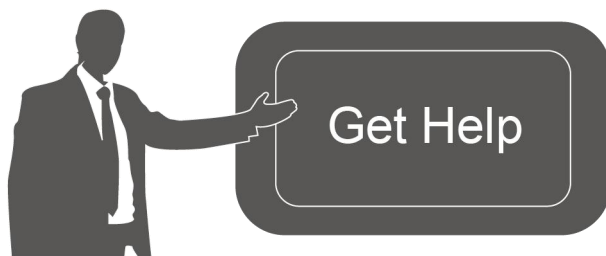
## Readers

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

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For assistance, please contact

Milesight technical support:

Email: [iot.support@milesight.com](mailto:iot.support@milesight.com)

Support Portal: [support.milesight-iot.com](http://support.milesight-iot.com)

Tel: 86-592-5085280

Fax: 86-592-5023065

Address: Building C09, Software Park  
Phase III, Xiamen 361024,  
China

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# Contents

1. Product Introduction .....	4
1.1 Overview .....	4
1.2 Key Features .....	4
1.3 Recommended System .....	4
Hardware .....	4
Software .....	4
2. Installation .....	4
2.1 Requirement .....	4
2.2 Compose Installation .....	5
2.3 Command Installation .....	8
3. Operation Guide .....	10
3.1 Connect Device .....	10
3.2 Sensing Data .....	12
3.3 OTA Updates .....	15

# 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:

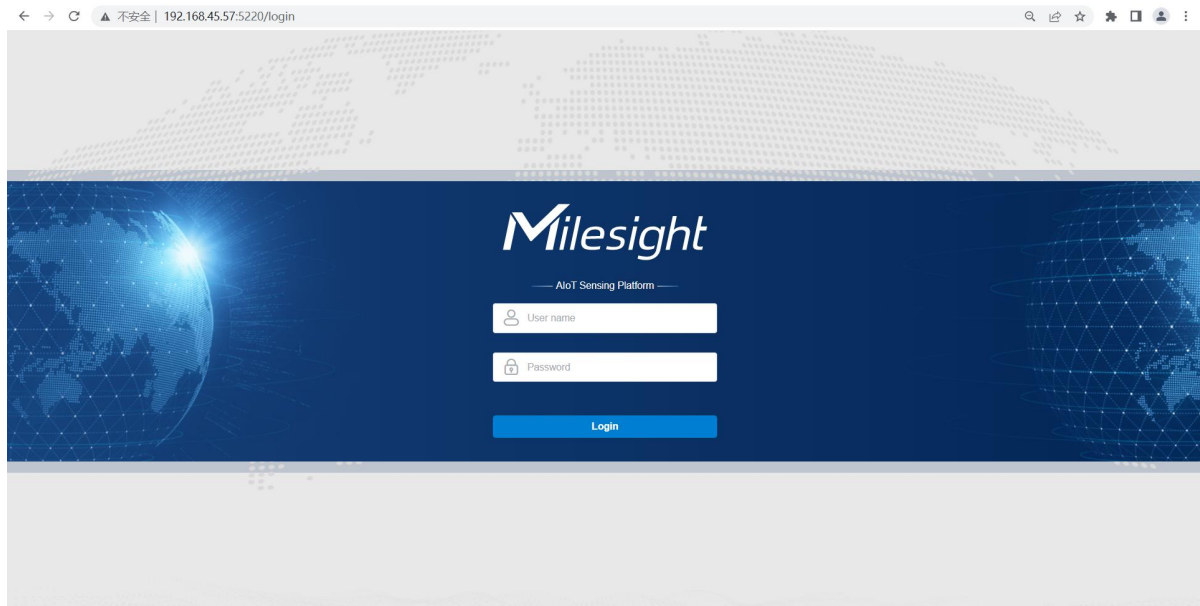
***docker-compose up -d***

***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 logs 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



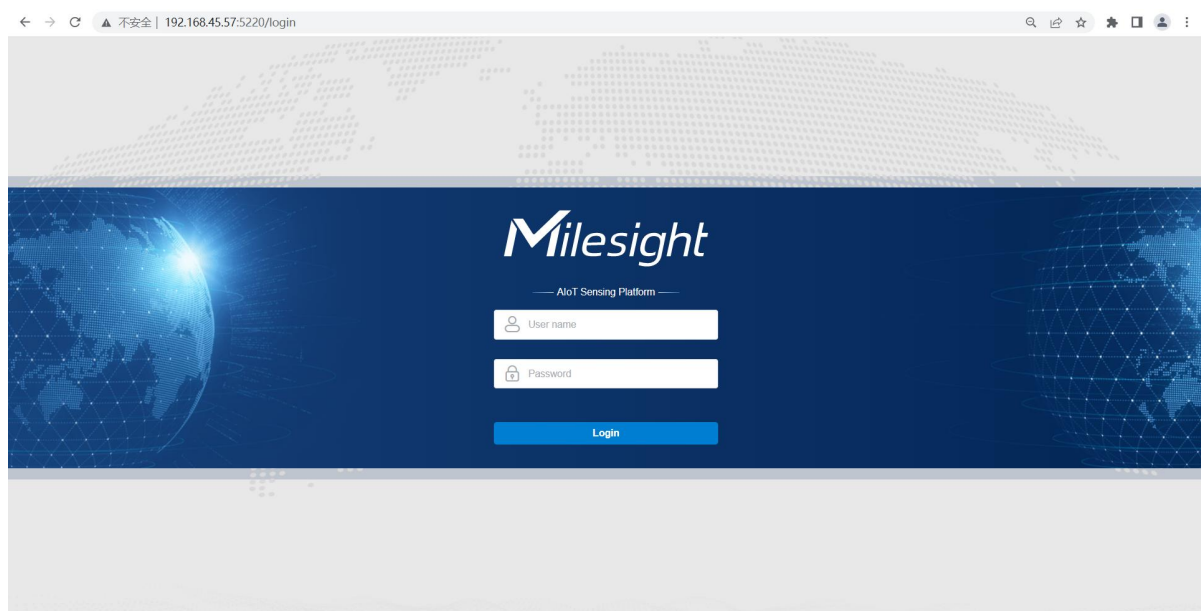
- `-p 5683-5688:5683-5688/udp` - connect local UDP ports 5683-5688 to exposed internal COAP and LwM2M ports
- `-v ~/.mysp-data:/data` - mounts the host's dir `~/.mysp-data` to platform DataBase data directory
- `-v ~/.mysp-logs:/var/log/msaiotsensingplatform` - mounts the host's dir `~/.mysp-logs` to 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](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.

The screenshot displays the Milesight web interface. On the left is a dark sidebar with the Milesight logo and navigation links for 'Devices', 'Objects', and 'OTA Updates'. The main area is titled 'Devices' and contains a 'Devices List' table with columns for 'Created time', 'Name', 'Device model', 'Device SN', and 'Status'. A red box highlights a '+' icon in the top right of the table, next to a search icon. Overlaid on this is a modal window titled 'Add a new device' with a close button (X) in the top right. The modal contains three required text input fields: 'Name \*' with the value 'Sensing Camera2', 'Device model \*' with the value 'SC541', and 'Device SN \*' with the value '29902309GXP5'. At the bottom right of the modal are 'Cancel' and 'Save' buttons.

**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:

### MQTT Settings

Enable ☒

Host

Port

Topic

Username

Password

**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.

**Devices List**

Created time	Name	Device model	Device SN	Status
2023-04-21 15...	Sensing Camera	SC541	29902309N3L2	Active

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

**Sensing Camera**  
Device details

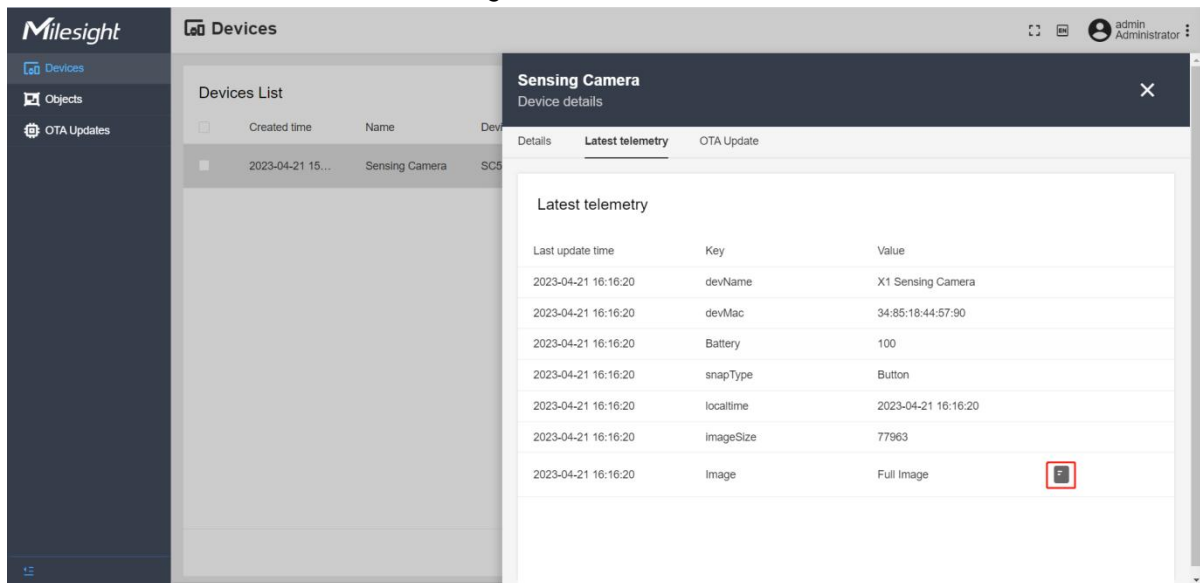
Details Latest telemetry OTA Update

**Latest telemetry**

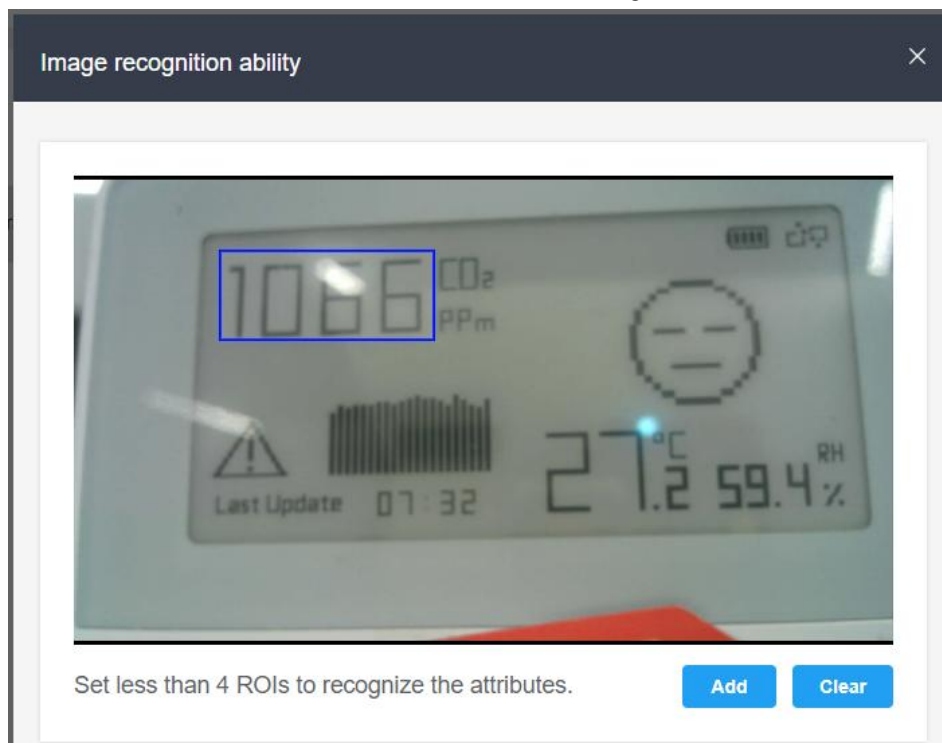
Last update time	Key	Value
2023-04-21 16:16:20	devName	X1 Sensing Camera
2023-04-21 16:16:20	devMac	34:85:18:44:57:90
2023-04-21 16:16:20	Battery	100
2023-04-21 16:16:20	snapType	Button
2023-04-21 16:16:20	localtime	2023-04-21 16:16:20
2023-04-21 16:16:20	imageSize	77963
2023-04-21 16:16:20	Image	Full Image

## 3.2 Sensing Data

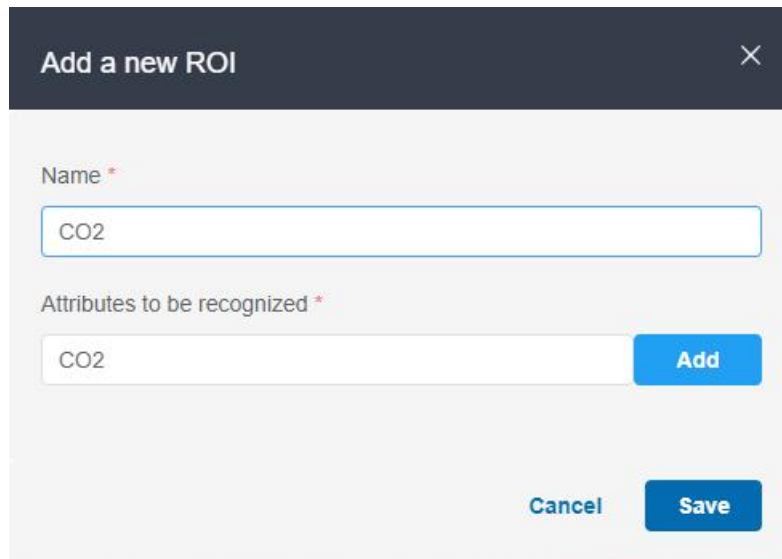
**Step 1:** Go to **Device** page, click the button on the right of device item to check the latest information of device, click the full image.



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

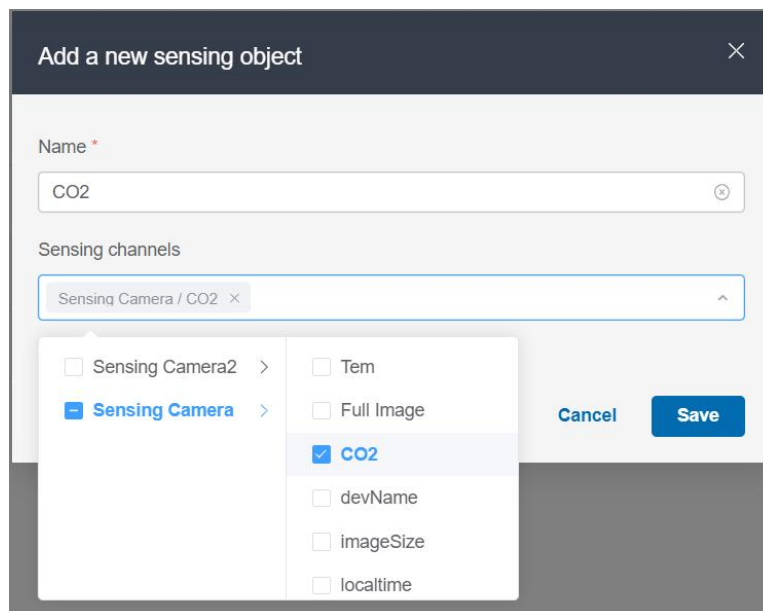


Set a name and an attribute name, click **Save** to save all settings.



The 'Add a new ROI' dialog box has a dark header with a close button. It contains two input fields: 'Name' with the value 'CO2' and 'Attributes to be recognized' also with 'CO2'. An 'Add' button is next to the second field. At the bottom are 'Cancel' and 'Save' buttons.

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



The 'Add a new sensing object' dialog box shows the 'Name' field set to 'CO2'. The 'Sensing channels' dropdown is open, showing a list of options: 'Sensing Camera2', 'Sensing Camera' (selected), 'Tem', 'Full Image', 'CO2' (checked), 'devName', 'imageSize', and 'localtime'. 'Cancel' and 'Save' buttons are at the bottom right.

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

The screenshot shows the Milesight web interface. On the left is a sidebar with 'Devices', 'Objects', and 'OTA Updates'. The main area is titled 'Objects' and contains a 'Sensing objects list' table. The table has columns for 'Created time' and 'Name'. The list shows four objects: 'sdf' (2023-04-24 15:23:00), 'CO2' (2023-04-24 15:00:18), and 'battery' (2023-04-24 14:53:49). The 'CO2' object is selected. To the right, a 'CO2 Sensing object details' panel is open, showing 'Sensing Data'. It includes a 'Sensing channel' dropdown (set to 'Sensing Camera2/2990230f') and a 'Time range' selector (from 2023-04-25 00:00:00 to 2023-04-25 23:59:59). Below this is a table of data points with columns for 'Created time' and 'Value'. The first row shows a value of '{"CO2":994ppm}' and a red 'F' button next to it. The second row shows '{"CO2":907ppm}' and a red 'F' button. The third row shows '{"CO2":902ppm}' and a red 'F' button. The fourth row shows '{"CO2":902ppm}' and a red 'F' button. The fifth row shows '{"CO2":}' and a red 'F' button. The sixth row shows '{"CO2":}' and a red 'F' button. The seventh row shows '{"CO2":}' and a red 'F' button. The eighth row shows '{"CO2":}' and a red 'F' button.

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

The screenshot shows the 'CO2 Sensing object details' panel. It has a 'Details' tab and a 'Sensing Data' tab. The 'Sensing Data' tab is active. At the top, it says '30 data selected' and there is a 'Download' button. Below this is a table with columns for 'Created time' and 'Value'. The table shows 30 data points. The first row shows a value of '{"CO2":}' and a red 'F' button. The second row shows '{"CO2":}' and a red 'F' button. The third row shows '{"CO2":}' and a red 'F' button. The fourth row shows '{"CO2":}' and a red 'F' button. The fifth row shows '{"CO2":}' and a red 'F' button. The sixth row shows '{"CO2":}' and a red 'F' button. The seventh row shows '{"CO2":}' and a red 'F' button. The eighth row shows '{"CO2":}' and a red 'F' button. The ninth row shows '{"CO2":}' and a red 'F' button. The tenth row shows '{"CO2":}' and a red 'F' button. The eleventh row shows '{"CO2":}' and a red 'F' button. The twelfth row shows '{"CO2":}' and a red 'F' button. The thirteenth row shows '{"CO2":}' and a red 'F' button. The fourteenth row shows '{"CO2":}' and a red 'F' button. The fifteenth row shows '{"CO2":}' and a red 'F' button. The sixteenth row shows '{"CO2":}' and a red 'F' button. The seventeenth row shows '{"CO2":}' and a red 'F' button. The eighteenth row shows '{"CO2":}' and a red 'F' button. The nineteenth row shows '{"CO2":}' and a red 'F' button. The twentieth row shows '{"CO2":}' and a red 'F' button. The twenty-first row shows '{"CO2":}' and a red 'F' button. The twenty-second row shows '{"CO2":}' and a red 'F' button. The twenty-third row shows '{"CO2":}' and a red 'F' button. The twenty-fourth row shows '{"CO2":}' and a red 'F' button. The twenty-fifth row shows '{"CO2":}' and a red 'F' button. The twenty-sixth row shows '{"CO2":}' and a red 'F' button. The twenty-seventh row shows '{"CO2":}' and a red 'F' button. The twenty-eighth row shows '{"CO2":}' and a red 'F' button. The twenty-ninth row shows '{"CO2":}' and a red 'F' button. The thirtieth row shows '{"CO2":}' and a red 'F' button.

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

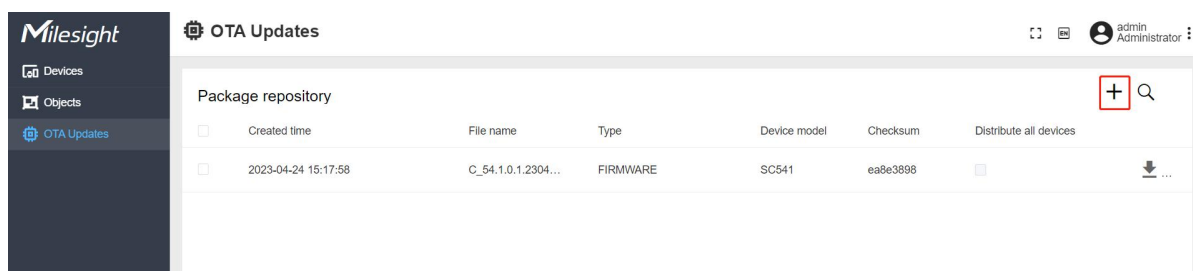
CO2

902ppm

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.

Add a new package

  
Drop file here or [click to upload](#)

Type \*

Firmware

Device model \*

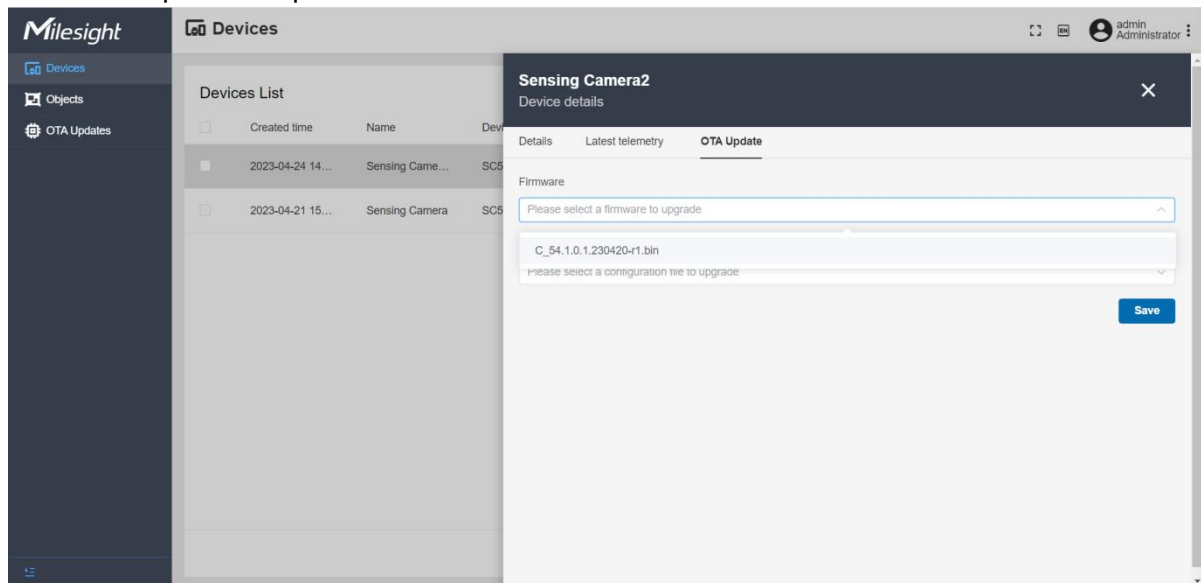
SC541

☐ Distribute to all devices of the model.

Cancel

Save

**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-**