



How to Integrate Milesight Gateways and Devices into the UMA Platform



Version Change Log			
Version	Revision Date	Revision Details	Revised By
V1.0	20250310	Initial	Lockon
V1.1	20250326	1. Screenshots of the registration process of the platform are updated. 2. Adjust the creation logic of Building and Floor. 3. Screenshots of Monitor Data section	Lockon

Introduction

UMA is a technology service company headquartered in the UK, primarily providing information and communication technology solutions and business support services to enterprises. The company's services cover various fields such as telecommunications, management consulting, and administrative support, focusing on helping clients achieve digital transformation and operational efficiency improvements.

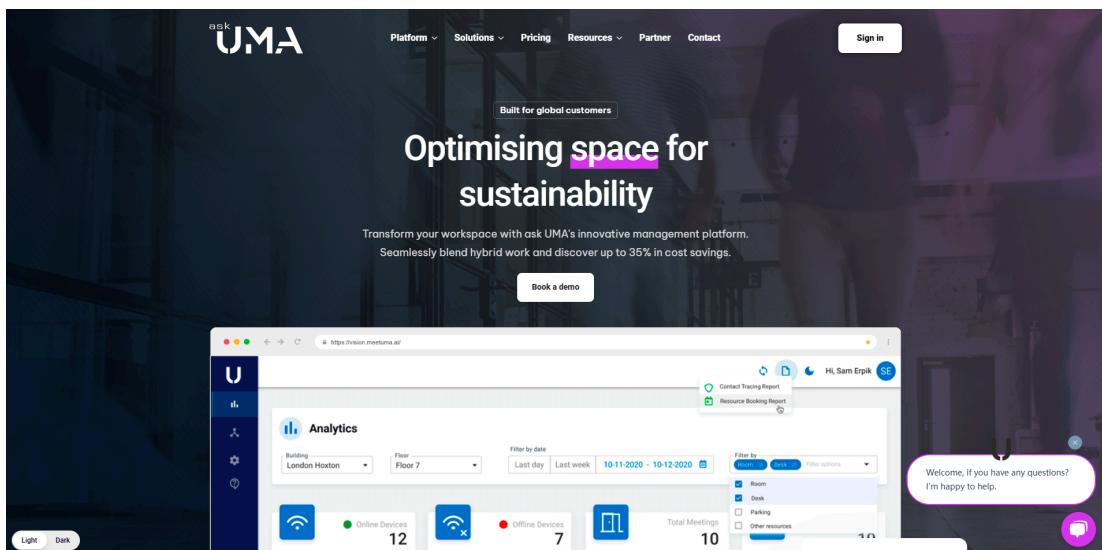
This document mainly introduces how to use the UG65 gateway to connect to the UMA platform, as well as how to add AM308 and AM319 devices as examples, including the Dashboard demonstrations.

1. Prerequisites

- **Gateway Models:** UG65 (Firmware version v60.0.0.45), or UG56, UG67
- **Sensor Models:** AM308 and AM319, Firmware version v1.6
- **Frequency Band Used in This Demonstration:** 915M (8-15 channel)

2. Register Account

Visit <https://askuma.ai/>, click the "Book a demo" button, and fill out the information as prompted.



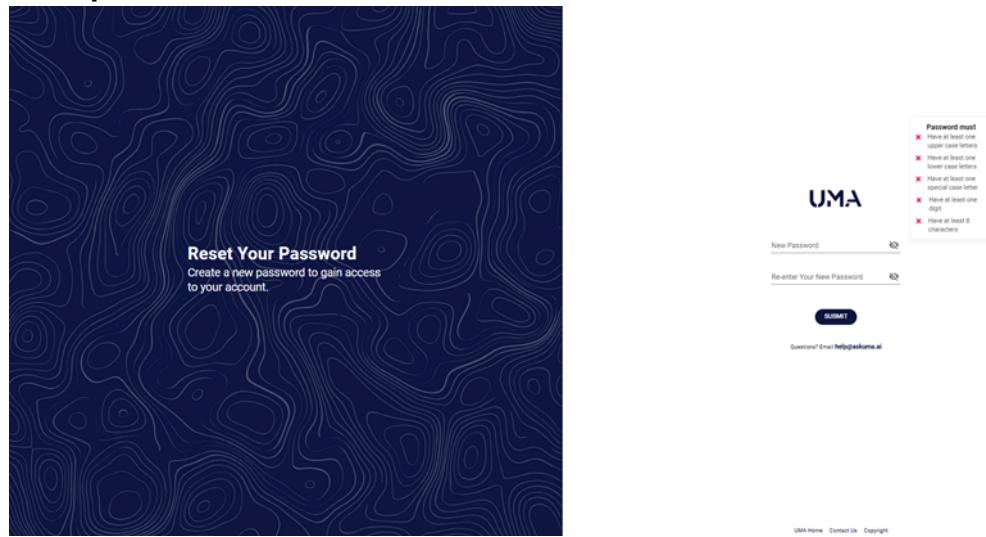
Once UMA's staff receives the request, they will contact you further, and you will receive account details and MQTT Broker configuration information assigned to your

platform.

3. First Login Wizard

Once you have received an account creation email from UMA, click on the link to set up your company's subscription.

Set a **password**.



Visit <https://vision.meetuma.ai/login> to log in.

The left side shows the "Welcome to Vision" login screen. It has a "Welcome to Vision" header, a sub-header "Your workplace's space and device management tool for smart buildings.", an "Email" input field containing "clay@milesight.com", and a "Sign in" button. At the bottom are links for "UMA Home", "Contact Us", and "Copyright", followed by "Powered by UMA". The right side shows a blurred image of a modern office interior with desks, laptops, and mobile devices displaying data. Overlaid on this image is a semi-transparent box containing three circular icons with user profiles. Below this box is the text "Optimising space for sustainability".

Follow the wizard to get started.



Set your company's regional settings.

- ① Where are you located? Set your regional settings ② Create a building Set up your first workspace ③ Working hours Set your office hours policy

Set your regional settings

We use these settings to personalise your experience

Choose your time zone *
Asia/Shanghai

Language *
English

Choose a time format

- 12-hour format (e.g. 2:00 PM)
 24-hour format (e.g. 14:00)

Choose a date format

- DD/MM/YYYY
 MM/DD/YYYY

Create a building and floor(s) and your preferred floor (default floor for your user account).

For demonstration purposes, I've configured a **Milesight building** as an example.

1 Where are you located? Set your regional settings 2 Create a building Set up your first workspace 3 Working hours Set your office hours policy

Create your first building

Buildings are the foundation of your workspace setup

Name: XIAMEN MILESIGHT IOT CO. LTD

Address*: Xiamen, Fujian, China



Floor 1

+ ADD FLOOR

Select preferred floor*: Floor 1

Drag and zoom the map to pinpoint your building's location

Set your company's working hours.

1 Where are you located? Set your regional settings 2 Create a building Set up your first workspace 3 Working hours Set your office hours policy

Set your working hours

Set the default working hours for your office. These settings will restrict bookings outside of the defined times and ensure accurate analytics.

Office Hours

Sunday Monday Tuesday
 Wednesday Thursday Friday
 Saturday

From: HH * 9 A... MM * 00 Until: HH * 5 P... MM * 00

Click **Finish**.

← FINISH →

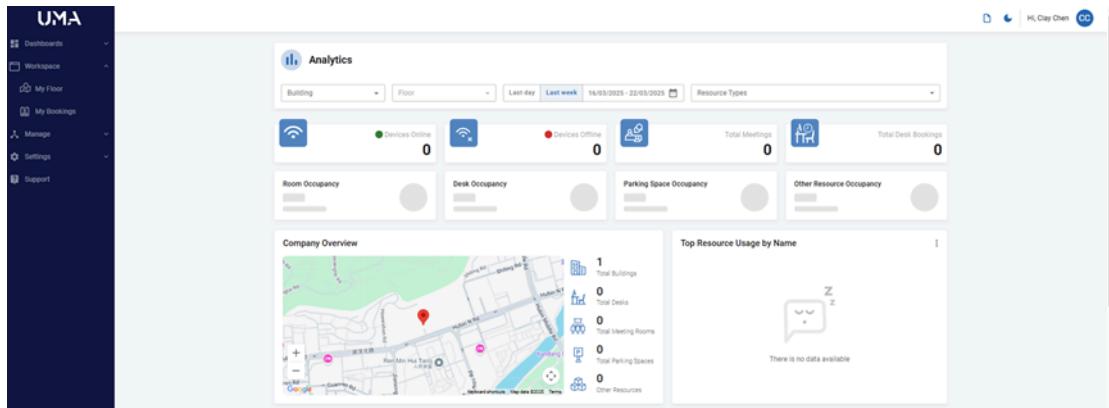
Click **Go to Dashboard**.

1 Where are you located? Set your regional settings 2 Create a building Set up your first workspace 3 Working hours Set your office hours policy

You're all set!

Everything is set up! You can now explore and manage your workspace...

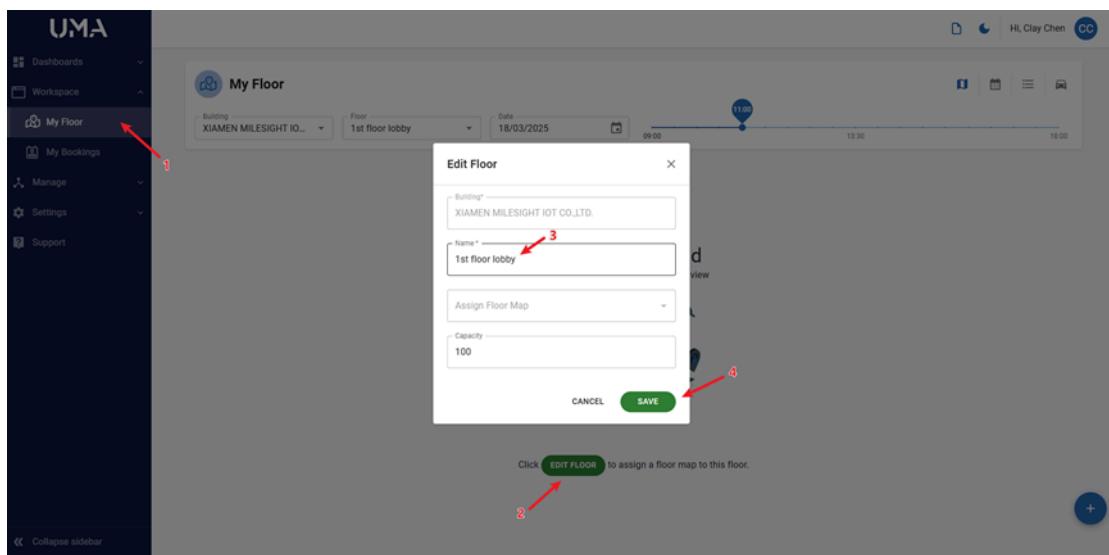
GO TO DASHBOARD →



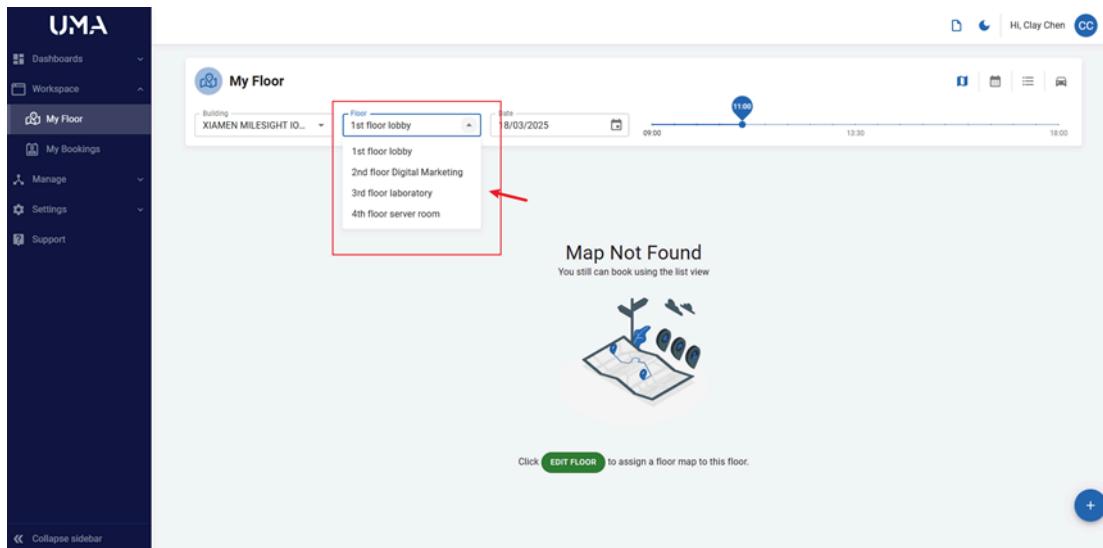
4. Create More Floors (Optional)

Next, create a Floor for the Building. For demonstration purposes, I've configured a Milesight building as an example.

Simply follow the steps shown in the screenshot:



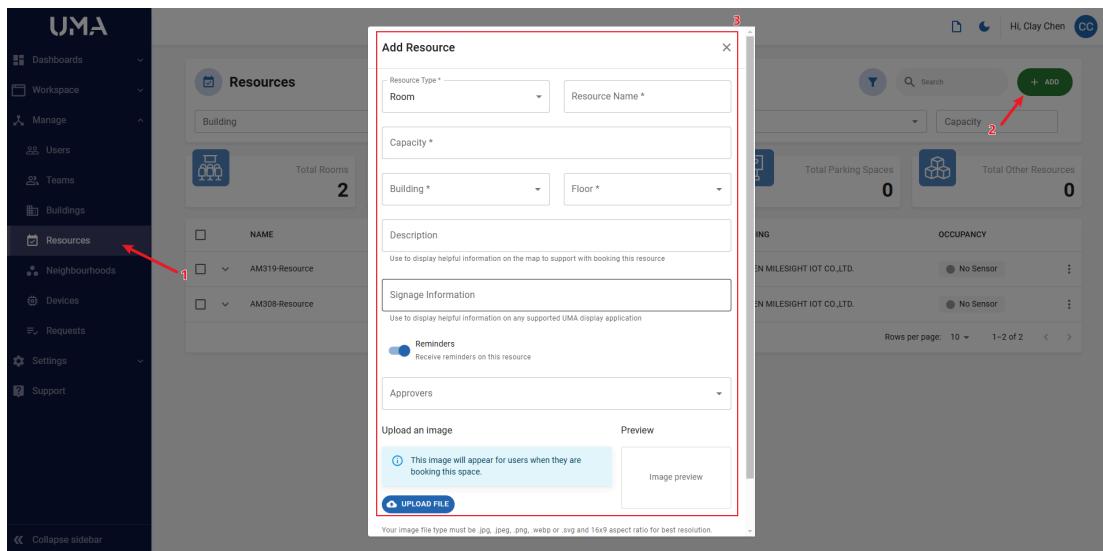
In this example, we've created 4 floors, and the devices used for this demonstration will all be added to the first floor:



5. Create Resources

Now, create Resource records, and this step is mainly to configure the relationship between Sensors and Floors.

Follow the steps in the screenshot below:



Since we have two types of devices, we need to create two records, one for AM308 and one for AM319.

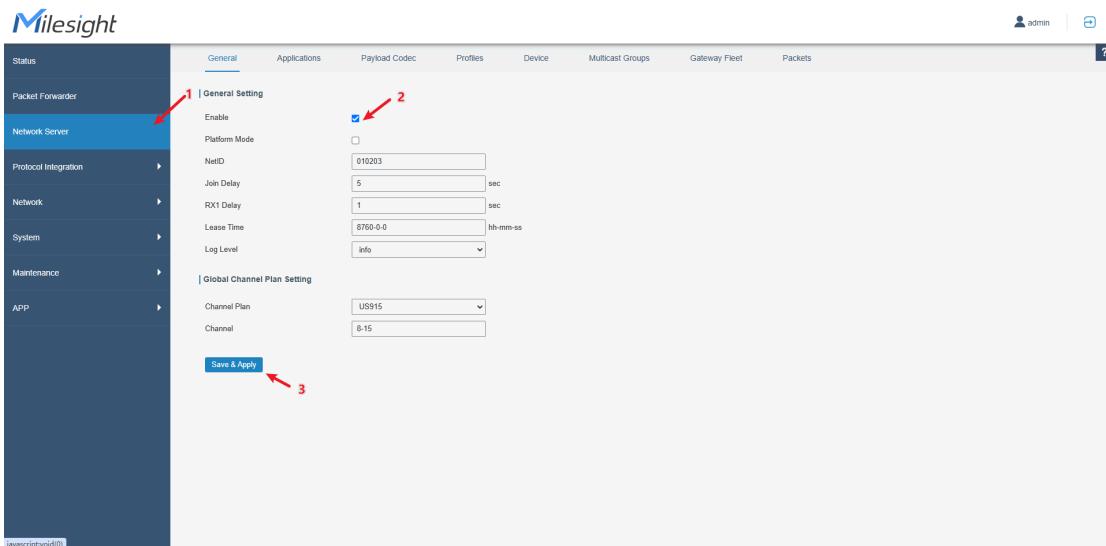
Below is a schematic of the relationship between **Sensors**, **Floors**, and **Buildings**:

At this point, the basic configuration on the UMA platform is complete. Next, we will configure our gateway.

6. Configure Gateway

6.1. Enable Built-in NS:

First, follow the steps in the screenshot below to enable the built-in NS on the device:

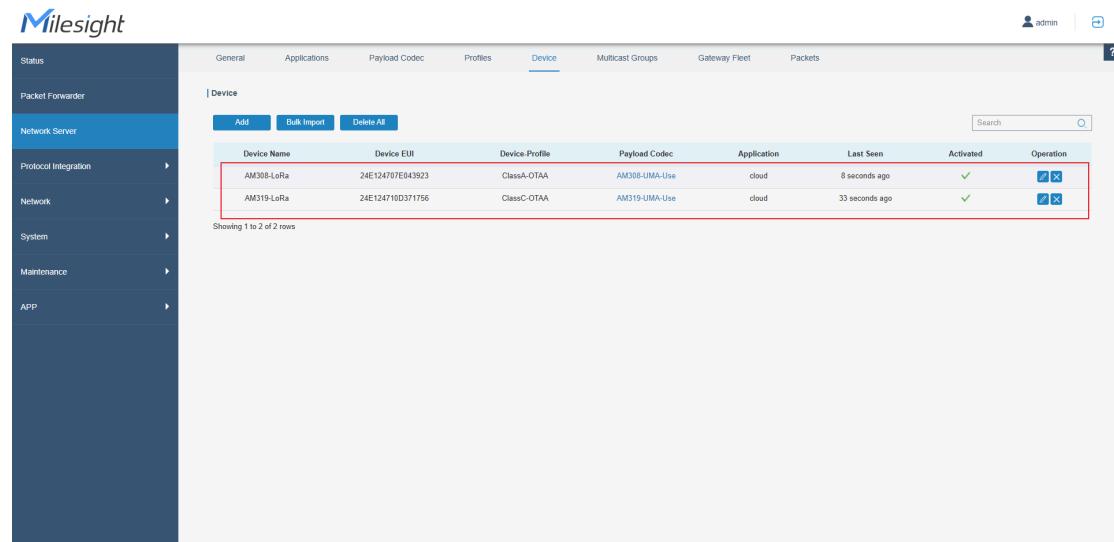


With that, the built-in NS on our gateway is now enabled.

6.2. Add AM308 and AM319

Follow the steps in <[How to Connect LoRaWAN Nodes to Milesight Gateway](#)> to add the devices.

Once added, the status will look like this:



6.3. Create Custom Decode

Follow the steps in <[How to Use Payload Codec on Milesight Gateway](#)> to create the decode. Additionally, modify the default Decode code as shown in the screenshot below (ensure to add the required code from the platform before the return decode statement):

```

decoded.devEUI = LoRaObject.devEUI;
decoded.rssi = LoRaObject.rxInfo[0].rssi;
decoded.snr = LoRaObject.rxInfo[0].loRaSNR;
decoded.data = LoRaObject.data;
decoded.time = new Date().toISOString();

```

The screenshot shows the Milesight Network Server interface under the 'Protocol Integration' section. In the 'Payload Codec' tab, a new custom payload codec named 'AM308-UMA-Use' is being configured. The 'Payload Decoder Function' field contains the provided JavaScript code, which is highlighted with a red box and a red arrow pointing to it.

Similarly, for both AM308 and AM319, create separate Payload Codecs for each, as shown in the image:

The screenshot shows the Milesight Network Server interface under the 'Protocol Integration' section. In the 'Payload Codec' tab, a list of available payload codecs is displayed. The 'Object Mapping Function' column for the AM308-UMA-Use entry is highlighted with a red box and a red arrow pointing to it.

Name	Payload Decoder Function	Payload Encoder Function	Object Mapping Function	Details
AM102	✓	✓	✓	<i>i</i>
AM102L	✓	✓	✓	<i>i</i>
AM103	✓	✓	✓	<i>i</i>
AM103L	✓	✓	✓	<i>i</i>
AM104	✓	✓	✓	<i>i</i>
AM107	✓	✓	✓	<i>i</i>
AM307	✓	✓	✓	<i>i</i>
AM307L	✓	✓	✓	<i>i</i>
AM308	✓	✓	✓	<i>i</i>
AM308L	✓	✓	✓	<i>i</i>

Name	Description	Payload Decoder Function	Payload Encoder Function	Object Mapping Function	Operation
AM308-UMA-Use	-	✓	✓	✓	<i>[Edit]</i> <i>[Delete]</i>
AM319-UMA-Use	-	✓	✓	✓	<i>[Edit]</i> <i>[Delete]</i>

The screenshot shows the Milesight Device Management Platform. On the left, the navigation sidebar includes sections like Status, Packet Forwarder, Network Server, Protocol Integration, Network, System, Maintenance, and APP. The main content area is titled 'Device' and shows a table with two rows of data. The columns are: Device Name, Device EUI, Device Profile, Payload Codec, Application, Last Seen, Activated, and Operation. The first row has Device Name 'AM308-LoRa', Device EUI '2AE124707E043923', Device Profile 'ClassA-OTAA', Payload Codec 'AM308-UMA-Use', Application 'cloud', Last Seen '4 seconds ago', Activated '✓', and Operation '✓'. The second row has Device Name 'AM319-LoRa', Device EUI '2AE124710D371756', Device Profile 'ClassC-OTAA', Payload Codec 'AM319-UMA-Use', Application 'cloud', Last Seen '27 seconds ago', Activated '✓', and Operation '✓'. A red box highlights the 'Payload Codec' column for both rows.

Once configured, the Payload structure for the Sensors should appear as shown below:

The screenshot shows the Milesight Device Management Platform. The left sidebar includes sections like Status, Packet Forwarder, Network Server, Protocol Integration, Network, System, Maintenance, and APP. The main content area is titled 'Packets' and shows a table of transmitted packets. A modal window titled 'Packet Details' is open over the table, showing the following fields: CodedRate (4/5), SNR (13.0), RSSI (-22), Power (0.5), Payload(b64) (CXP0Jw9LQA-097342707d72e80), and Payload(hex) (097342707d72e80). The JSON payload is displayed as: [{"data": "CXP0Jw9LQA-", "devEUI": "2AE124707E043923", "pm2_5": 45, "pm10_5": 1022.8, "temp": 22, "vem": 13, "time": "2025-03-18T03:30:07.640Z"}]. A red box highlights this JSON payload. The table below lists other transmitted packets with columns: Port, Size, Fcnt, Type, Time, and Details. The last row of the table has a 'Refresh' button.

6.4. Configure MQTT Parameters

Follow the steps to navigate to the MQTT configuration page:

Milesight

Status

Packet Forwarder

Network Server

Protocol Integration

Network

System

Maintenance

APP

General Applications Payload Codec Profiles Device Multicast Groups Gateway Fleet Packets

Applications

ID	Name	Description	Operation
1	cloud	cloud	

Milesight

Status

Packet Forwarder

Network Server

Protocol Integration

Network

System

Maintenance

APP

General Applications Payload Codec Profiles Device Multicast Groups Gateway Fleet Packets

Applications

Name	cloud
Description	cloud
Metadata	<input checked="" type="checkbox"/>

Data Transmission

Type	Operation
MQTT	

Save Cancel

Fill out the relevant information as shown in the screenshot (use the MQTT Broker parameters from Step 2):

Milesight

Status

Packet Forwarder

Network Server

Protocol Integration

Network

System

Maintenance

APP

General Applications Payload Codec Profiles Device Multicast Groups Gateway Fleet Packets

Applications

Name	cloud
Description	cloud
Metadata	<input checked="" type="checkbox"/>

Data Transmission

Type	MQTT
Status	Connected

General

Broker Address	mqt-external.mbeduma.ai
Broker Port	8883
Client ID	client123456
Connection Timeout's	30
Keep Alive Interval's	60
Data Retransmission	<input checked="" type="checkbox"/>

User Credentials

Enable	<input checked="" type="checkbox"/>
Username	milesight
Password	JHjc

TLS

Enable	<input type="checkbox"/>
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The screenshot shows the 'Applications' tab in the Milesight UMA interface. In the 'User Credentials' section, 'Username' and 'Password' fields are filled with 'milesight'. In the 'TLS' section, 'Mode' is set to 'CA signed server certificate'. Below these, the 'Topic' section is expanded, showing topic configurations for various data types. The 'UpLink data' topic is set to 'milesight', and the 'Downlink data' topic is set to 'milesight/downlink/\$deveui'.

Note:

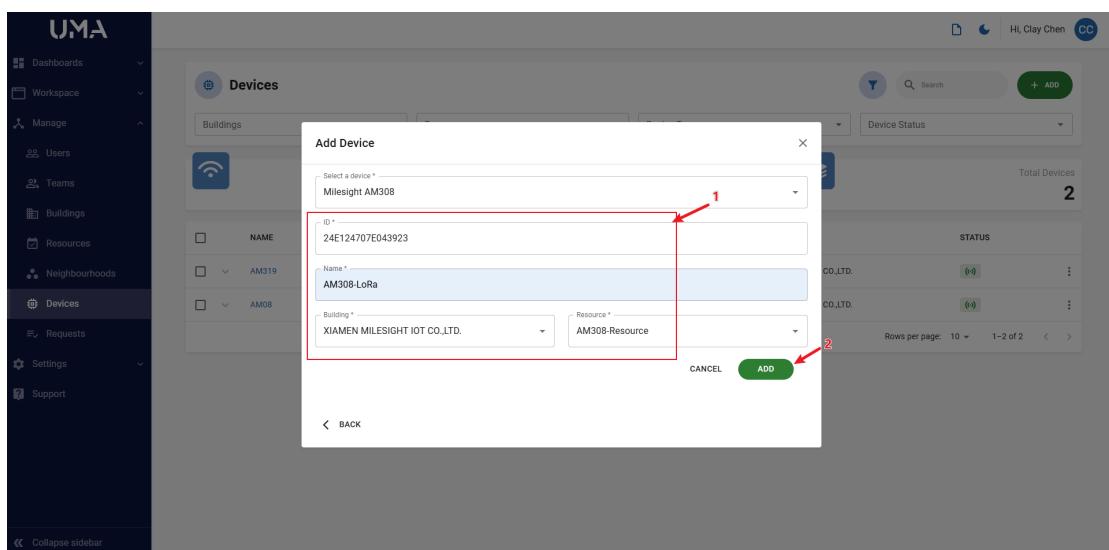
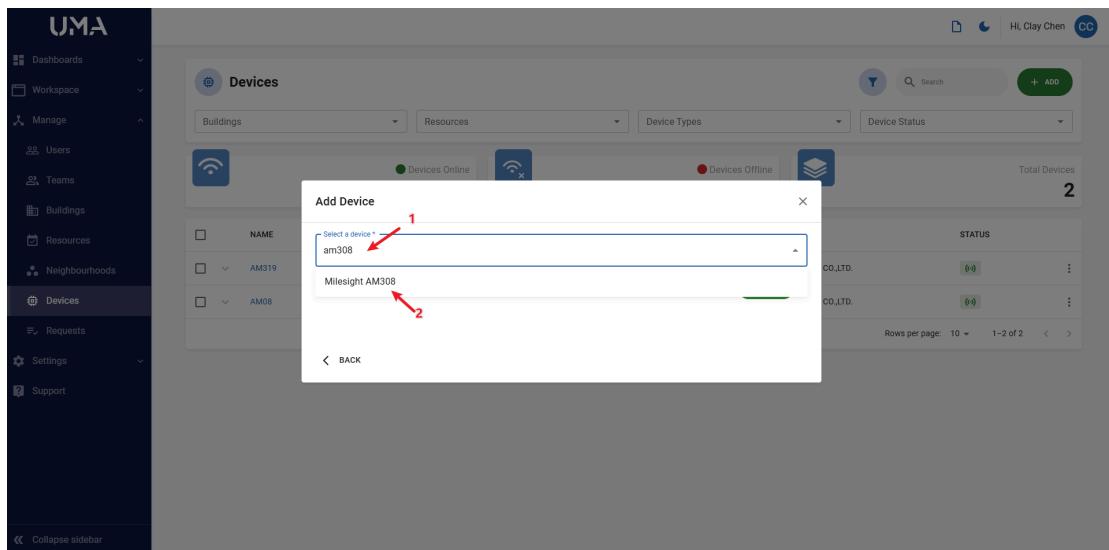
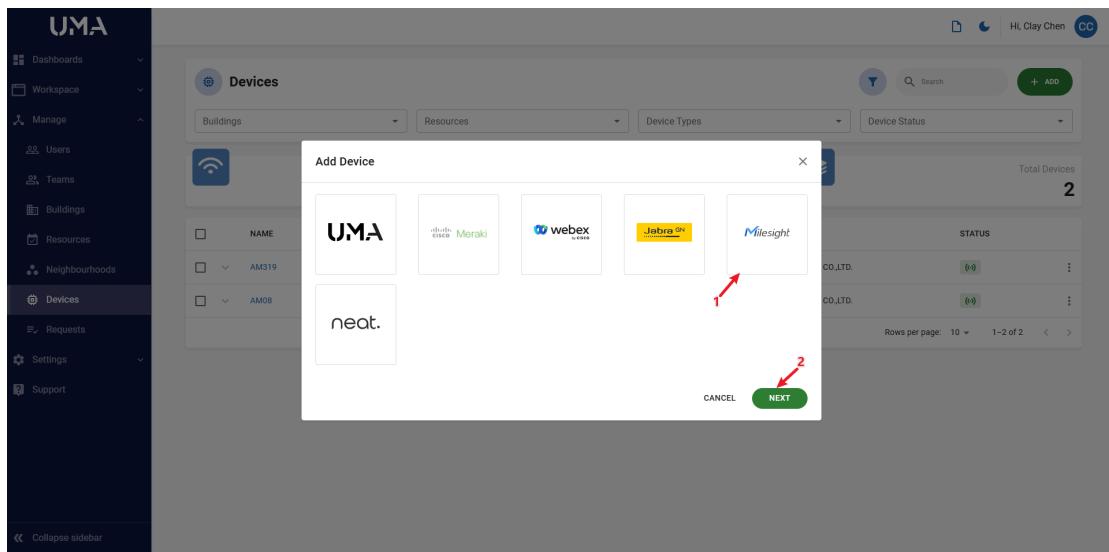
1. Do not check the **Data Retransmission** option.
2. The Uplink Topic path is **milesight**.
3. The Downlink Topic path is **milesight/downlink/\$deveui**.

With this, the operations on our gateway are complete.

7. Add Device

Return to the UMA platform interface and follow the steps shown below:

The screenshot shows the 'Devices' page in the UMA platform. The sidebar on the left has 'Devices' selected. The main area displays a table of devices. At the top right of the table is a green '+ ADD' button. The table shows two devices: AM319 (Milesight AM319) and AM308 (Milesight AM308), both online and last seen 2 minutes ago. The total number of devices is 2.



Note:

The **ID** here refers to the **Device EUI** data.

After clicking "**ADD**," the result will appear as follows:

The screenshot shows the UMA platform's Devices page. On the left is a dark sidebar with navigation options: Dashboards, Workspace, Manage (Users, Teams, Buildings, Resources, Neighbourhoods), Devices (selected), Requests, Settings, and Support. The main area has a light background. At the top right are icons for file, search, and user (Hi, Clay Chen). Below is a green "ADD" button. The main content area has tabs for Buildings, Resources, Device Types, and Device Status. It displays a summary: 2 Devices Online, 0 Devices Offline, and Total Devices 2. Below is a table with columns: NAME, TYPE, LAST SEEN, RESOURCE, BUILDING, and STATUS. Two rows are shown, both highlighted with a red border: AM319 (Milesight AM319, 5 minutes, AM319-Resource, XIAMEN MILESGHT IOT CO.,LTD., Online) and AM308 (Milesight AM308, 5 minutes, AM308-Resource, XIAMEN MILESGHT IOT CO.,LTD., Online). At the bottom are pagination controls: Rows per page: 10, 1-2 of 2.

This screenshot shows the detailed view for device AM319. The sidebar and top navigation are identical to the previous screen. The main content area shows the device details for AM319. The title bar says "Devices > AM319". The device summary includes: Xiamen Milesight IoT Co., Ltd., AM319-Resource, Milesight AM319, and it is marked as "Online". Below are three tabs: DETAILS, INSIGHTS (selected), and SETTINGS. The INSIGHTS section displays real-time sensor data: Occupancy Available (blue icon), Temperature 24°C (red icon, labeled Poor), Humidity 36.5% (green icon, labeled OK), CO2 Level 630 ppm (green icon, labeled Excellent), and Air Quality TVOC 1 mg/m³ (green icon, labeled OK).

This screenshot shows the detailed view for device AM319, similar to the previous one but with a different chart. The sidebar and top navigation are identical. The main content area shows the device details for AM319. The title bar says "Devices > AM319". The device summary includes: Xiamen Milesight IoT Co., Ltd., AM319-Resource, Milesight AM319, and it is marked as "Online". Below are three tabs: DETAILS, INSIGHTS (selected), and SETTINGS. The INSIGHTS section displays real-time sensor data: Occupancy Available (blue icon), Temperature 24°C (red icon, labeled Poor), Humidity 36.5% (green icon, labeled OK), CO2 Level 630 ppm (green icon, labeled Excellent), and Air Quality TVOC 1 mg/m³ (green icon, labeled OK). Below this is a chart titled "Temperature" showing a graph from 12°C to 24°C over time, with a blue line indicating the current temperature trend.

With this, we can see that the data from AM308 and AM319 devices are now

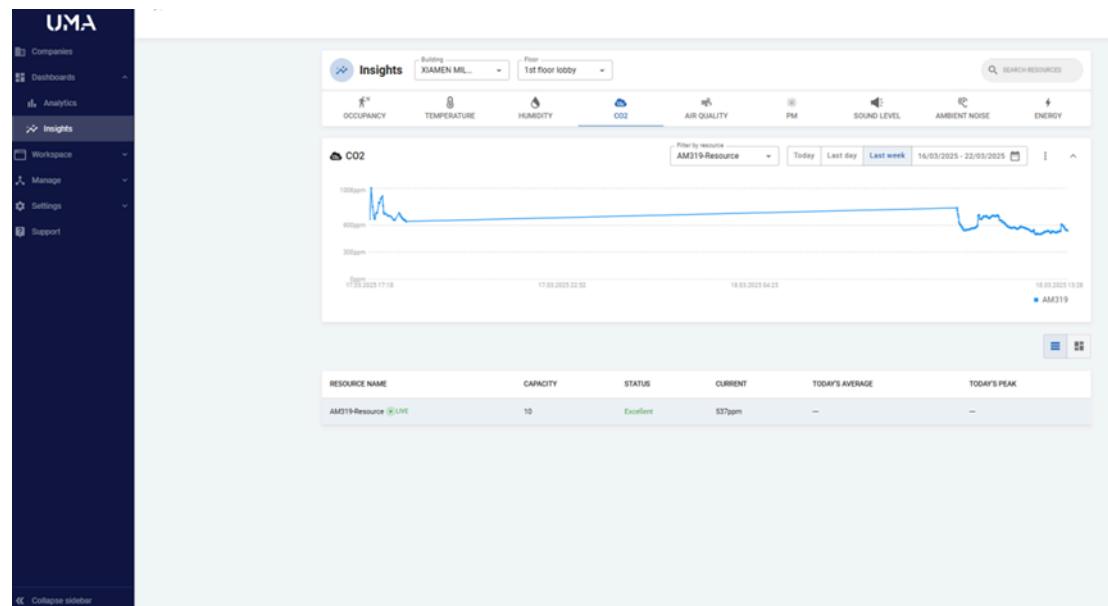
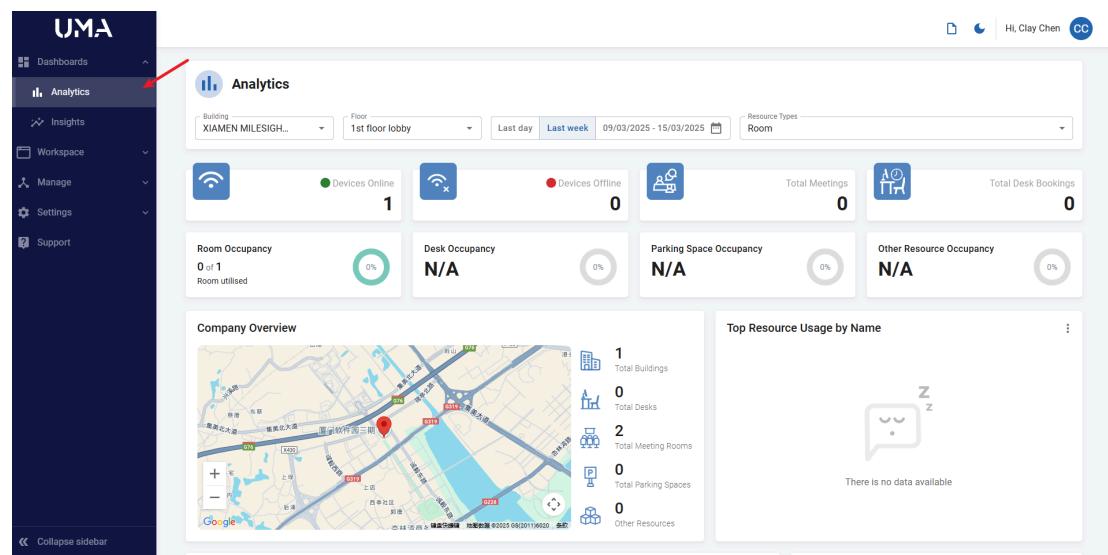
available on the platform.

The devices have been added successfully.

8. Monitor Data

Return to the homepage Dashboard.

You can now see the data from the configured Building, Floor, and Devices as shown below:



-END-