How to Integrate Lansitec NB-IoT and Cat-1 Trackers into ThingsBoard

1. Introduction

This guide shows how to send uplink data from Lansitec NB-IoT and Cat-1 trackers to ThingsBoard and decode it into telemetry.

Two MQTT connection methods are covered:

1. **Direct connection** — The tracker connects to ThingsBoard. A root rule chain decodes the received payload.
2. **External MQTT broker** — The tracker publishes to an external broker. ThingsBoard MQTT Integration subscribes to the broker, and an Uplink Converter maps and decodes each message.

The supported trackers use the same uplink message protocol, so the same decoding logic applies to all models listed below. For device-side settings and payload field definitions, refer to the applicable Lansitec datasheet or communication protocol document.

1.1 Devices Covered by This Guide

This guide covers the following Lansitec tracker models:

Connectivity	Device Model
Cat-1	Cat-1 Badge Tracker
Cat-1	Cat-1 Container Tracker
Cat-1	Cat-1 Asset Management Tracker
Cat-1	Cat-1 Helmet Sensor
Cat-1	Cat-1 Bluetooth Gateway
NB-IoT	NB-IoT Badge Tracker
NB-IoT	NB-IoT Container Tracker
NB-IoT	NB-IoT Asset Management Tracker
NB-IoT	NB-IoT Helmet Sensor
NB-IoT	NB-IoT Bluetooth Gateway

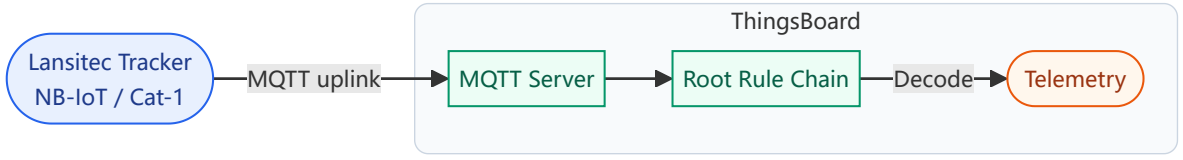
> Other Lansitec NB-IoT or Cat-1 trackers may be compatible if they use the same uplink message protocol. Verify the message format and decoded telemetry before deployment.

1.2 Choose an Integration Method

Both methods use the same Lansitec uplink protocol. Choose the direct method when ThingsBoard is the tracker's MQTT endpoint. Choose the external-broker method when the tracker already publishes to another broker or its messages are needed by multiple applications.

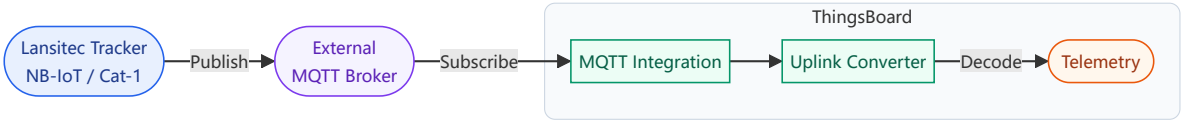
Direct Device Connection to ThingsBoard via MQTT

The tracker authenticates to the ThingsBoard MQTT server as a device. Its messages enter the configured root rule chain, where the Lansitec payload is decoded and saved as telemetry.



Device Connection to ThingsBoard via an External MQTT Broker

The tracker publishes to an external MQTT broker. ThingsBoard MQTT Integration subscribes to the device topic, and its Uplink Converter identifies the ThingsBoard device and decodes the payload before rule-chain processing.



2. Prerequisites

Before you begin, make sure you have:

- **ThingsBoard Cloud account** (Register an account if you do not already have one.)
- **Lansitec NB-IoT or Cat-1 tracker** (See Section 1.1 for compatible models.)

3. Direct Device Connection to ThingsBoard via MQTT

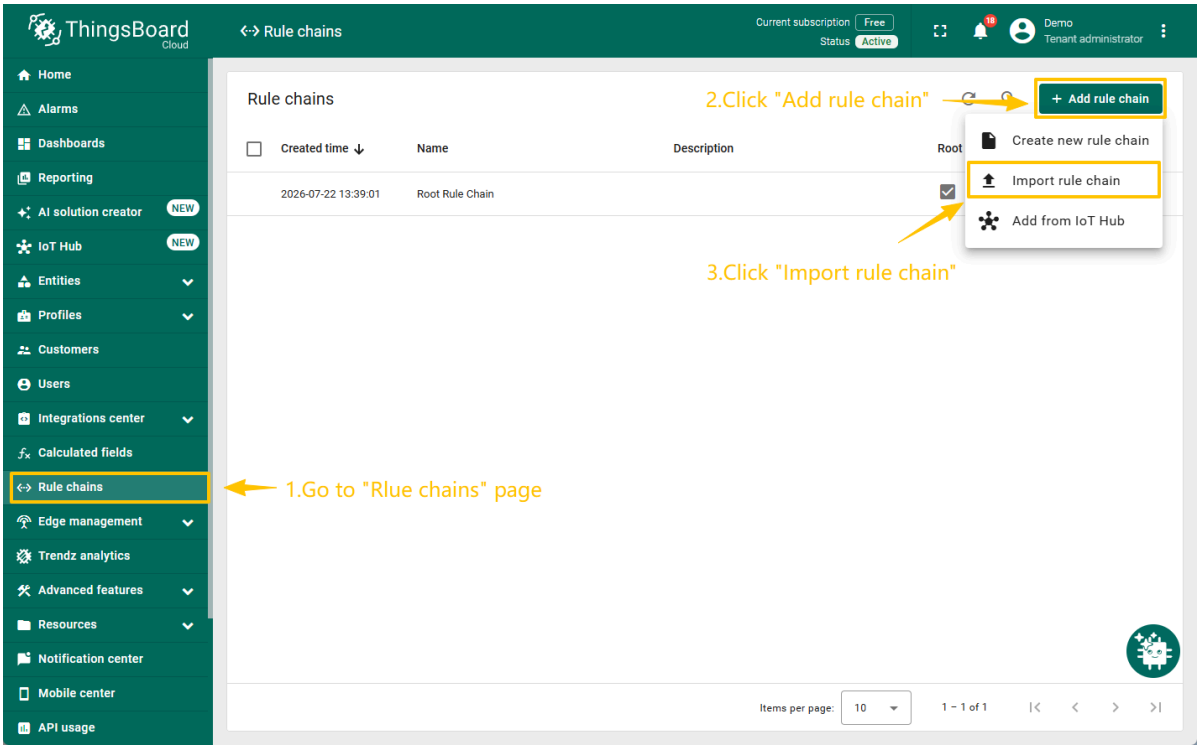
For a direct MQTT connection, complete the following steps in ThingsBoard:

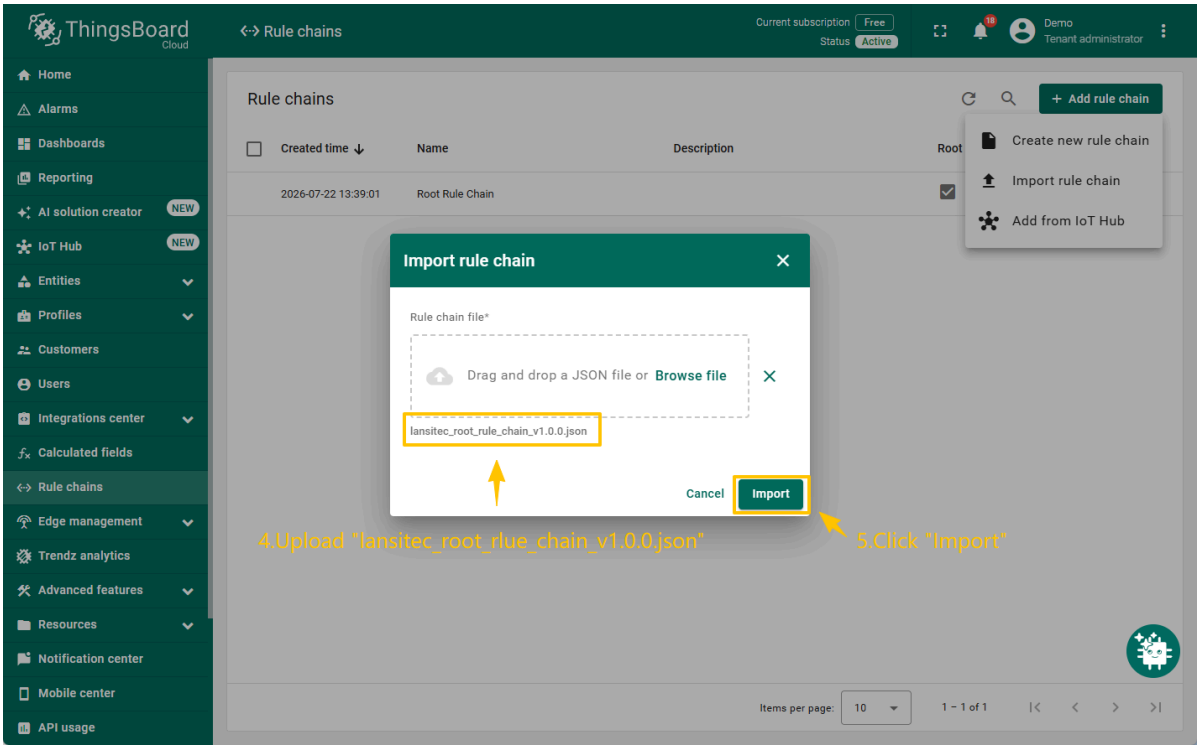
1. Import the Lansitec rule chain and set it as the root rule chain.
2. Create a device using the tracker IMEI.
3. Open **Latest telemetry** to verify the uploaded data.

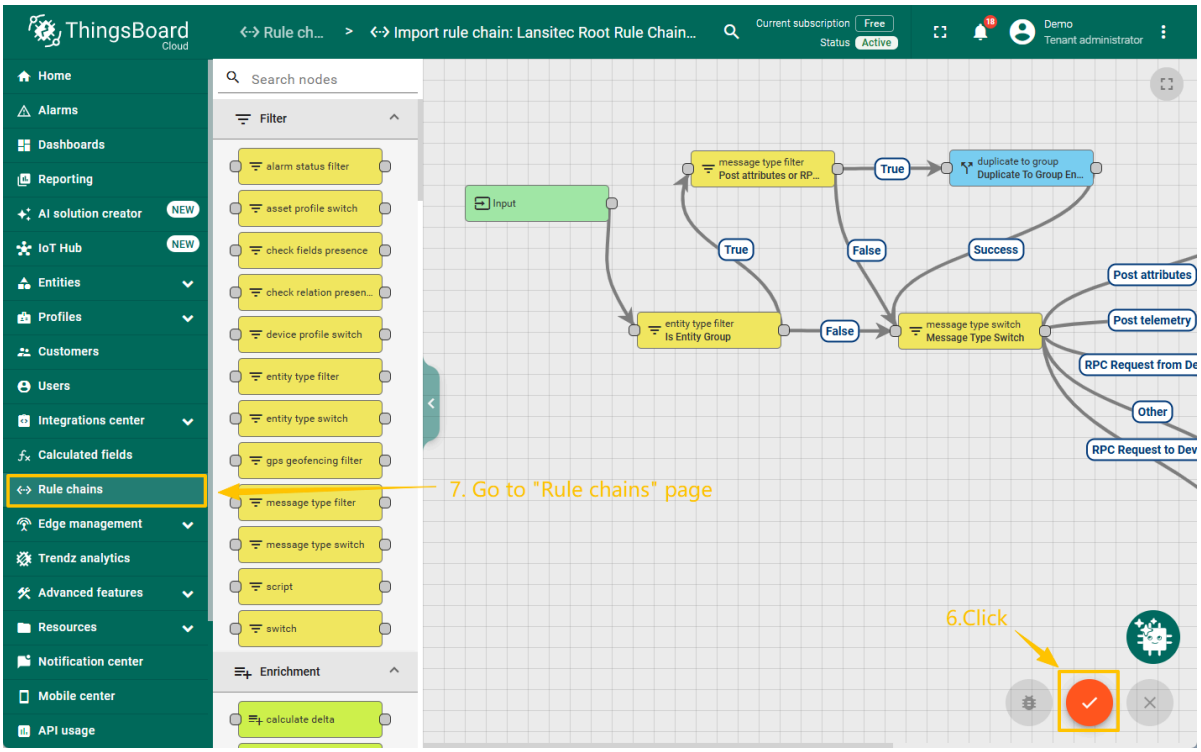
3.1 Import the Lansitec Root Rule Chain

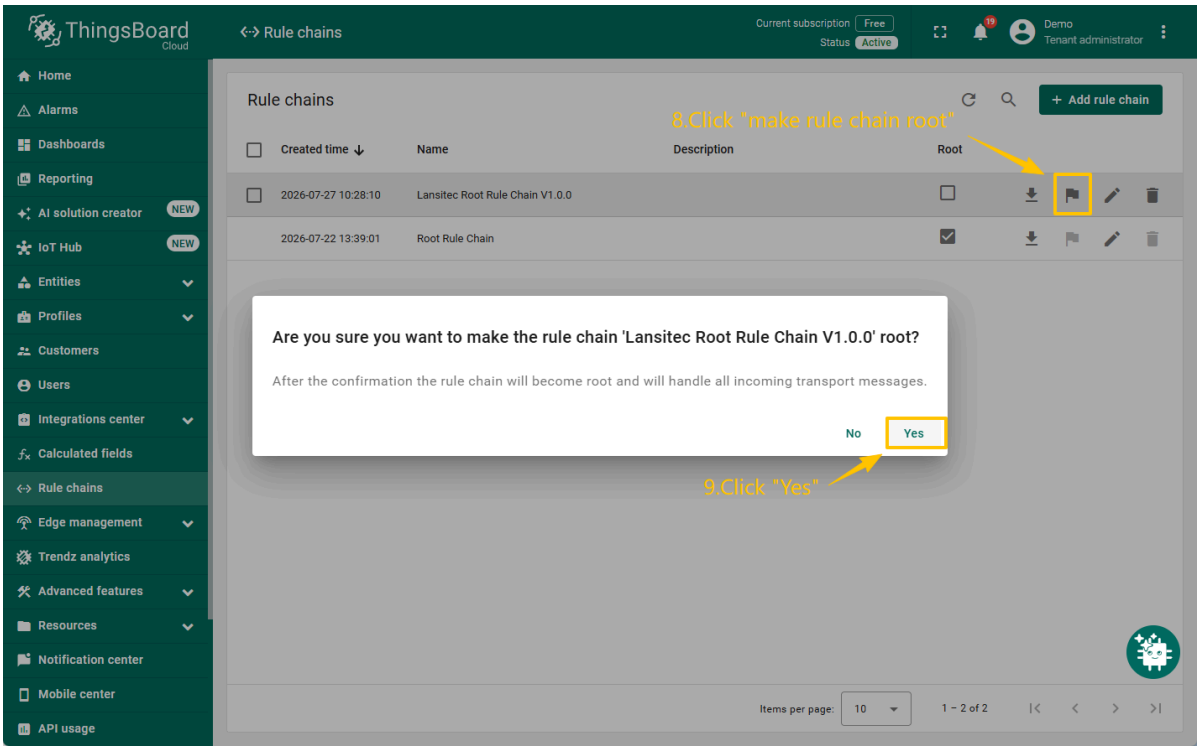
1. Go to **Rule chains**.
2. Click **Add rule chain** and select **Import rule chain**.
3. Obtain `lansitec_root_rule_chain_v1.0.0.json` from Lansitec, then upload it and click **Import**.
4. Click the check mark to save the imported rule chain.

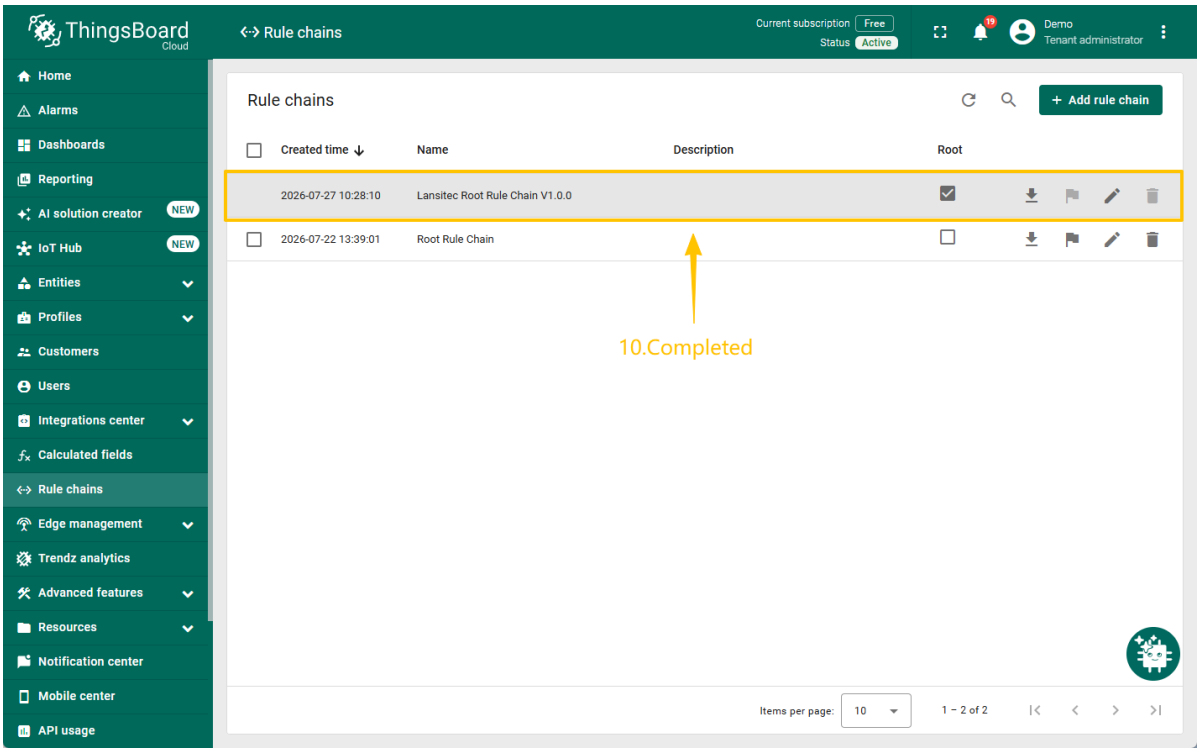
5. In the Rule chains list, click **Make rule chain root** for the imported rule chain and confirm with **Yes**.






ThingsBoard
Cloud
Rule ch...
Import rule chain: Lansitec Root Rule Chain...
Current subscription
Free
Status
Active
Demo
Tenant administrator
Home
Alarms
Dashboards
Reporting
AI solution creator
NEW
IoT Hub
NEW
Entities
Profiles
Customers
Users
Integrations center
Calculated fields
Rule chains
Edge management
Trendz analytics
Advanced features
Resources
Notification center
Mobile center
API usage
Search nodes
Filter
alarm status filter
asset profile switch
check fields presence
check relation presen...
device profile switch
entity type filter
entity type switch
gps geofencing filter
message type filter
message type switch
script
switch
Enrichment
calculate delta
Input
message type filter
Post attributes or RP...
True
duplicate to group
Duplicate To Group En...
True
False
Success
entity type filter
Is Entity Group
False
message type switch
Message Type Switch
Post attributes
Post telemetry
RPC Request from De
Other
RPC Request to Dev
7. Go to "Rule chains" page
6.Click

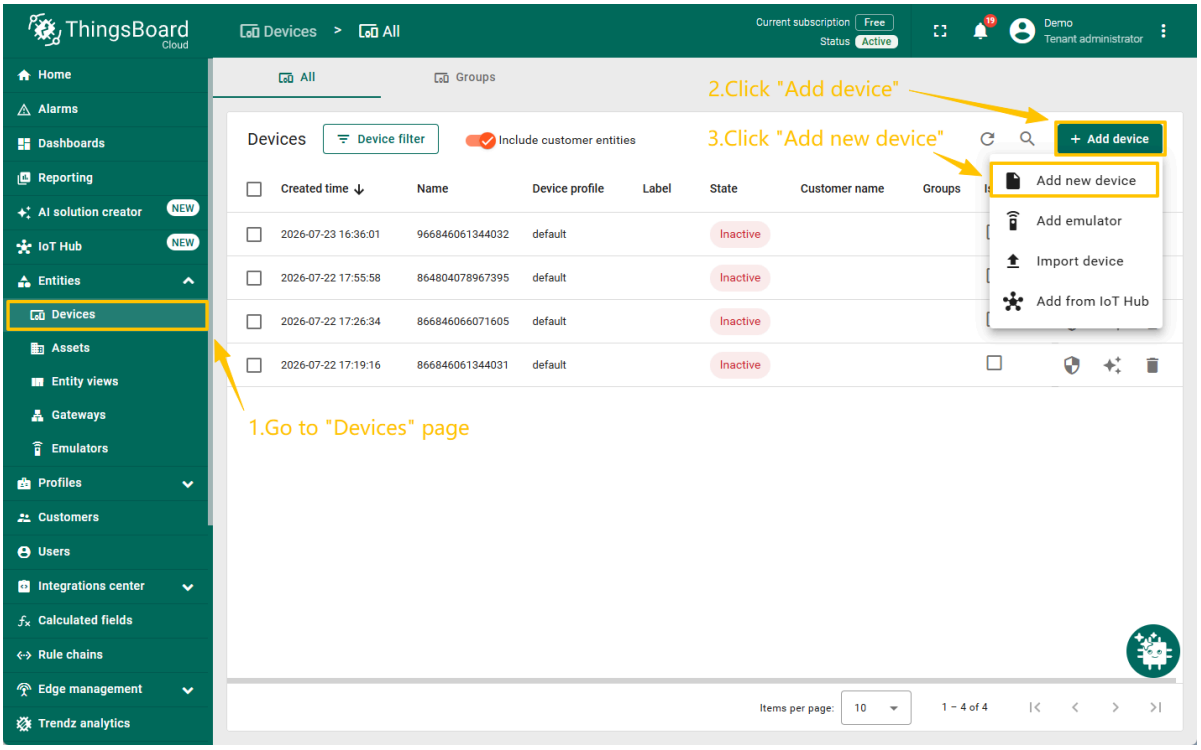

ThingsBoard
Cloud
Rule chains
Current subscription
Free
Status
Active
Demo
Tenant administrator
Home
Alarms
Dashboards
Reporting
AI solution creator
NEW
IoT Hub
NEW
Entities
Profiles
Customers
Users
Integrations center
Calculated fields
Rule chains
Edge management
Trendz analytics
Advanced features
Resources
Notification center
Mobile center
API usage
Rule chains
+ Add rule chain
8.Click "make rule chain root"
Created time
Name
Description
Root
2026-07-27 10:28:10
Lansitec Root Rule Chain V1.0.0
2026-07-22 13:39:01
Root Rule Chain
Are you sure you want to make the rule chain 'Lansitec Root Rule Chain V1.0.0' root?
After the confirmation the rule chain will become root and will handle all incoming transport messages.
No
Yes
9.Click "Yes"
Items per page:
10
1 – 2 of 2

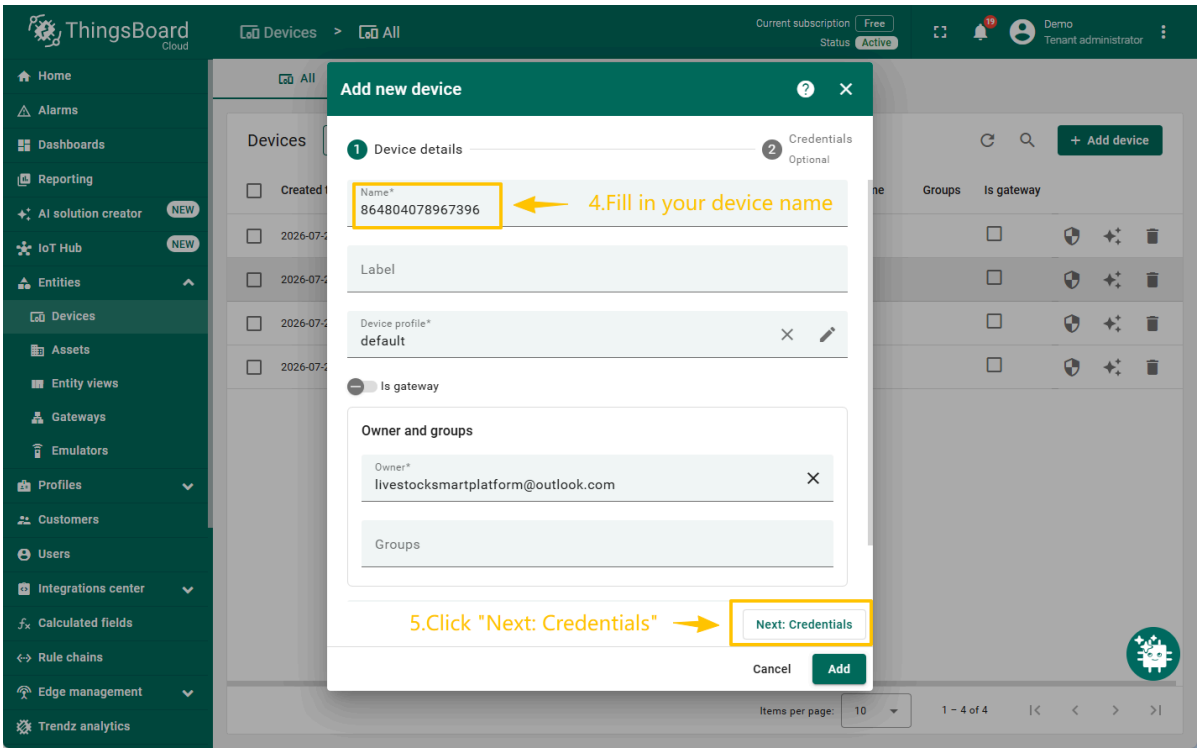


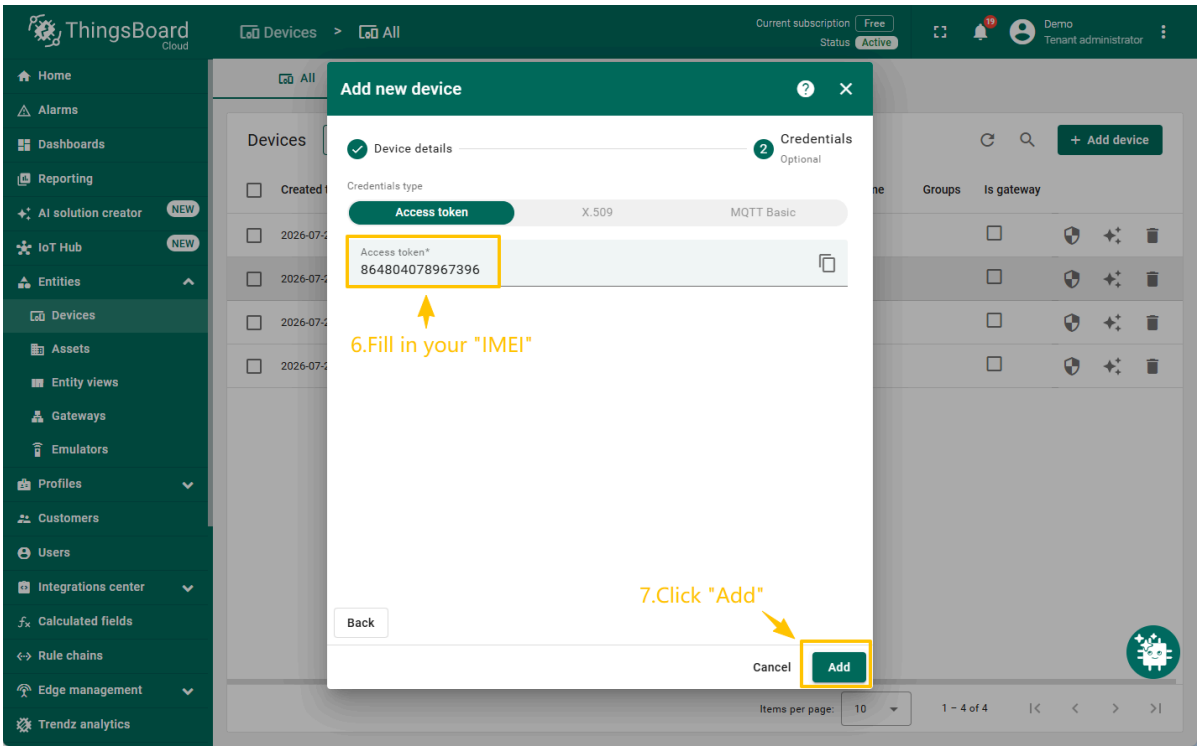
3.2 Create a Device in ThingsBoard

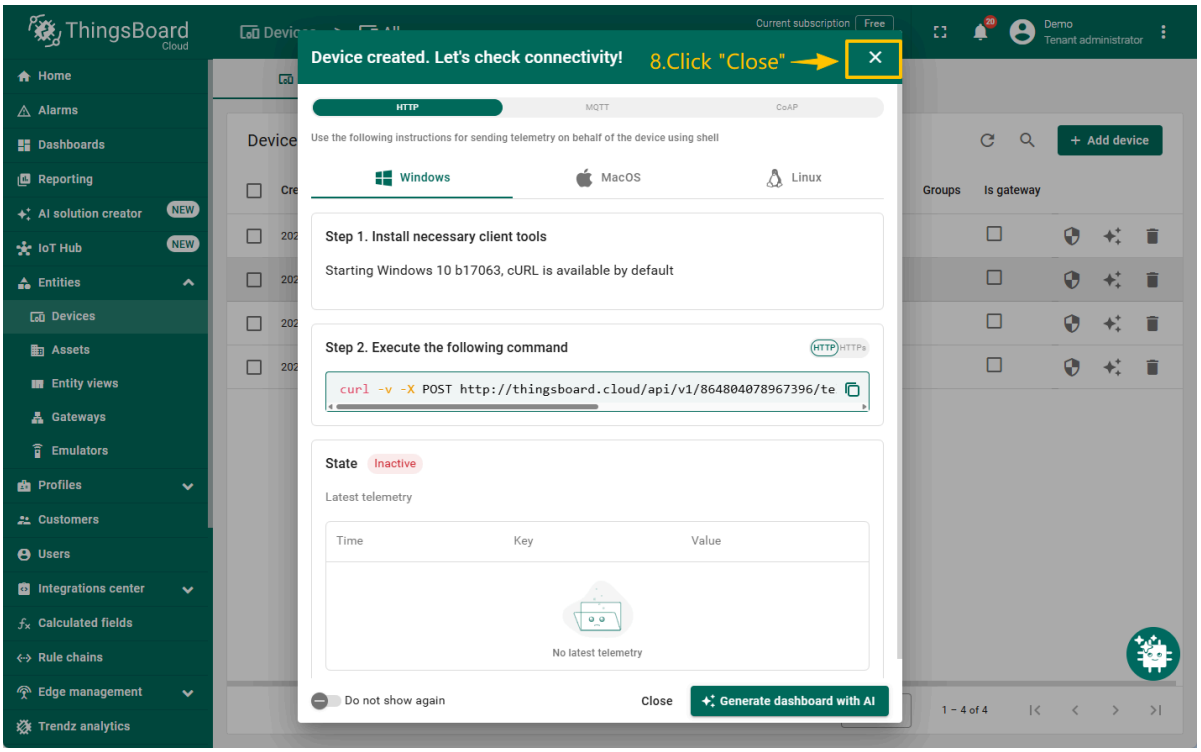
1. Go to **Entities** → **Devices**.
2. Click **Add device** and select **Add new device**.
3. Enter the tracker IMEI as the device name, then click **Next: Credentials**.
4. Keep **Access token** selected and enter the same IMEI as the Access Token.
5. Click **Add**, then close the connectivity dialog.

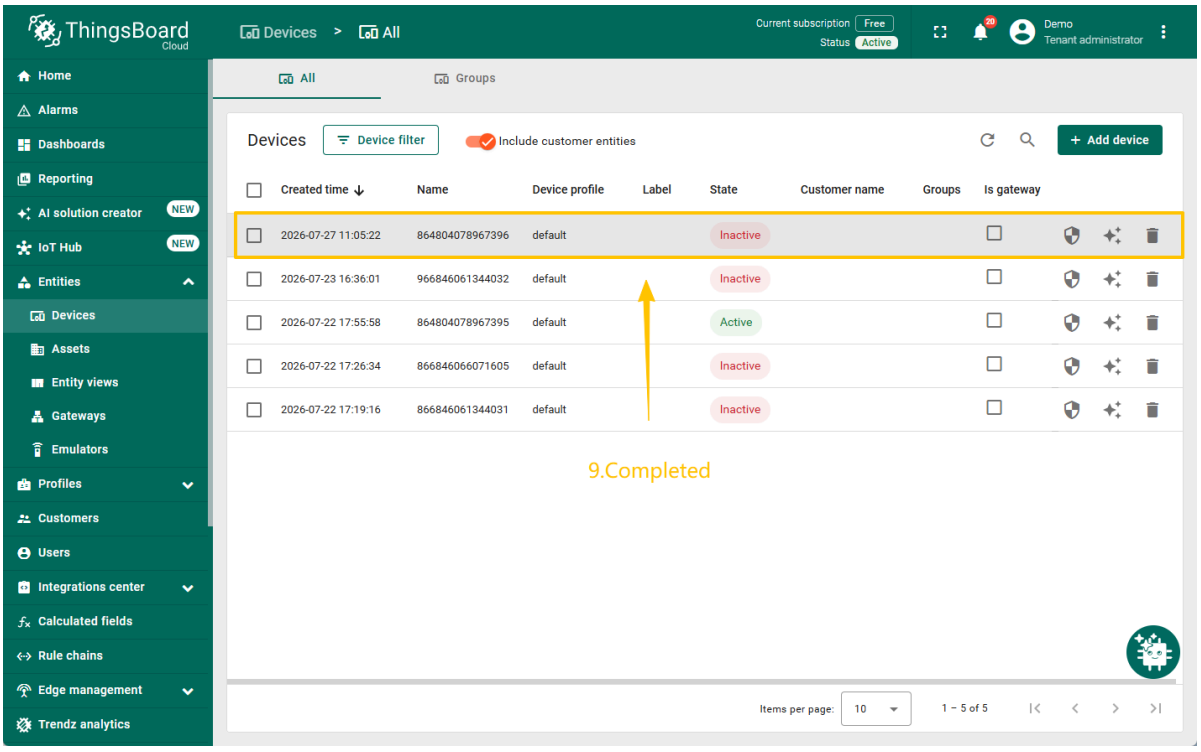
> The Access Token in ThingsBoard must match the token configured on the tracker.




Add new device
Device details
Credentials
Optional
Name*
864804078967396
4.Fill in your device name
Label
Device profile*
default
Is gateway
Owner and groups
Owner*
livestocksmartplatform@outlook.com
Groups
5.Click "Next: Credentials"
Next: Credentials
Cancel
Add

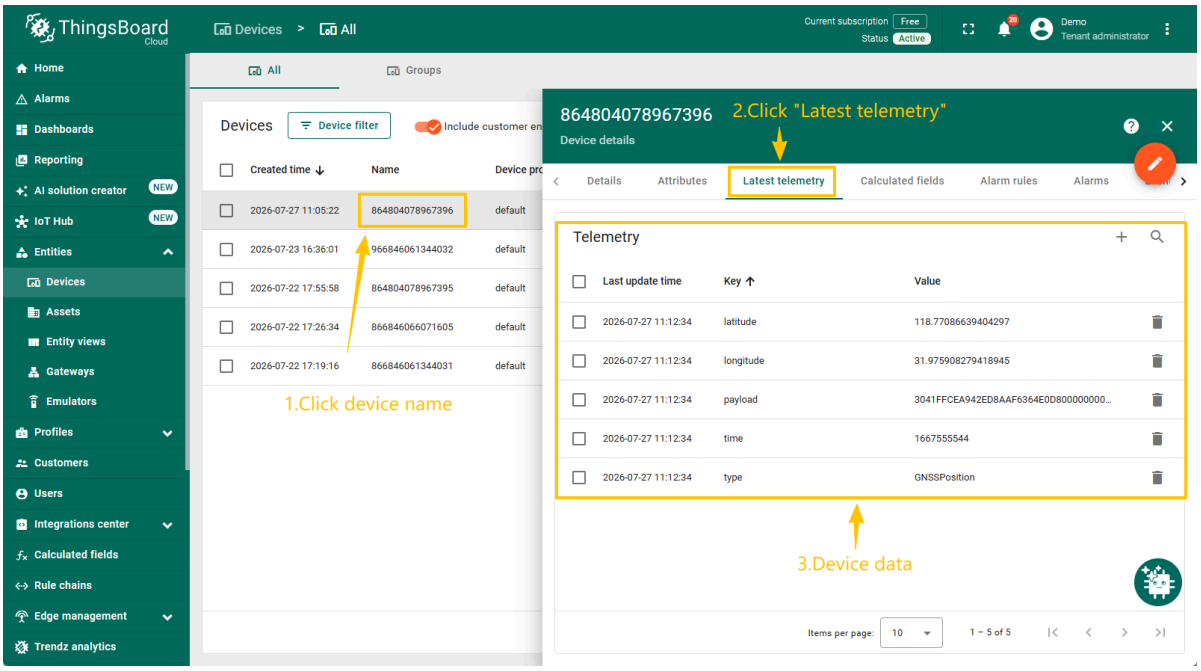

Add new device
Device details
Credentials
Optional
Credentials type
Access token
X.509
MQTT Basic
Access token*
864804078967396
6.Fill in your "IMEI"
7.Click "Add"
Back
Cancel
Add





3.3 View Device Data

1. In **Devices**, click the device name.
2. Open **Latest telemetry**.
3. Confirm that decoded telemetry is displayed. In the example below, the tracker has uploaded latitude, longitude, payload, time, and message type.



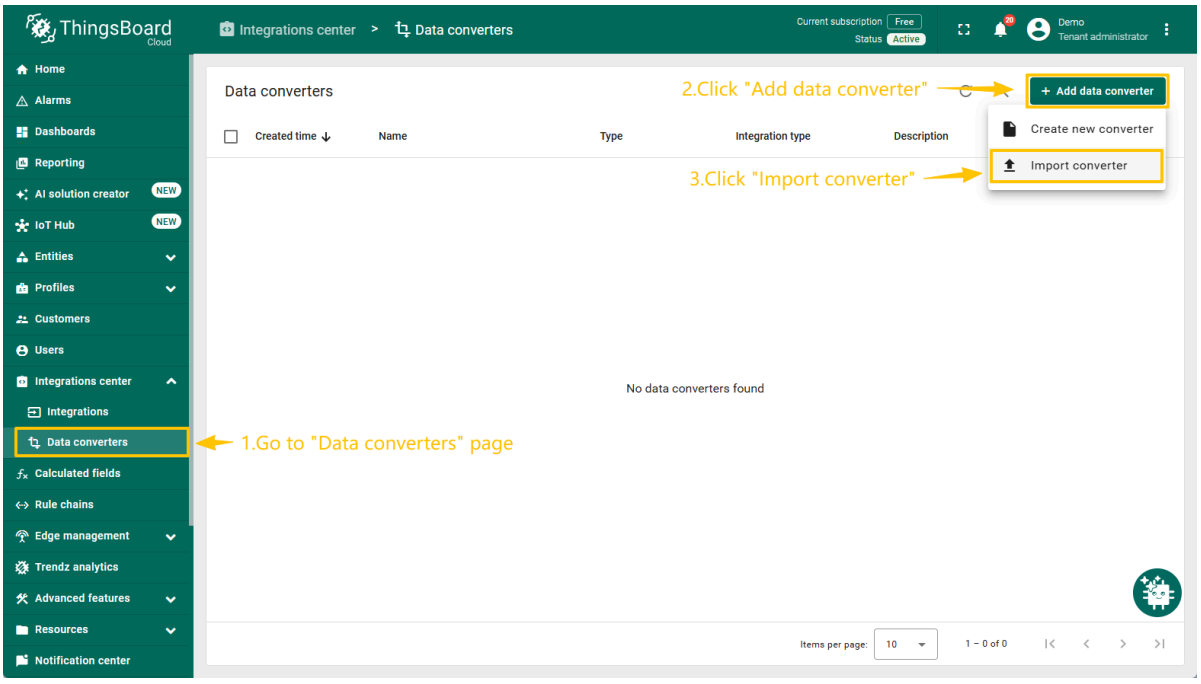
4. Device Connection to ThingsBoard via an External MQTT Broker

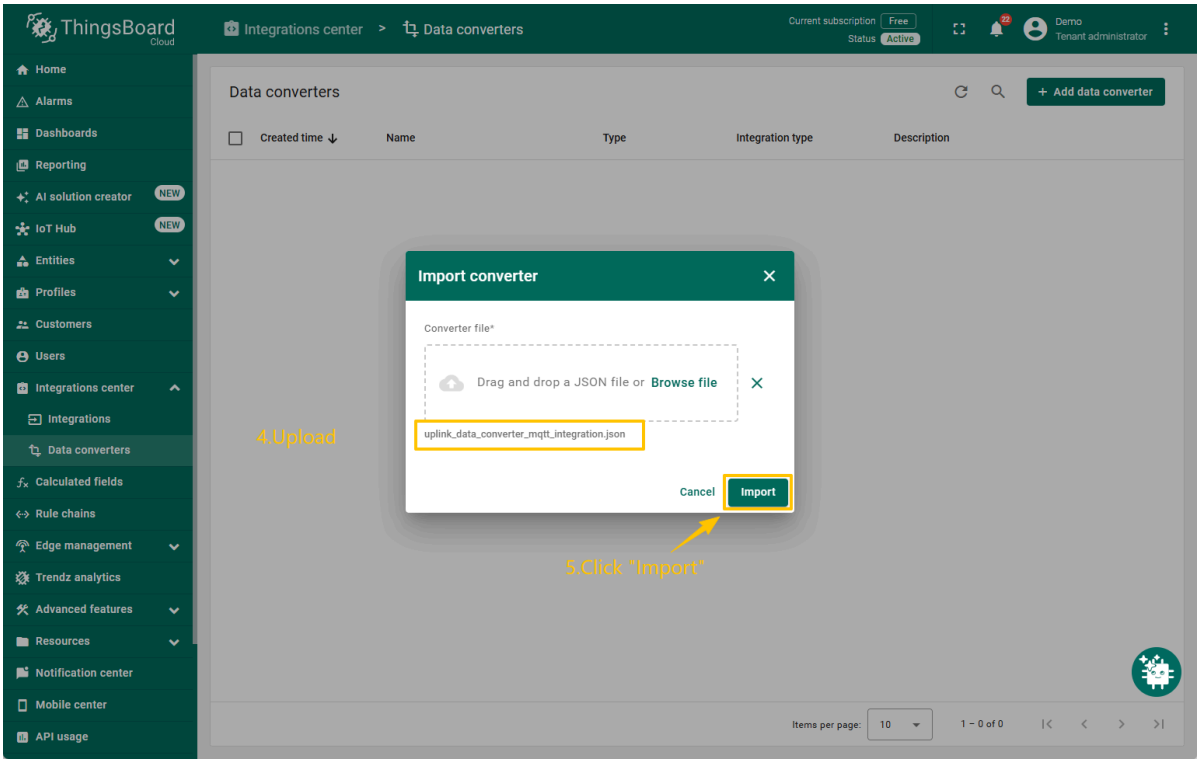
Use this method when the tracker publishes to an external MQTT broker. Complete the following steps in ThingsBoard:

1. Import the Lansitec MQTT Uplink Converter.
2. Create an MQTT Integration that subscribes to the device topic.
3. Create a ThingsBoard device using the tracker IMEI.

4.1 Configure the Uplink Converter

1. Go to **Integrations center** → **Data converters**.
2. Click **Add data converter** and select **Import converter**.
3. Obtain `uplink_data_converter_mqtt_integration.json` from Lansitec, then upload it and click **Import**.
4. Confirm that **Uplink Data Converter (MQTT Integration)** appears in the Data converters list.


ThingsBoard
Cloud
Integrations center > Data converters
Current subscription Free
Status Active
Demo
Tenant administrator
Home
Alarms
Dashboards
Reporting
AI solution creator NEW
IoT Hub NEW
Entities
Profiles
Customers
Users
Integrations center
Integrations
Data converters
Calculated fields
Rule chains
Edge management
Trendz analytics
Advanced features
Resources
Notification center
Data converters
2.Click "Add data converter"
+ Add data converter
Create new converter
Import converter
3.Click "Import converter"
Created time
Name
Type
Integration type
Description
No data converters found
1.Go to "Data converters" page
Items per page: 10
1 – 0 of 0


ThingsBoard
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Integrations center > Data converters
Current subscription Free
Status Active
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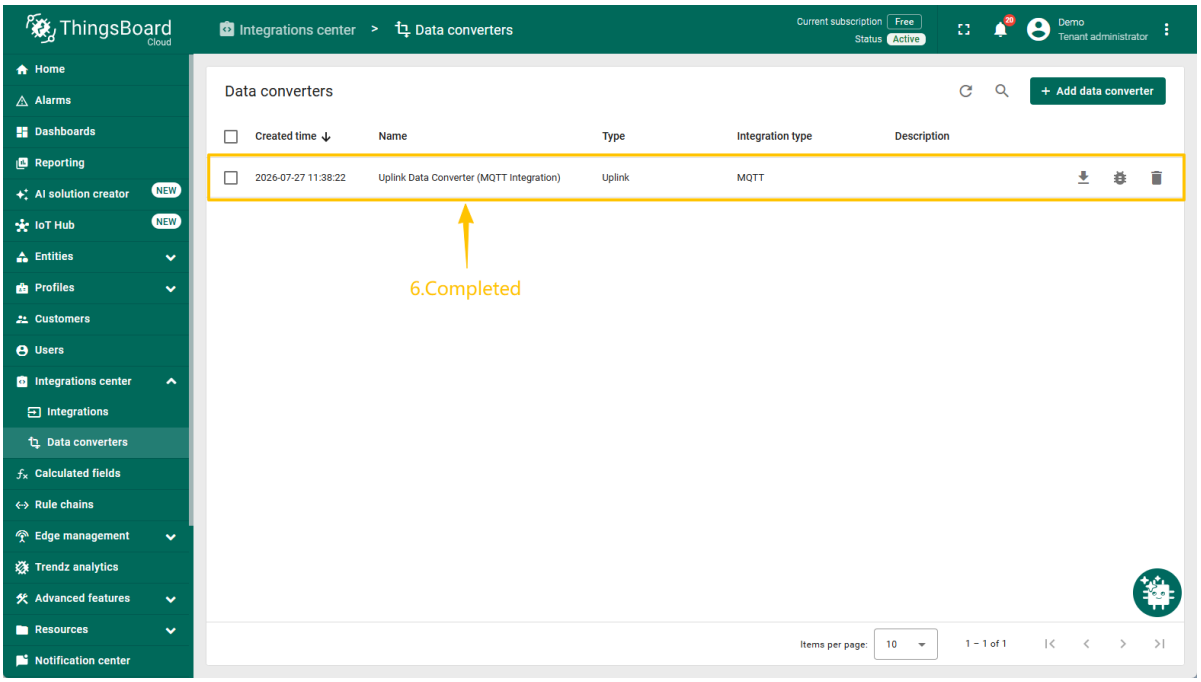
Tenant administrator
Home
Alarms
Dashboards
Reporting
AI solution creator NEW
IoT Hub NEW
Entities
Profiles
Customers
Users
Integrations center
Integrations
Data converters
Calculated fields
Rule chains
Edge management
Trendz analytics
Advanced features
Resources
Notification center
Mobile center
API usage
Data converters
+ Add data converter
Created time
Name
Type
Integration type
Description
Import converter
Converter file*
Drag and drop a JSON file or Browse file
uplink_data_converter_mqtt_integration.json
4.Upload
Cancel
Import
5.Click "Import"
Items per page: 10
1 – 0 of 0



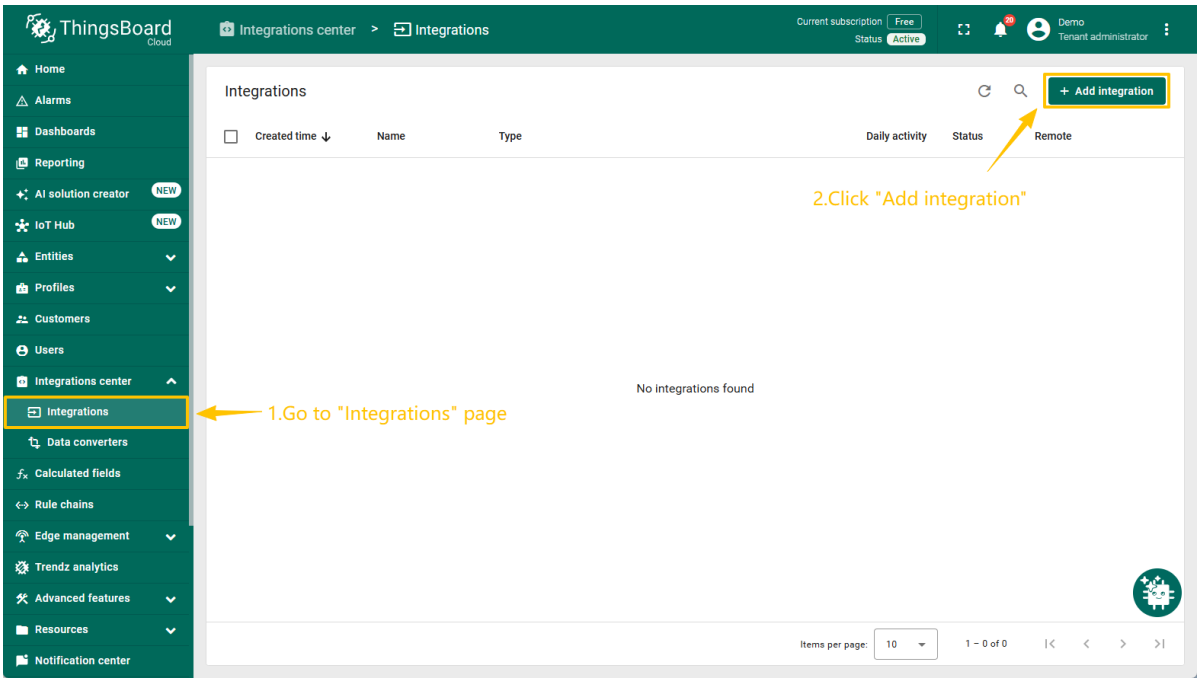
4.2 Configure the MQTT Integration

1. Go to **Integrations center** → **Integrations**, then click **Add integration**.
2. Select **MQTT** as the integration type.
3. Enter an integration name, disable **Allow create devices or assets**, and click **Next**.
4. Under **Uplink data converter**, click **Select existing**, select **Uplink Data Converter (MQTT Integration)**, and click **Next**.
5. Click **Skip** for the Downlink data converter.
6. Enter the external MQTT broker host, port, credentials, and device topic filter. Click **Add** to create the integration.

> The topic filter `lansitec/pub/#` subscribes to messages from all Lansitec trackers. Each tracker should publish to a topic whose final segment is its IMEI, for example, `lansitec/pub/<IMEI>`.

7. Confirm that the new integration is listed as **Active**.

> Disabling **Allow create devices or assets** prevents ThingsBoard from automatically creating devices from broker messages. Create only the required devices in the next step.


ThingsBoard
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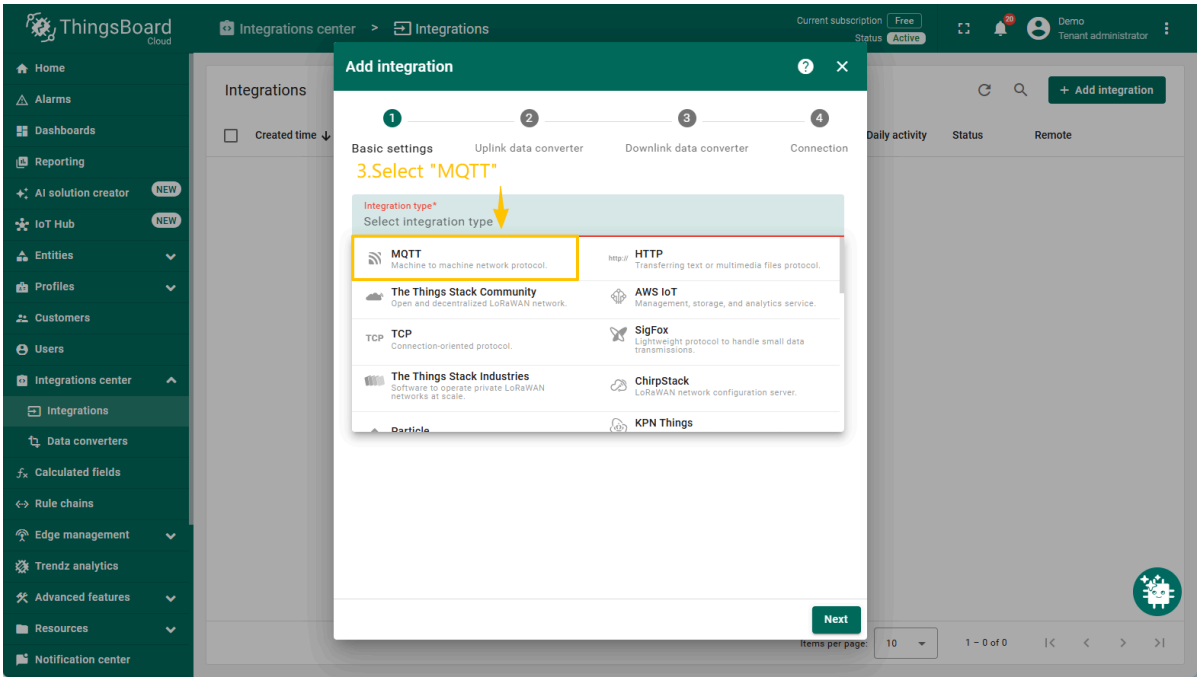
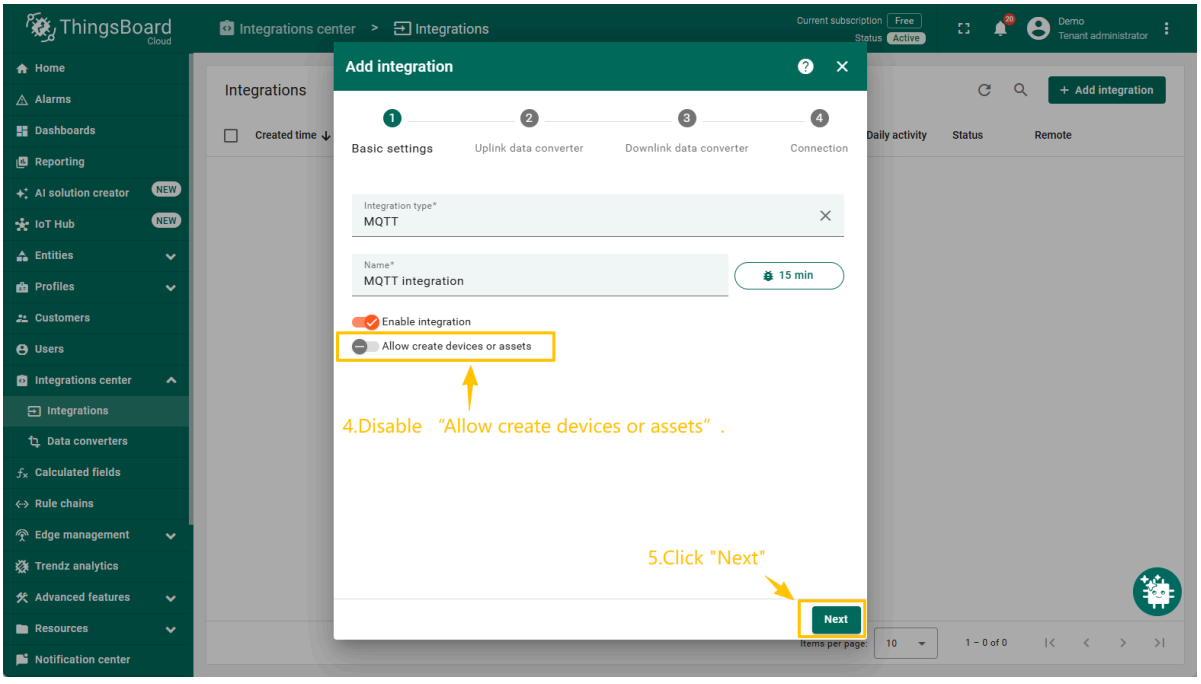
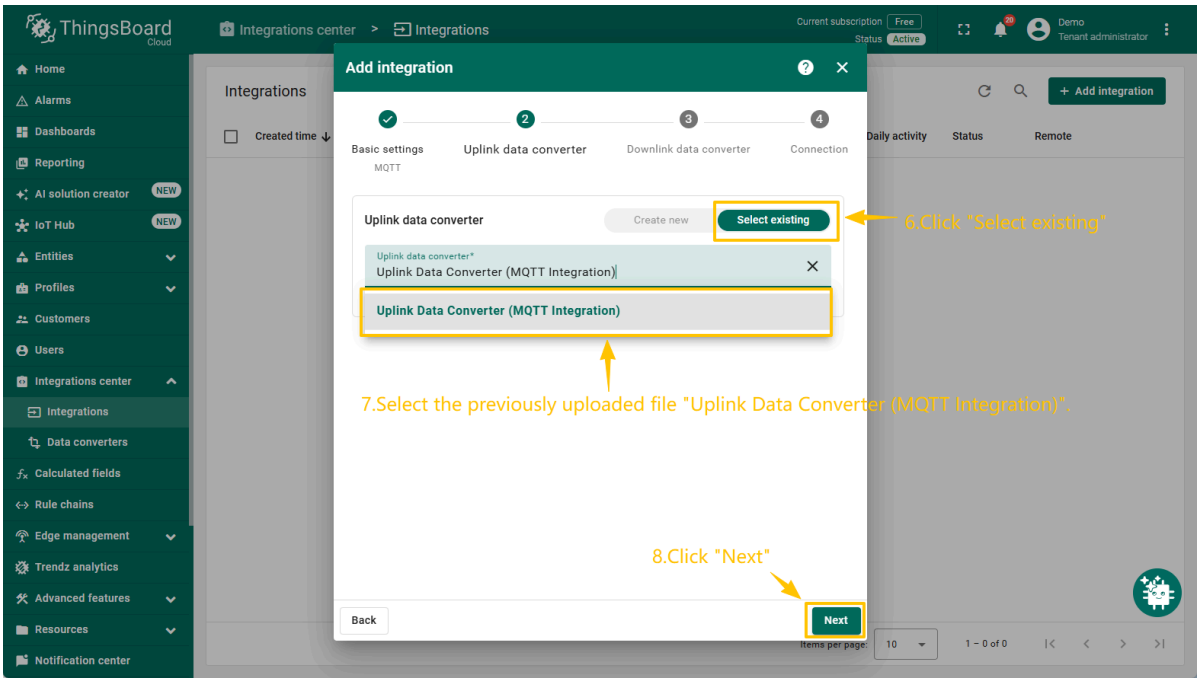
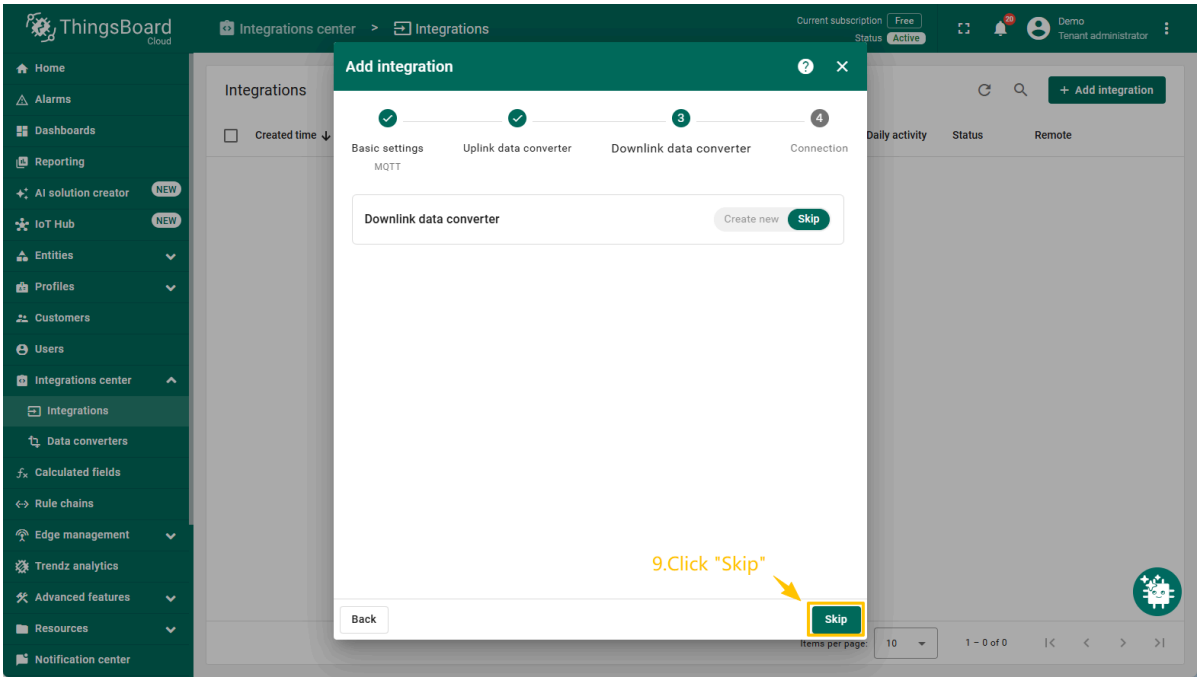
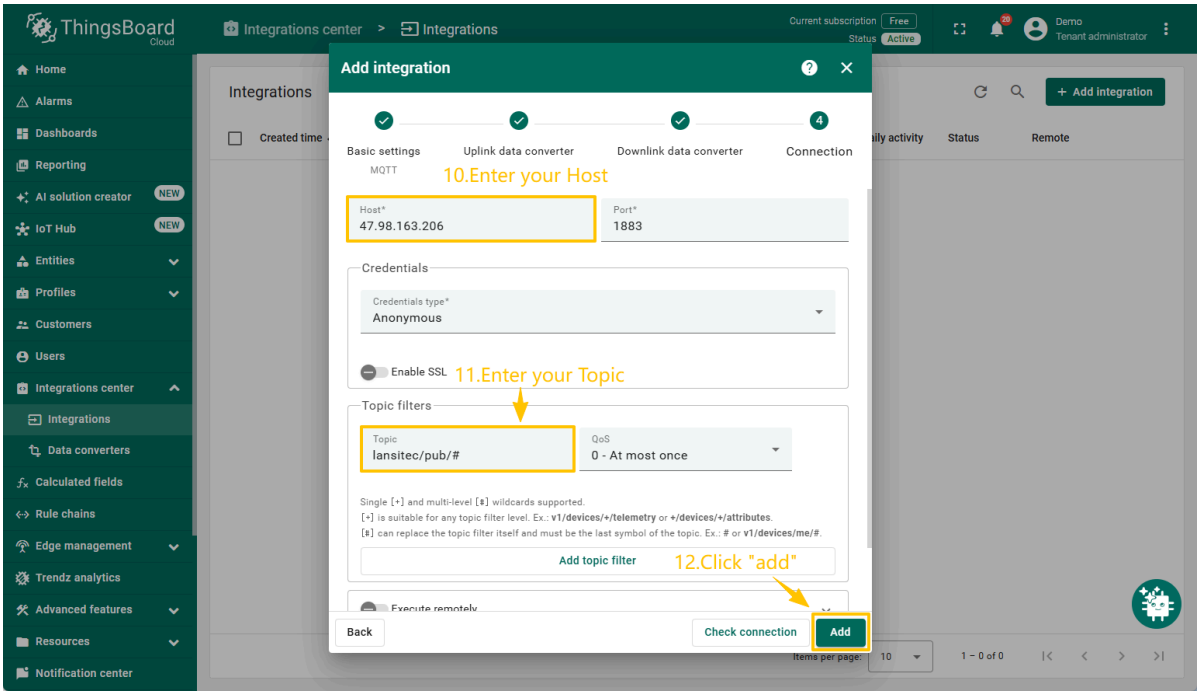
Integrations center > Integrations
Current subscription Free
Status Active
Demo
Tenant administrator
Home
Alarms
Dashboards
Reporting
AI solution creator NEW
IoT Hub NEW
Entities
Profiles
Customers
Users
Integrations center
Integrations
Data converters
Calculated fields
Rule chains
Edge management
Trendz analytics
Advanced features
Resources
Notification center
Integrations
+ Add integration
Created time
Name
Type
Daily activity
Status
Remote
No integrations found
1.Go to "Integrations" page
2.Click "Add integration"
Items per page: 10
1 – 0 of 0

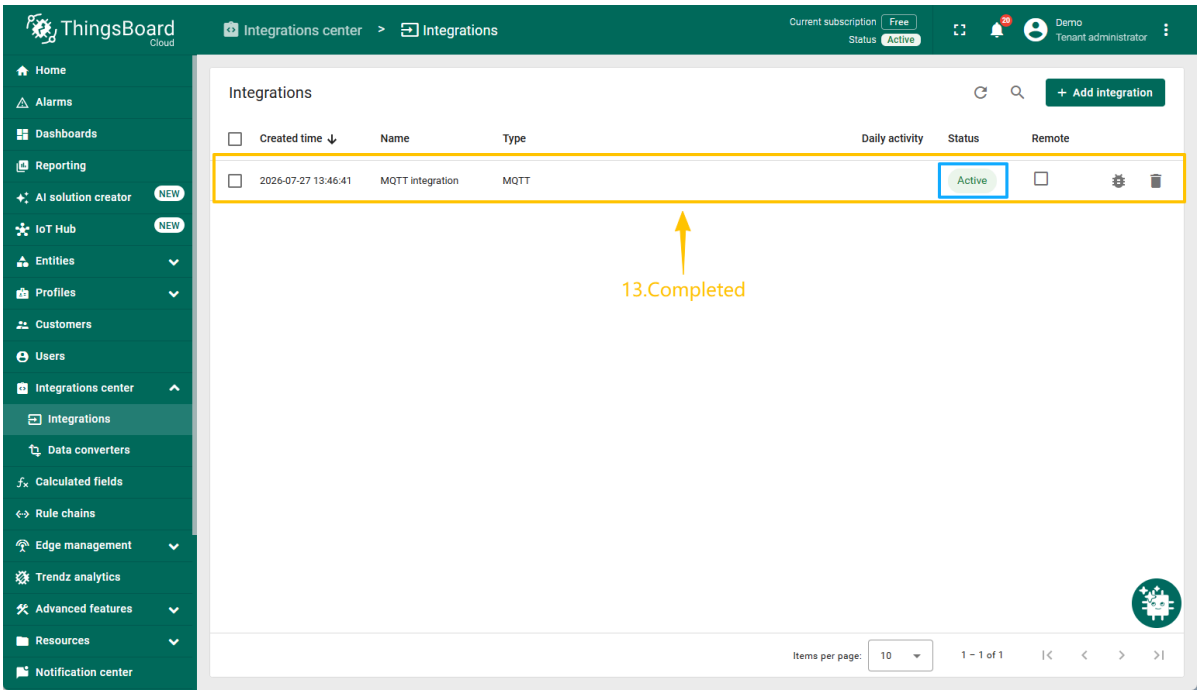

Add integration
Basic settings
Uplink data converter
Downlink data converter
Connection
3.Select "MQTT"
Integration type*
Select integration type
MQTT
Machine to machine network protocol.
HTTP
Transferring text or multimedia files protocol.
The Things Stack Community
Open and decentralized LoRaWAN network.
AWS IoT
Management, storage, and analytics service.
TCP
Connection-oriented protocol.
SigFox
Lightweight protocol to handle small data transmissions.
The Things Stack Industries
Software to operate private LoRaWAN networks at scale.
ChirpStack
LoRaWAN network configuration server.
KPN Things
Next


Add integration
Basic settings
Uplink data converter
Downlink data converter
Connection
Integration type*
MQTT
Name*
MQTT integration
15 min
Enable integration
Allow create devices or assets
4.Disable "Allow create devices or assets".
5.Click "Next"
Next


Add integration
Basic settings
MQTT
Uplink data converter
Downlink data converter
Connection
Uplink data converter
Create new
Select existing
6.Click "Select existing"
Uplink data converter*
Uplink Data Converter (MQTT Integration)
Uplink Data Converter (MQTT Integration)
7.Select the previously uploaded file "Uplink Data Converter (MQTT Integration)".
8.Click "Next"
Back
Next

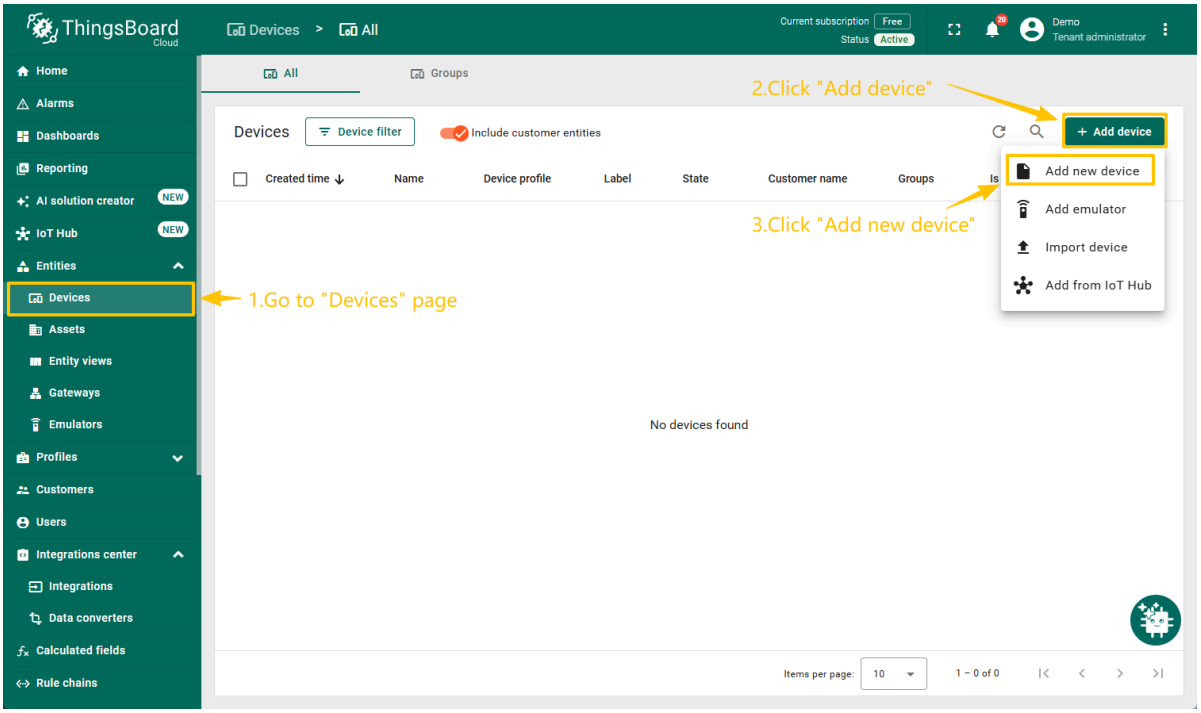

Add integration
Basic settings
MQTT
Uplink data converter
Downlink data converter
Connection
Downlink data converter
Create new
Skip
9.Click "Skip"
Back
Skip

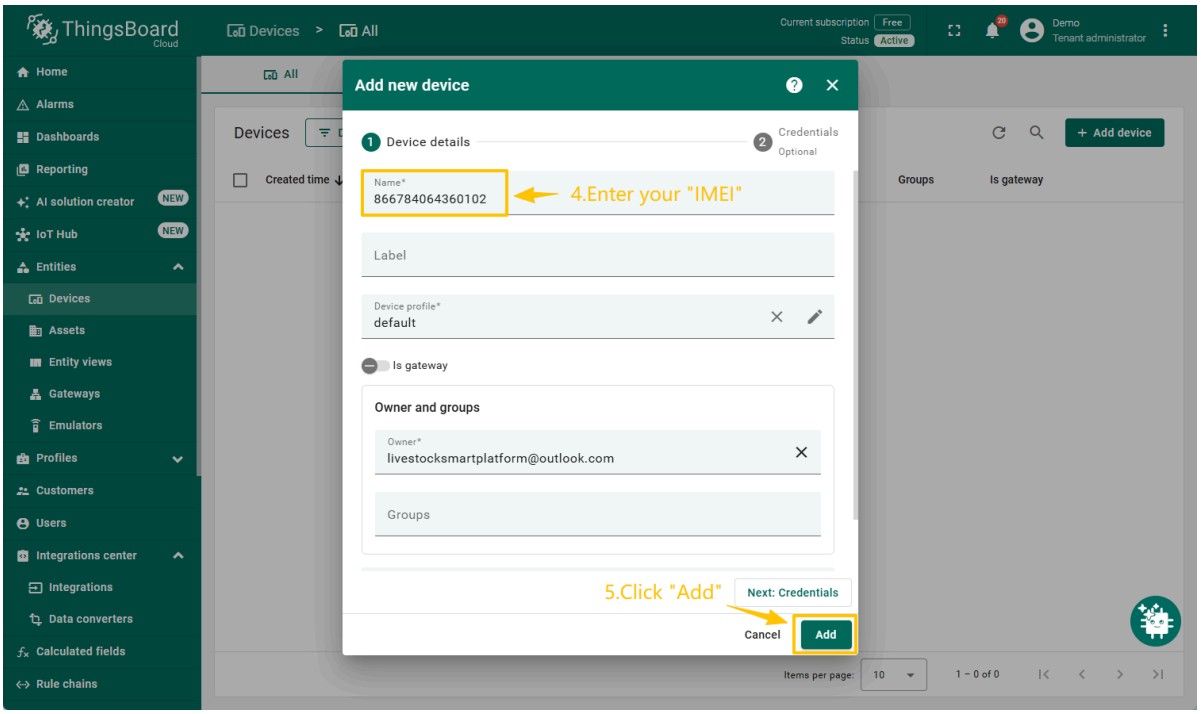

Add integration
Basic settings
MQTT
Uplink data converter
Downlink data converter
Connection
10.Enter your Host
Host*
47.98.163.206
Port*
1883
Credentials
Credentials type*
Anonymous
Enable SSL
11.Enter your Topic
Topic filters
Topic
lansitec/pub/#
QoS
0 - At most once
Add topic filter
12.Click "add"
Back
Check connection
Add

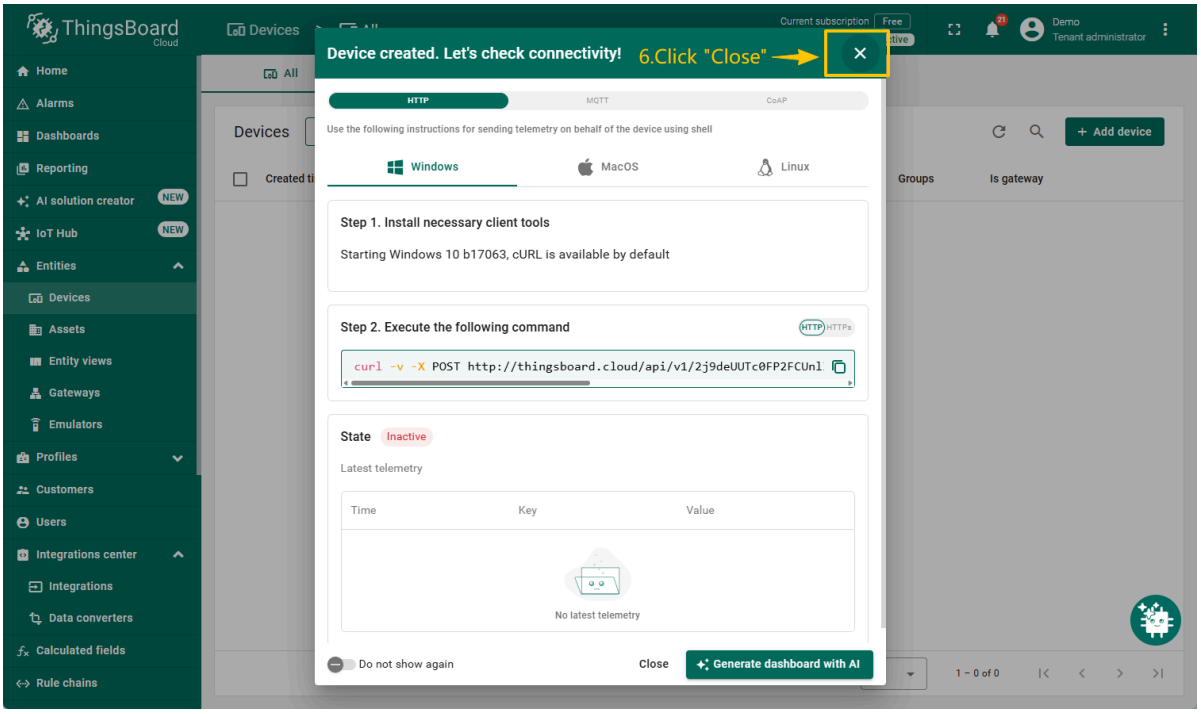


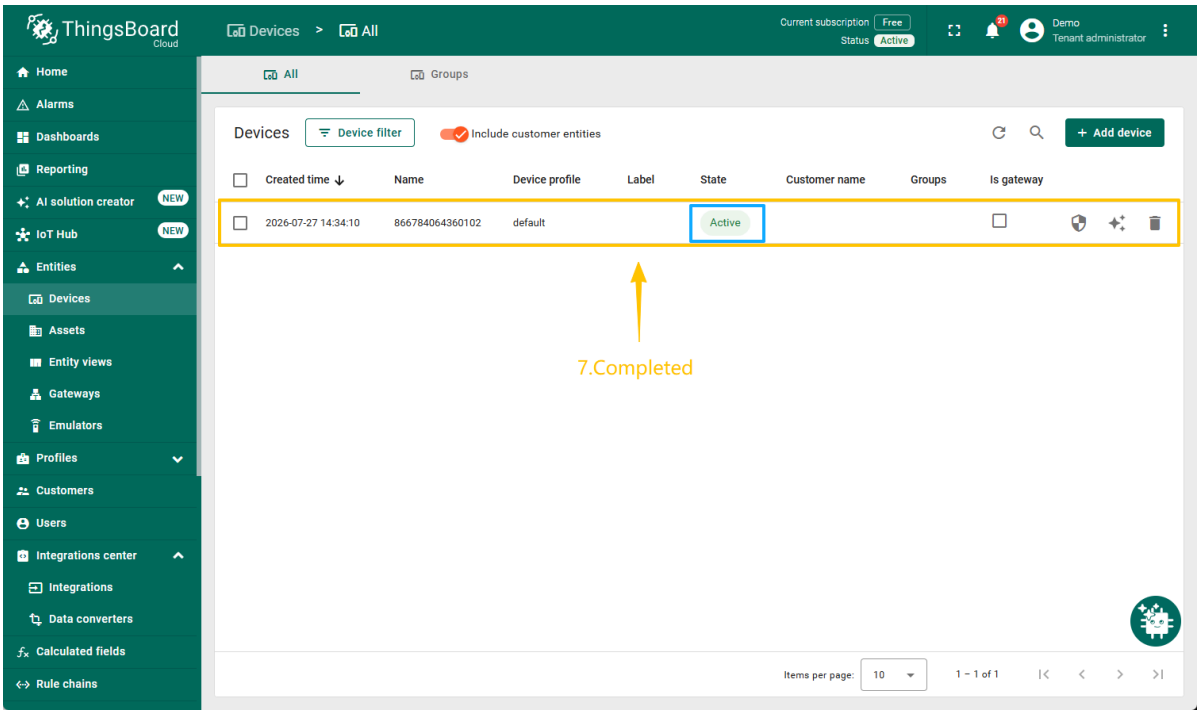
4.3 Create a Device in ThingsBoard

1. Go to **Entities** → **Devices**.
2. Click **Add device** and select **Add new device**.
3. Enter the tracker IMEI as the device name, then click **Add**.
4. Close the connectivity dialog and confirm that the device becomes **Active** after it receives data from the MQTT Integration.



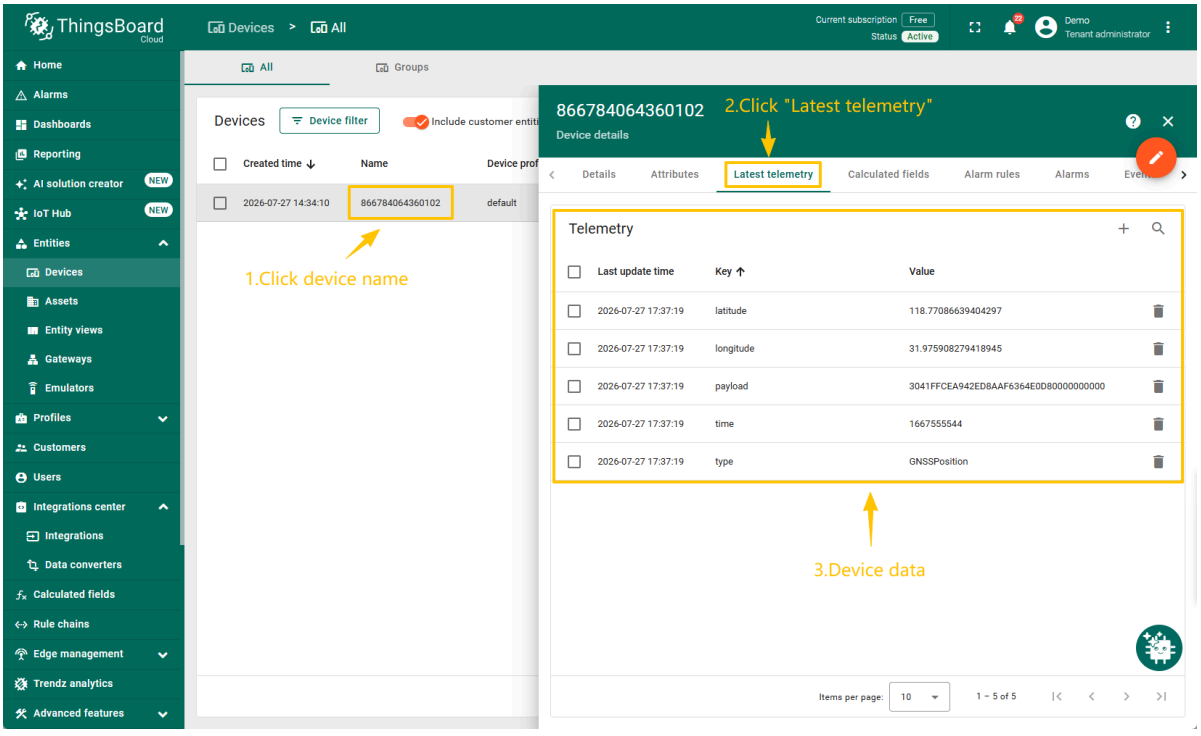

Add new device
Device details
Credentials
Optional
Name*
866784064360102
4.Enter your "IMEI"
Label
Device profile*
default
Is gateway
Owner and groups
Owner*
livestocksmartplatform@outlook.com
Groups
5.Click "Add"
Next: Credentials
Cancel
Add
Devices
+ Add device
Created time
Groups
Is gateway
Items per page: 10
1 – 0 of 0


Device created. Let's check connectivity!
6.Click "Close"
HTTP
MQTT
CoAP
Use the following instructions for sending telemetry on behalf of the device using shell
Windows
MacOS
Linux
Step 1. Install necessary client tools
Starting Windows 10 b17063, cURL is available by default
Step 2. Execute the following command
curl -v -X POST http://thingsboard.cloud/api/v1/2j9deUUTc0FP2FCUnl
State
Inactive
Latest telemetry
Time
Key
Value
No latest telemetry
Do not show again
Close
Generate dashboard with AI



4.4 View Device Data

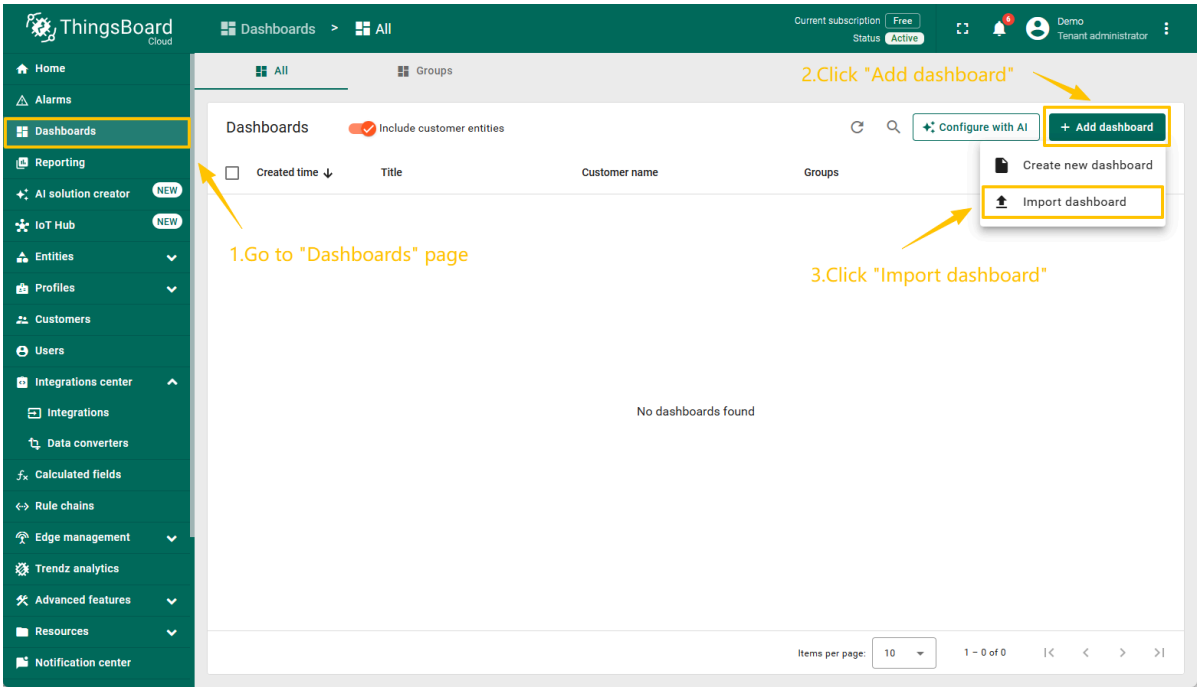
1. In **Devices**, click the device name.
2. Open **Latest telemetry**.
3. Confirm that the decoded telemetry is displayed. In the example below, the device has uploaded latitude, longitude, payload, time, and message type.

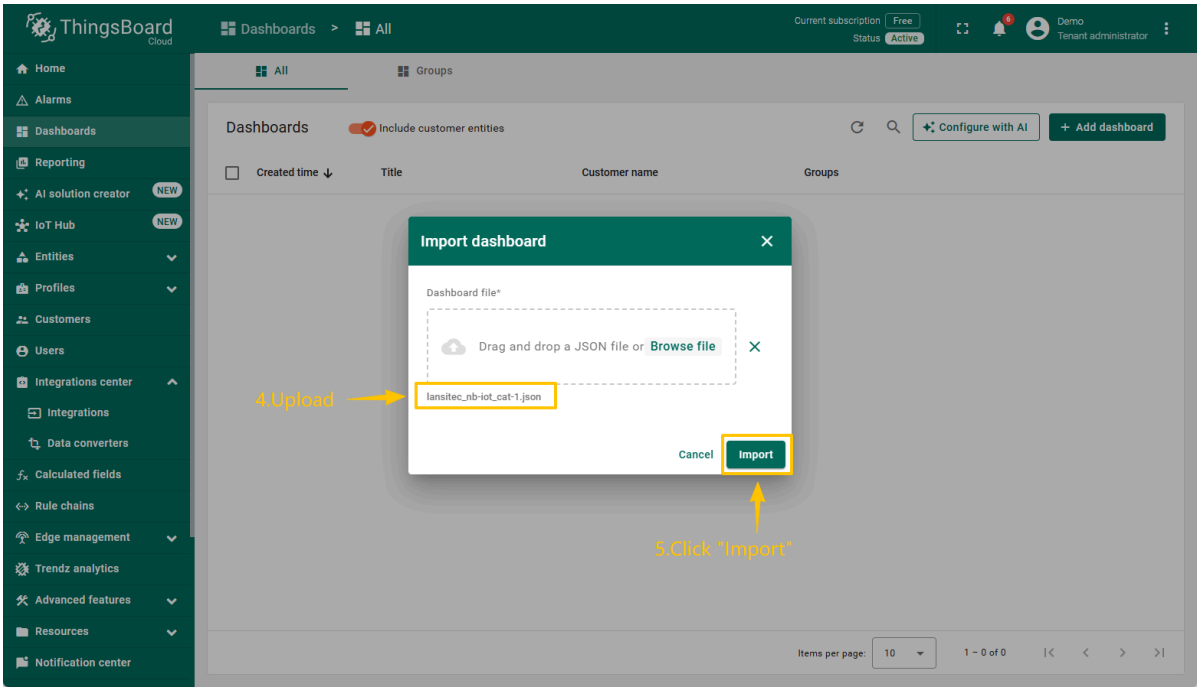


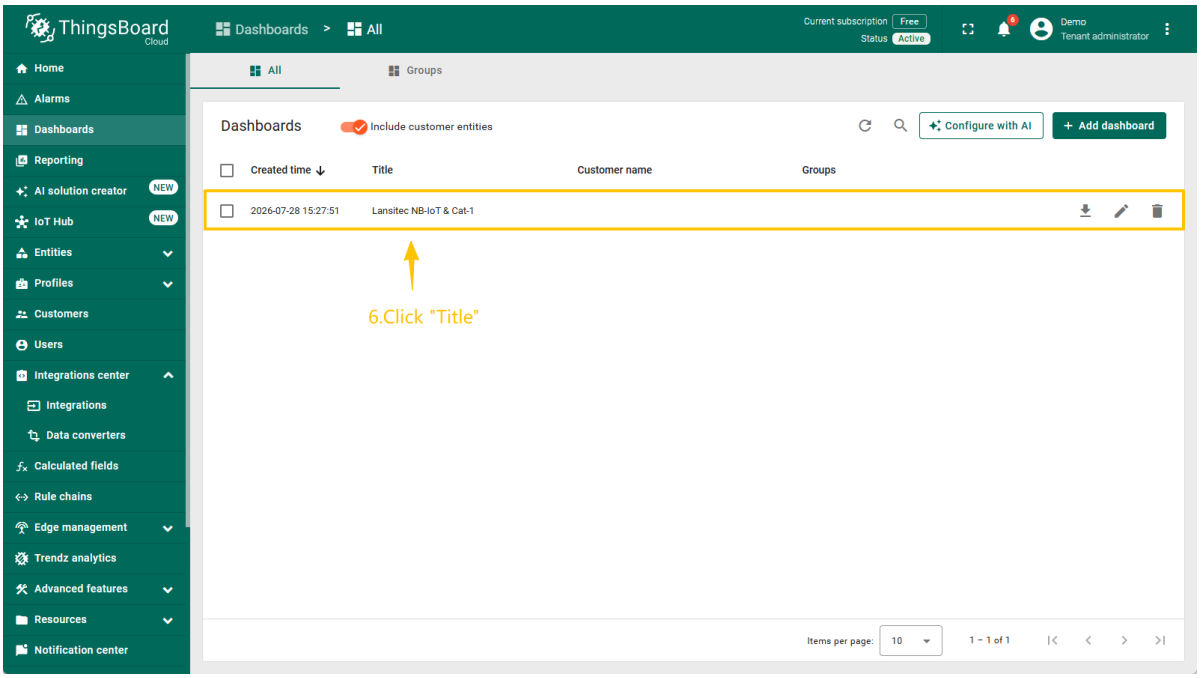
5. Dashboard

5.1 Import the Dashboard

1. Go to **Dashboards**.
2. Click **Add dashboard** and select **Import dashboard**.
3. Obtain `lansitec_nb-iot_cat-1.json` from Lansitec, then upload it and click **Import**.
4. In the Dashboards list, click **Lansitec NB-IoT & Cat-1** to open the imported dashboard.

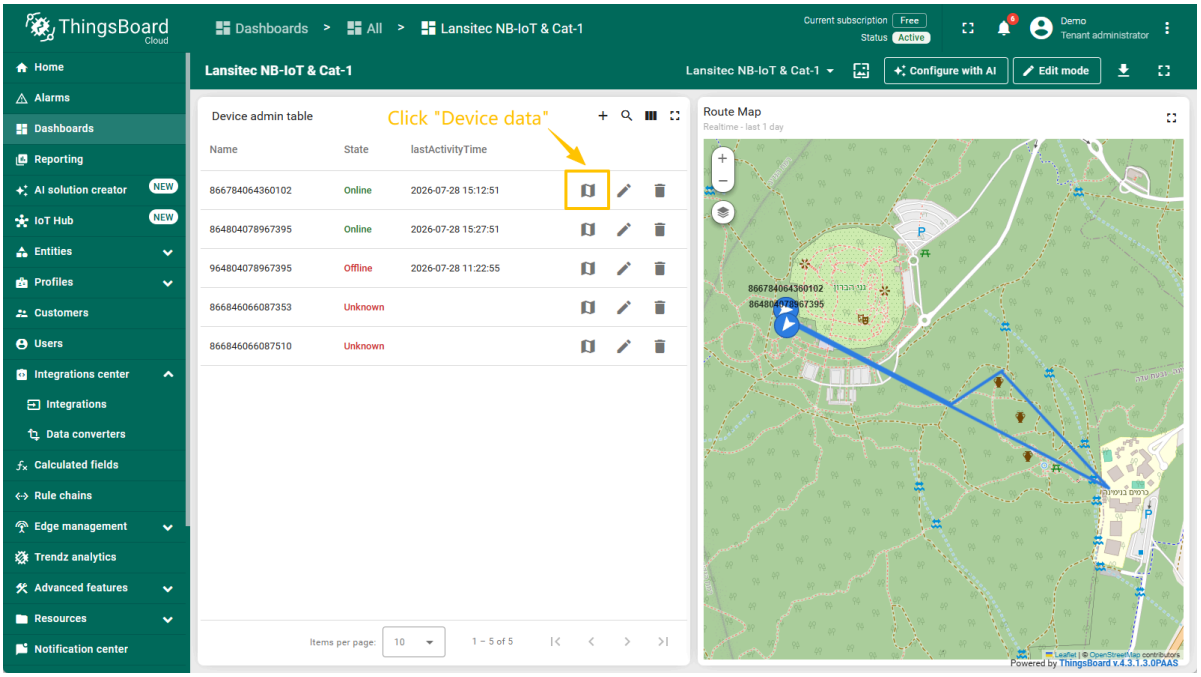


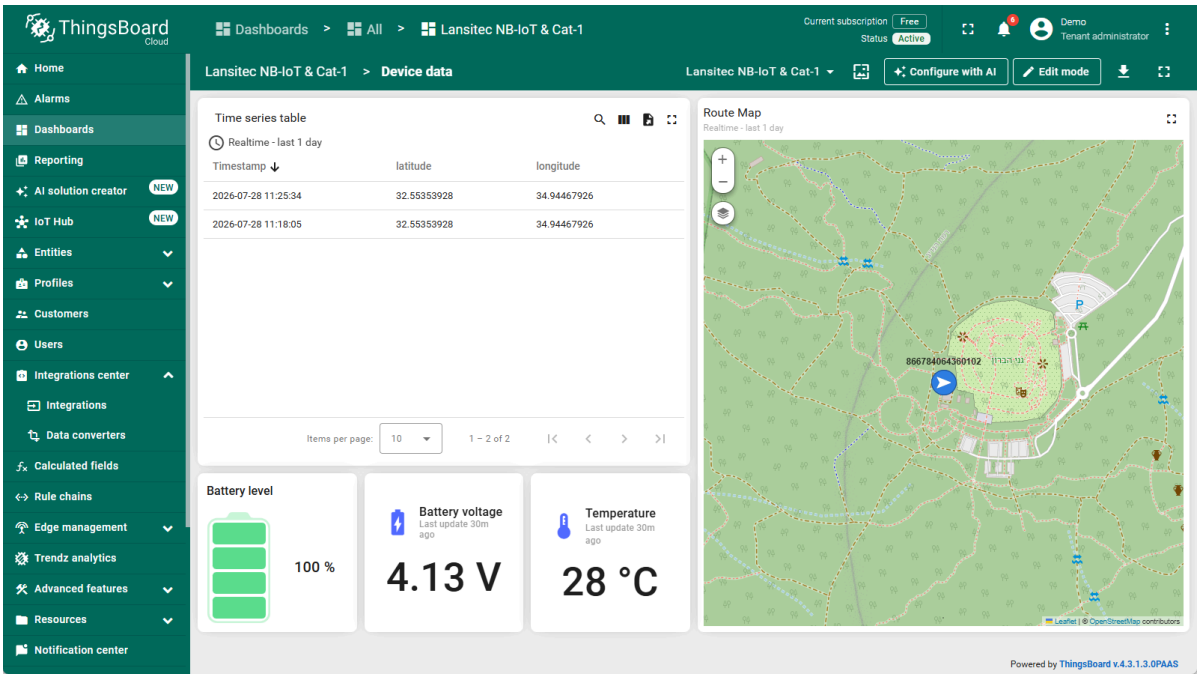




5.2 View Device Data

1. In the **Device admin table**, find the required device.
2. Click the map icon in that device row.
3. On the **Device data** page, review the device's time-series data, latest location and route, battery level, voltage, and temperature.




ThingsBoard
Cloud
Dashboards > All > Lansitec NB-IoT & Cat-1
Current subscription Free
Status Active
Demo
Tenant administrator
Home
Alarms
Dashboards
Reporting
AI solution creator NEW
IoT Hub NEW
Entities
Profiles
Customers
Users
Integrations center
Integrations
Data converters
Calculated fields
Rule chains
Edge management
Trendz analytics
Advanced features
Resources
Notification center
Lansitec NB-IoT & Cat-1 > Device data
Lansitec NB-IoT & Cat-1
Configure with AI
Edit mode
Time series table
Realtime - last 1 day
Timestamp
latitude
longitude
2026-07-28 11:25:34
32.55353928
34.94467926
2026-07-28 11:18:05
32.55353928
34.94467926
Items per page:
10
1 – 2 of 2
Route Map
Realtime - last 1 day
866784064360102
Leaflet | © OpenStreetMap contributors
Battery level
100 %
Battery voltage
Last update 30m ago
4.13 V
Temperature
Last update 30m ago
28 °C
Powered by ThingsBoard v.4.3.1.3.0PAAS