

Advantech AE Technical Share Document

Date	2024/1/19	SR#	1-4287664771
Category	<input type="checkbox"/> FAQ <input checked="" type="checkbox"/> SOP	Related OS	N/A
Abstract	How to Send WISE-4000 IO Data to ThingsBoard via MQTT?		
Keyword	WISE, Mosquitto, cloud upload, push notification, control end device		
Related Product	WISE-40XX series, WISE-42XX, WISE-44XX		

■ **Problem Description:**

This document shows that how to connect with ThingsBoard with WISE-4000 iSensingMQTT service.

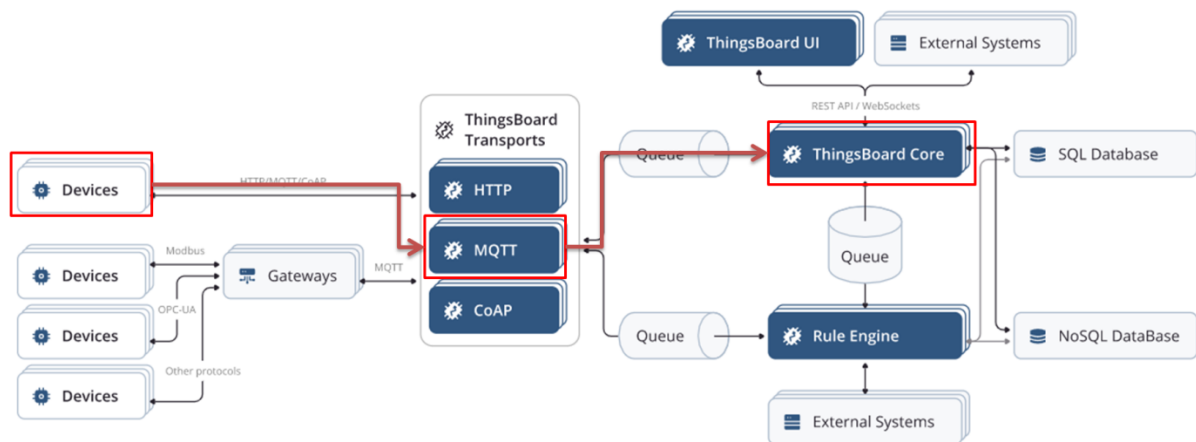


Figure. Flow chart captured from ThingsBoard.

■ **Brief Solution - Step by Step:**

Requirement:

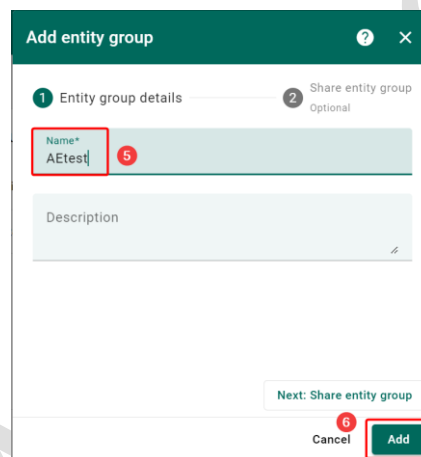
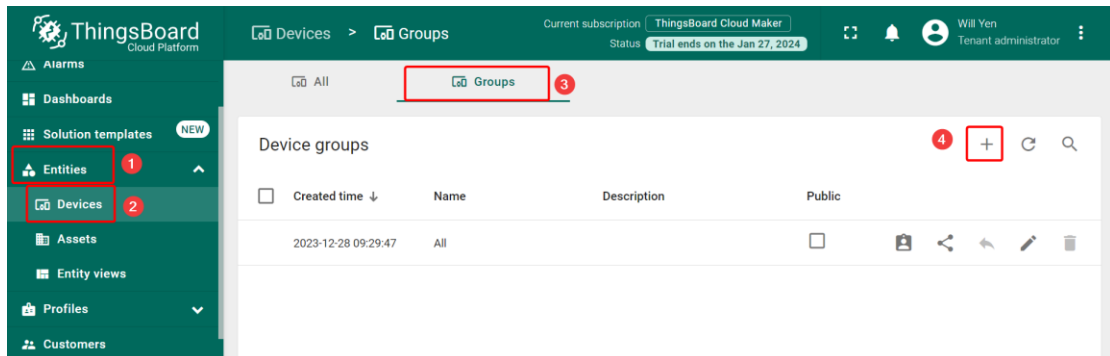
The firmware versions of WISE-4000 models are shown as in bellow table.

Model Name	Firmware Version	Firmware Status
WISE-4010/LAN	Does not support	Does not support
WISE-4050/LAN		
WISE-4060/LAN		
WISE-4012	A2.02 B05	Beta version
WISE-4012E	A2.02 B05	Beta version
WISE-4050	A2.02 B05	Beta version
WISE-4051	A2.02 B06	Beta version
WISE-4060	A2.02 B05	Beta version

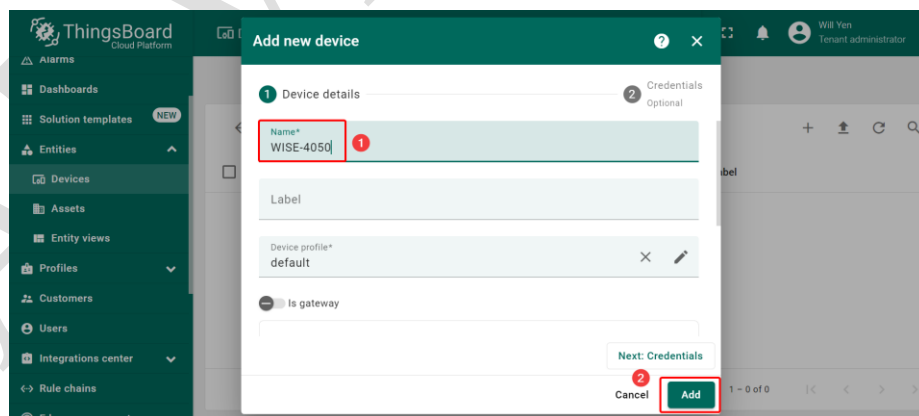
Step 1. Log-in ThingsBoard.

<https://cloud.thingsboard.io/login>

Step 2. Create a device group. (Or you can just create a device)

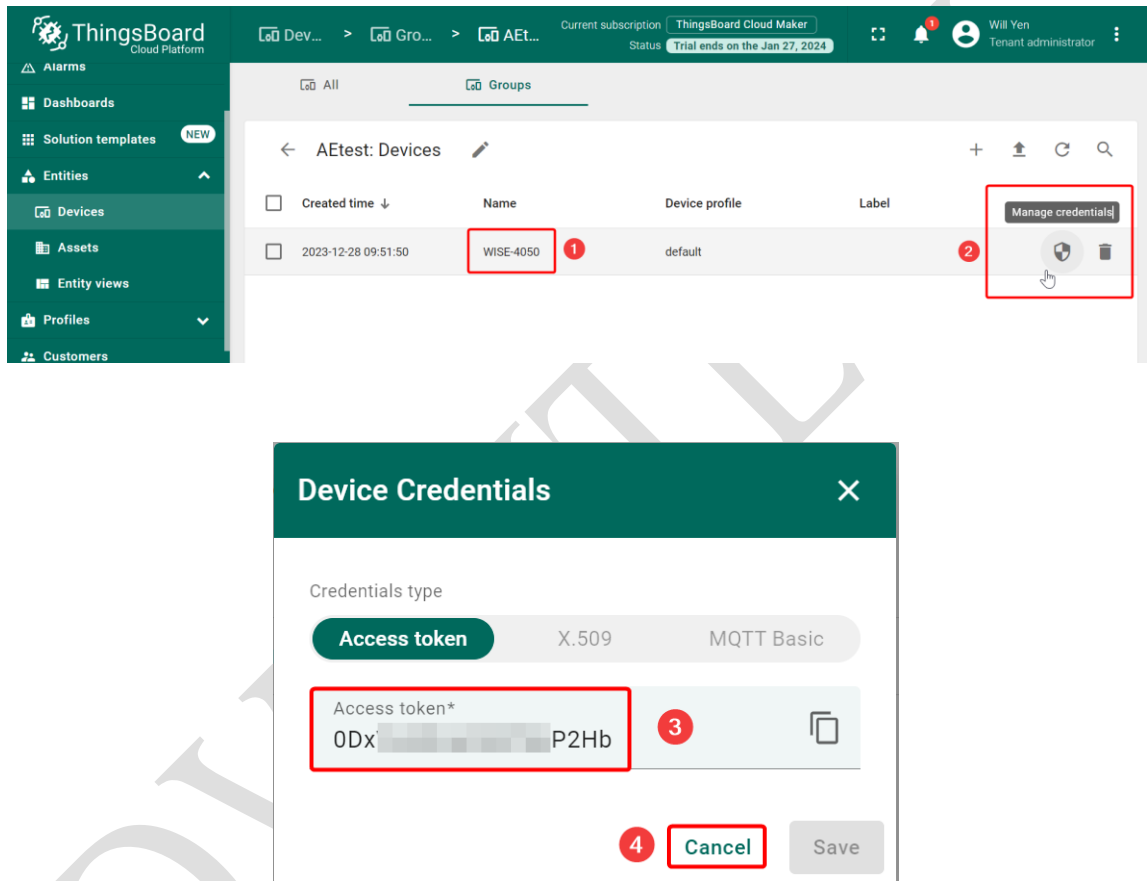


Step 3. Goto “Device groups / Devices” section. Click “+” button and create a device with the name “WISE-4050”.



Step 4. Once device created, open its details and click “Manage credentials”. Copy auto-generated access token from the “Access token” field. Please save this device token. It will be referred to later as \$ACCESS_TOKEN.

Step 5. Click “Copy Device ID” in device details to copy your device id to the clipboard. Paste your device id to some place, this value will be used in further steps.



Step 6. Setup connection between WISE-4050 and ThingsBoard.

The sequence of screenshots illustrates the setup process:

- WISE-4050 Configuration - Cloud:** The 'Cloud' tab is active, and 'iSensing MQTT' is selected under 'Select Service'.
- WISE-4050 Configuration - Advanced Settings:** The 'Advanced Settings' tab is active. The 'MQTT Host Name' is set to 'thingsboard.cloud', 'Port Number' is 1883, 'Username' is '0DxVv0dizpVEIYQHP2Hb', and 'Password' is empty.
- ThingsBoard Cloud Platform:** The browser address bar shows the URL 'https://thingsboard.cloud/entities/devices/groups/4a9792f0-...', with 'thingsboard.cloud' highlighted.
- ThingsBoard Cloud Platform - Device Details:** The 'WISE-4050' device details are shown, and the 'Copy access token' button is highlighted.

Step 7. Enable “Advanced” setting on WISE-4050.

The screenshot shows the 'Advanced Settings' tab for the WISE-4050 device. The 'Customized Topics and JSON Keys' checkbox is checked, and the 'Apply' button is highlighted.

Step 8. Setup the publish topic of WISE-4050 according to the rule of ThingsBoard.

ThingBoard MQTT Device API

<https://thingsboard.io/docs/reference/mqtt-api/?connectdevice=mqtt-windows>

Telemetry upload API

In order to publish telemetry data to ThingsBoard server node, send PUBLISH message to the following topic:

v1/devices/me/telemetry

Step 9. The “Key Name of Published” takes the default value. (Both DI/DO)

Step 10. Disable subscribed topics. (Both DI/DO)

Step 11. Click on “submit” after setting.

2	<input checked="" type="radio"/> Default <input type="radio"/> Definition	
3	<input checked="" type="radio"/> Default <input type="radio"/> Definition	

☐ Preview device information substitute for reserved words

Step 12. Choose what and when to push data to the cloud and click on “Submit”.

WISE-4050 Root

Information
Configuration
I/O Status
Advanced 1
Access Control
Data Logger 2
Diagnostician
Peer to Peer

Data Logger

Data Configuration 3 [Logger Configuration](#) [Local Data Query](#)

[I/O Configuration](#) [System Configuration](#)

Log Conditions

☒ By Period 50 0.1 sec 4
☒ By Communication WDT Log

IO Trigger Log Conditions

IO Trigger Log Conditions

General

☐ Clear Log when Power Up 5
☒ Circular Log when Memory Full

Log Data 6

Channel Fields [IO Fields](#)

DI		DO/Relay	
Channel	Log Enabled <input type="checkbox"/>	Change of State <input type="checkbox"/>	Reset Counter <input type="checkbox"/>
0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Step 13. Enable “Push” function and click on “Submit”.

WISE-4050

Information

Configuration

I/O Status

Advanced 1

Access Control

Data Logger 2

Diagnostician

Peer to Peer

Data Logger

Data Configuration

Logger Configuration 3

Local Data Query

Memory Storage

I/O Log ON 5

System Log ON

Push Notification (JSON format) 4

I/O Log ON 5

System Log OFF

☒ Push MAC Address

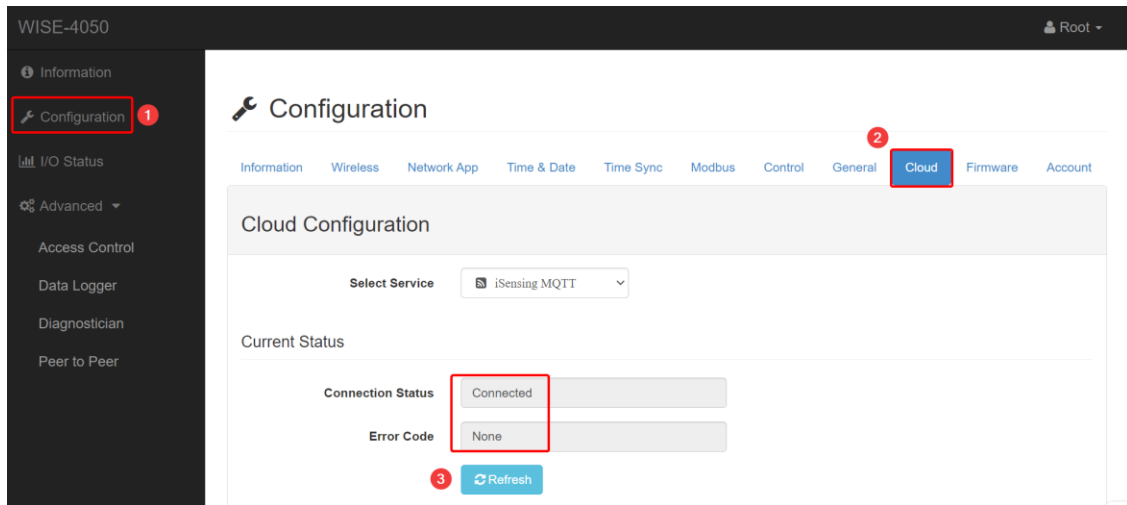
☒ Push Timestamp

Timestamp Format

Local Date and Time(GMT)

Result:

1. Check cloud status.



2. Check "Latest Telemetry".

