


The Things Network v3 (TTNv3)

In this section, it will be shown how to connect RAK7268 WisGate Edge Lite 2 to TTNv3.

To login into the TTNv3, head on [here](#) . If you already have a TTN account, you can use your The Things ID credentials to log in.

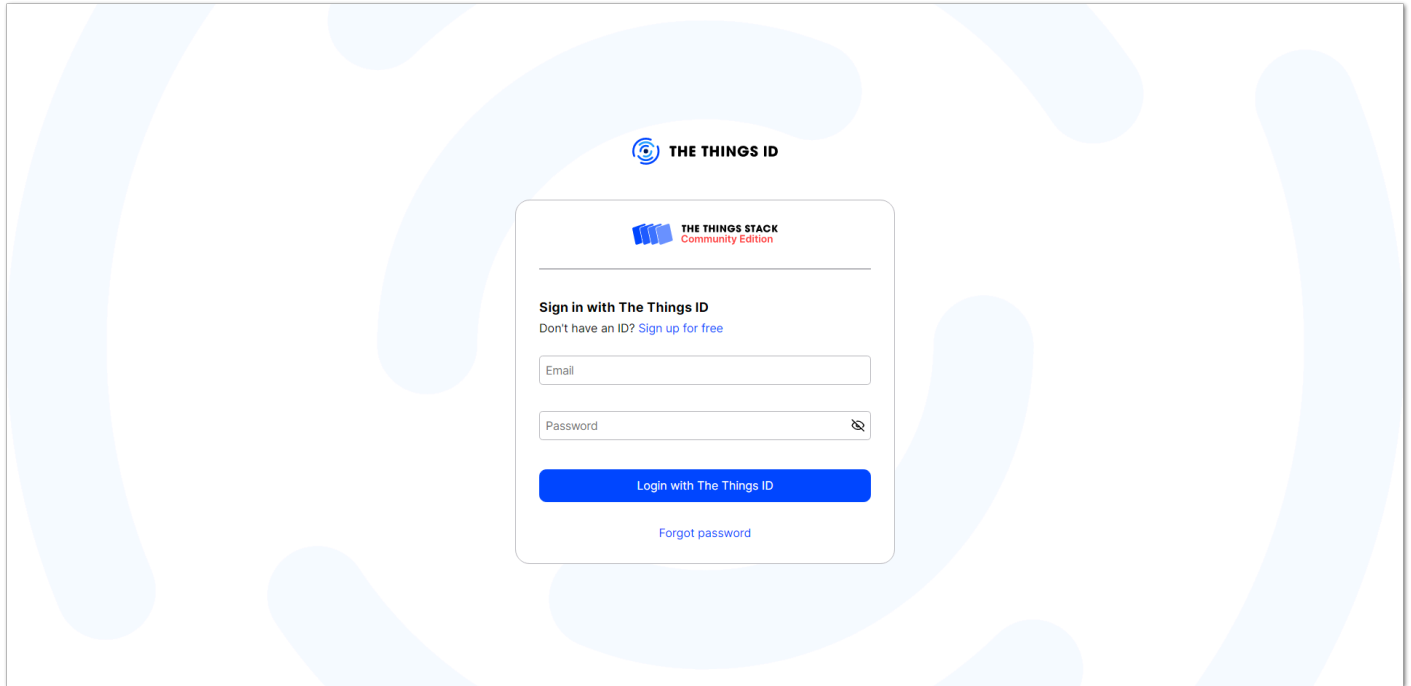


Figure 17: The Things Stack Home Page

NOTE

This tutorial is for the EU868 Frequency band.

Registering the Gateway

1. To register a commercial gateway, choose **Register a gateway** (for new users that do not already have a registered gateway) or go to **Gateways > + Add gateway** (for users that have registered gateways before).

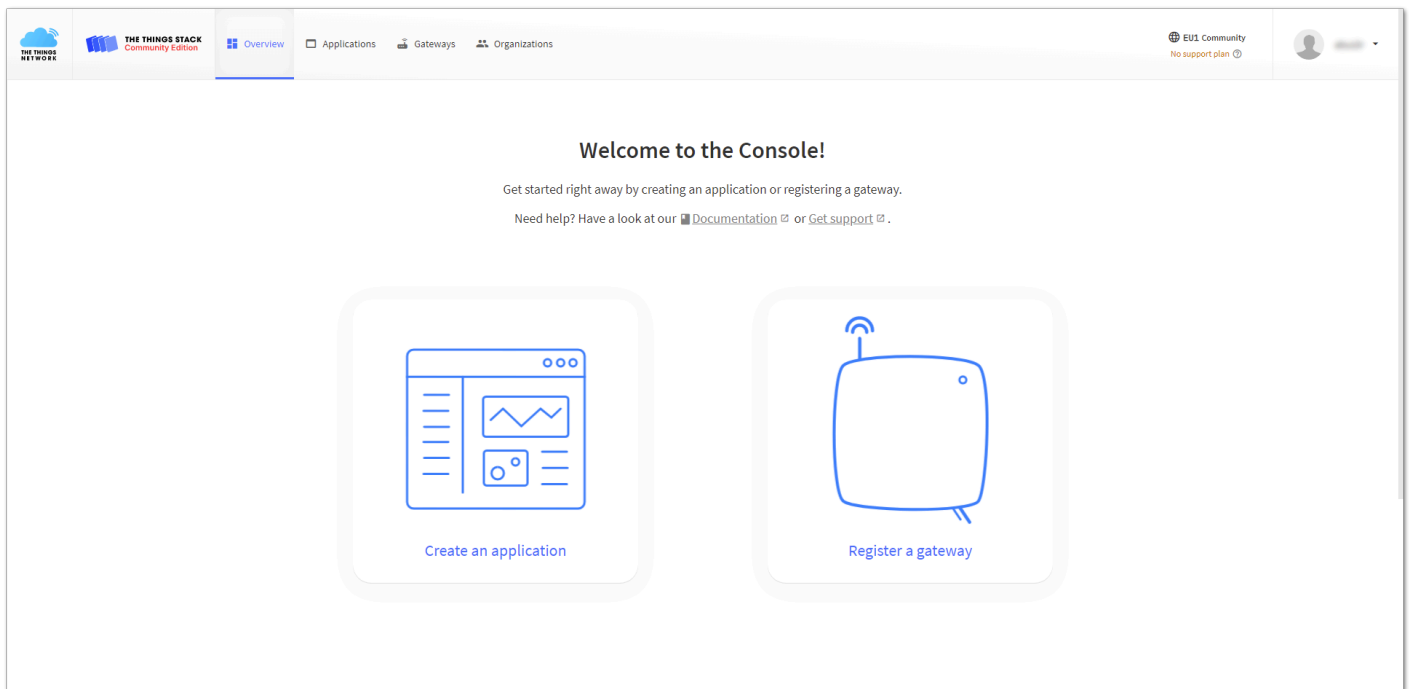


Figure 18: Console Page after successful login

2. You will be redirected to the **Register gateway** page.
3. In the **Gateway EUI** field type the EUI of the gateway. The gateway's EUI can be found either on the sticker on the casing or by going to the **LoRa Network Settings** page in the **LoRa Gateway** menu accessible via the Web UI. Instructions on how to access your gateway via Web UI can be found in the product's [Quickstart Guide](#).

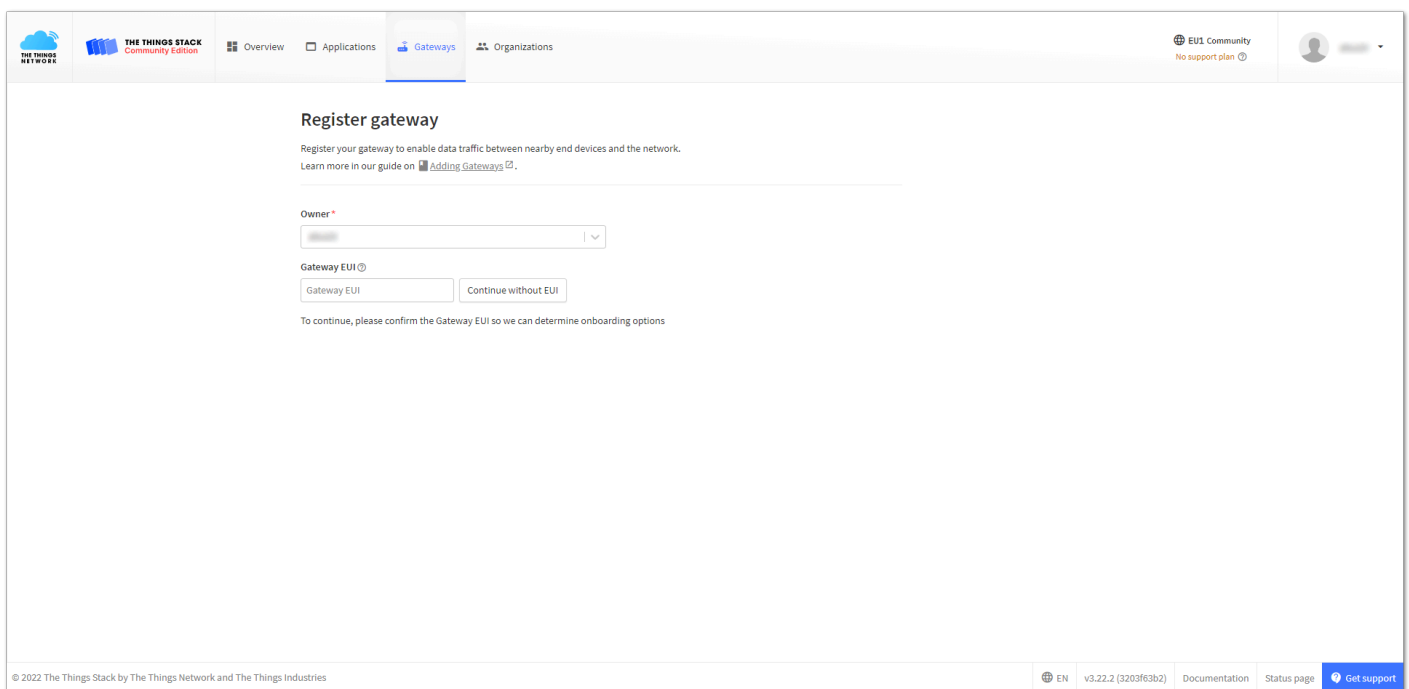


Figure 19: Register gateway

4. After typing the EUI, click on **Confirm**. Additional fields will pop up. Fill in the following information:
 - **Gateway ID** – This will be the unique ID of your gateway in the Network. An ID based on the EUI is automatically generated. You can changed it if you need. Note that the ID must contain only lowercase letters, numbers, and dashes (-).
 - **Gateway name** – Optionally, you can type a name for your gateway.

- **Frequency plan** - The frequency plan used by the gateway.

NOTE

For this tutorial, we will use Europe 863-870 MHz (SF12 for RX2).

- The other settings are optional and can be changed to satisfy your requirements.

The screenshot shows the 'Register gateway' form in the The Things Network (TTN) web interface. The form is titled 'Register gateway' and includes instructions: 'Register your gateway to enable data traffic between nearby end devices and the network. Learn more in our guide on [Adding Gateways](#).' The form fields include: 'Owner' (a dropdown menu), 'Gateway EUI' (a text field with a 'Reset' button), 'Gateway ID' (a text field), 'Gateway name' (a text field with the placeholder 'My new gateway'), and 'Frequency plan' (a dropdown menu). There are also checkboxes for 'Require authenticated connection' and 'Share gateway information' (with sub-options 'Share status within network' and 'Share location within network'). A 'Register gateway' button is at the bottom of the form. The interface includes a top navigation bar with 'Overview', 'Applications', 'Gateways', and 'Organizations' tabs, and a user profile icon in the top right corner.

Figure 20: Add a gateway

5. To register your gateway click **Register gateway**.

The screenshot shows the details page for a gateway named 'rak-edge-wis-gateway' in the The Things Network (TTN) web interface. The page is titled 'rak-edge-wis-gateway' and includes the ID 'ID: rak-edge-wis-gateway'. The status is 'Disconnected'. The page is divided into two main sections: 'General information' and 'Live data'. The 'General information' section includes fields for 'Gateway ID', 'Gateway EUI', 'Gateway description', 'Created at', 'Last updated at', 'Gateway Server address', 'LoRaWAN information' (with 'Frequency plan' set to 'EU_863_870'), and 'Global configuration' (with a 'Download global_conf.json' button). The 'Live data' section shows a 'Create gateway' button and a 'Location' map. The interface includes a top navigation bar with 'Overview', 'Applications', 'Gateways', and 'Organizations' tabs, and a user profile icon in the top right corner.

Figure 21: Successfully added gateway

TTNv3 supports TLS server authentication and Client token, which requires a trust file and a key file to configure the Gateway to successfully connect it to the network.

Generating the Token

1. To generate a key file, from the **Overview page** of the registered Gateway navigate to **API keys**.

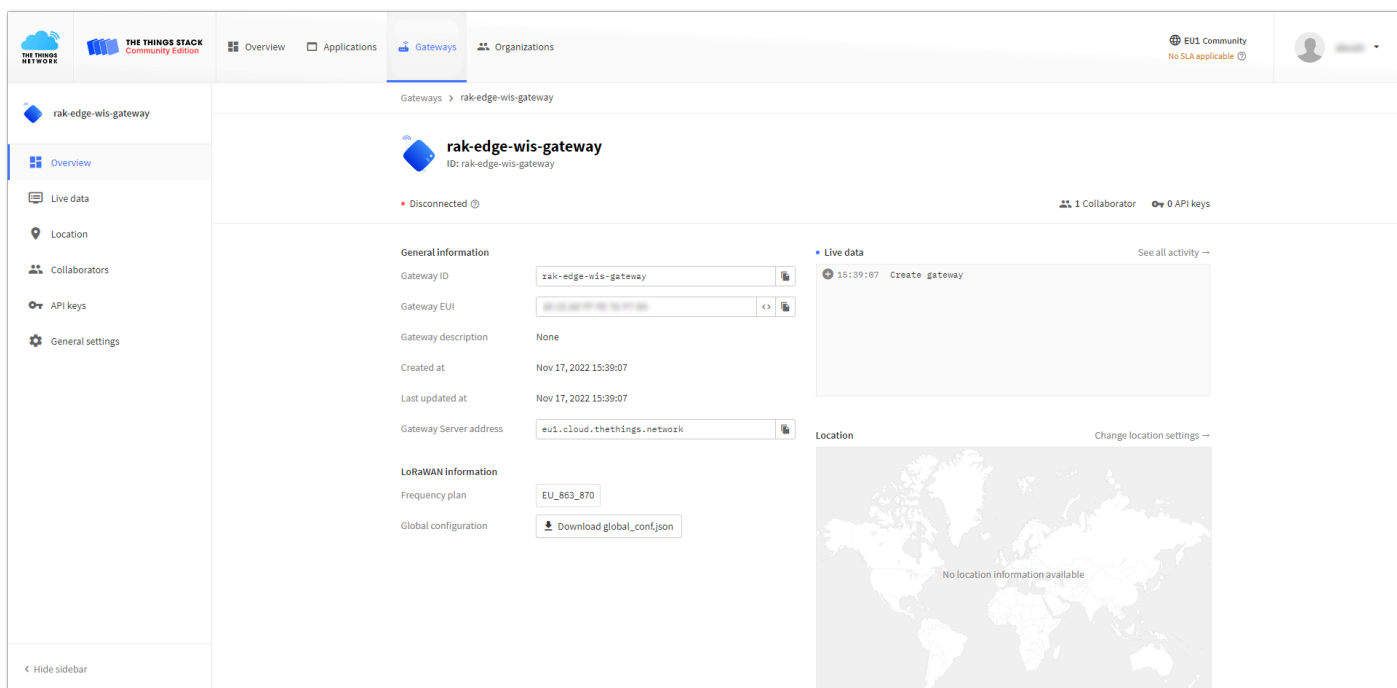


Figure 22: Overview page

2. On the **API keys** page, choose **+ Add API key**.

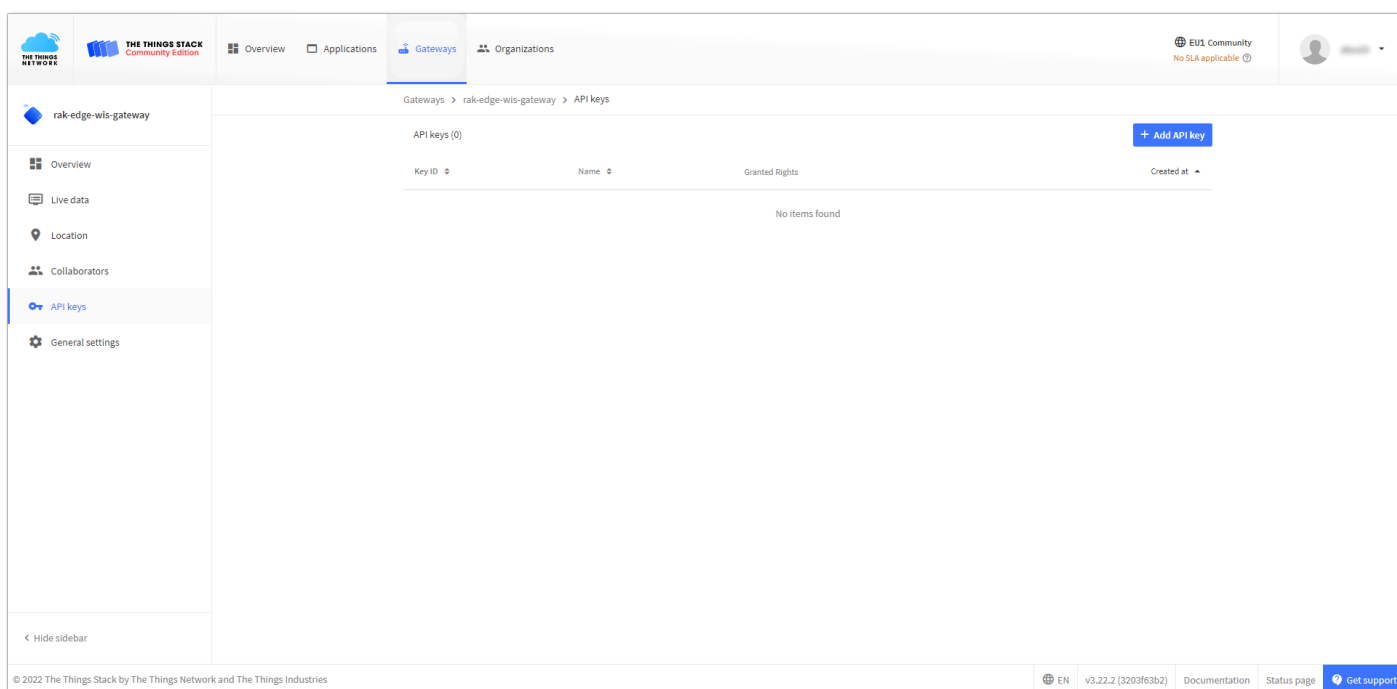


Figure 23: API key page

3. In the **Name** field type the name of your key (for example - mykey). Choose **Grant individual rights** and select **Link as Gateway to a Gateway for traffic exchange**, i.e. read uplink and write downlink.

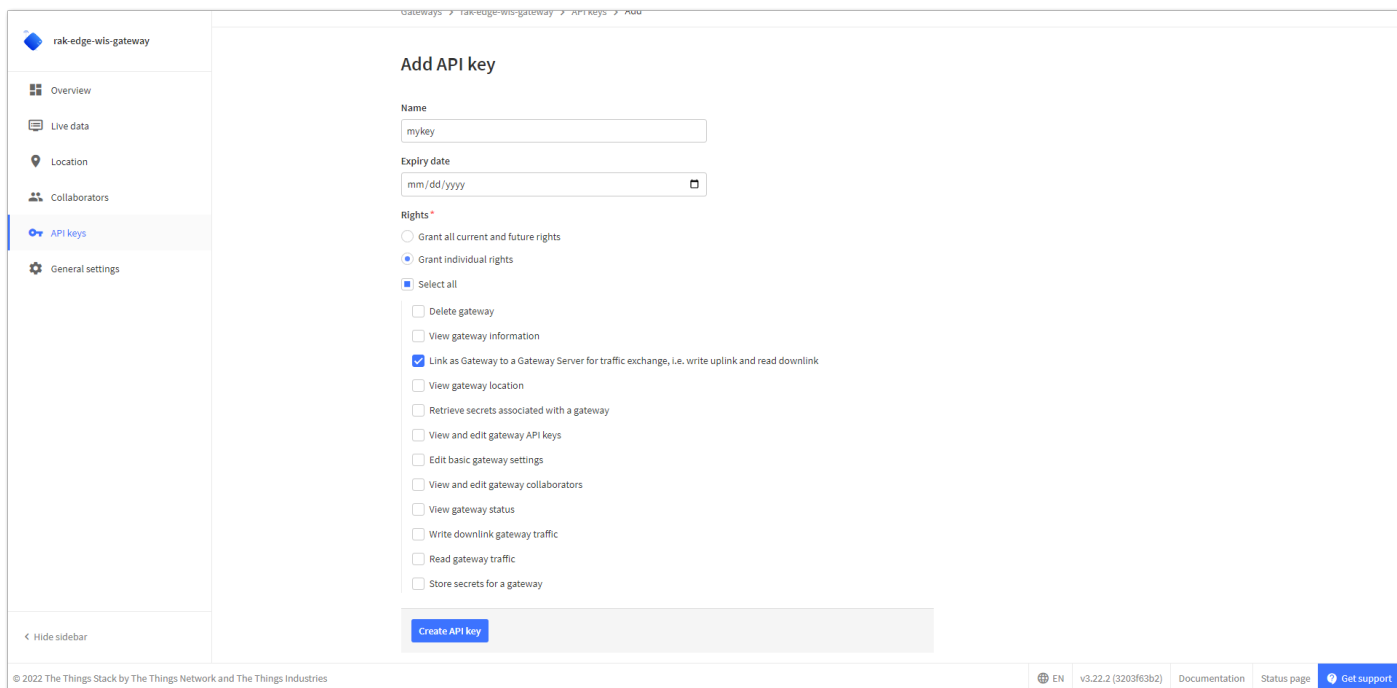


Figure 24: Generate an API key

4. To generate the key, choose **Create API key**. The following window will pop up, telling you to copy the key you just generated.

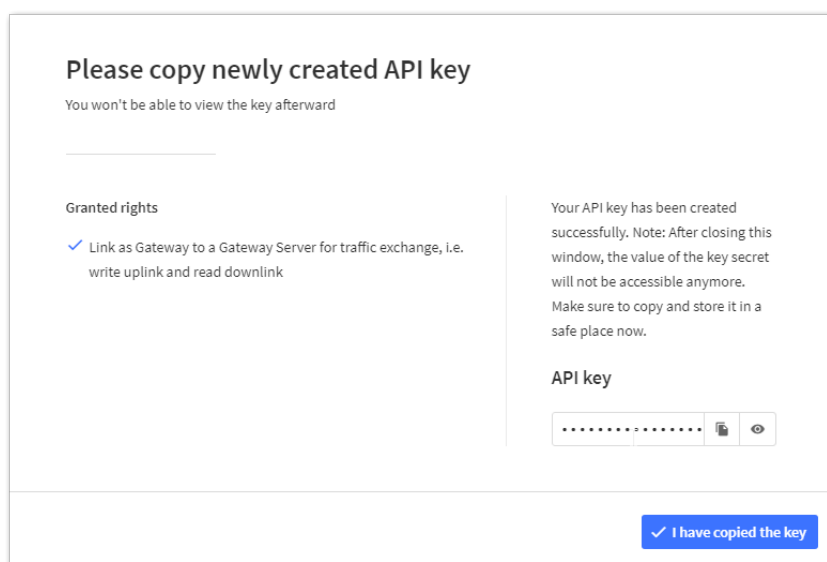


Figure 25: Copy the generated key

WARNING

Copy the key and save it in a .txt file (or other), because you won't be able to view or copy your key after that.

5. Click **I have copied the key** to proceed.

Configuring the Gateway

1. To configure the gateway access it via the Web UI. To learn how to do that check out the device's [Quickstart Guide](#) mentioned before.
2. Navigate to **LoRa Network > Network Settings > Mode** drop-down menu > choose **Basics Station**.

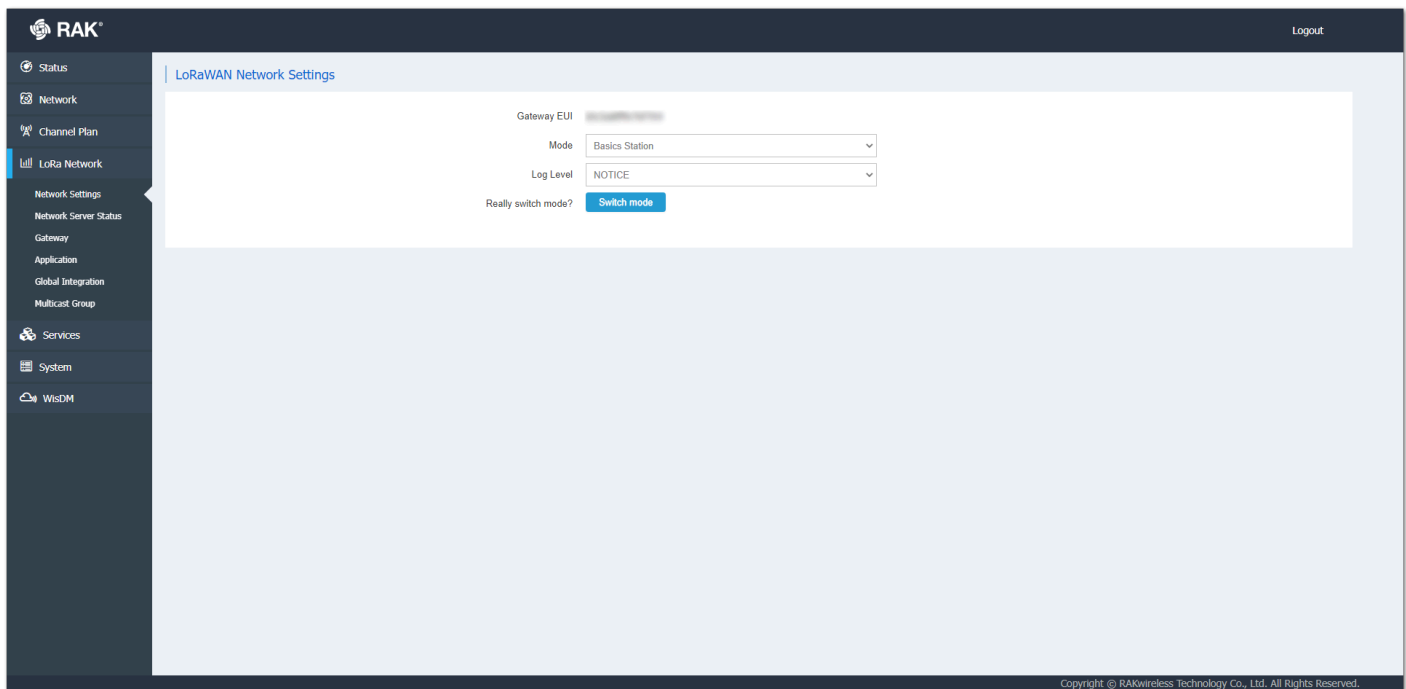



Figure 26: Change the work mode


3. Select **Switch mode** to apply the change. After that, the **Basics Station Configuration** pane settings will show up. To connect the Gateway to TTNv3, the following parameters must be configured:

- **Server** – For server choose **LNS Server**.
- **URI** – This is the link to The Things Stack server. Note that, for this tutorial, we are connecting the gateway to the European cluster. For Europe fill in the following:
wss://eu1.cloud.thethings.network
- **Port** – The LNS Server uses port 8887. Type in **8887**.
- **Authentication Mode** – Choose **TLS server authentication and Client token**. When selected, the trust and the token field will show up.
- **trust** – For trust we will use the **Let's Encrypt ISRG ROOT X1 Trust** certificate. The file with the certificate can be found [here](#) .
- **token** - This is the generated **API key**. The key must start with **Authorization:.** Example:

Authorization: YOUR_API_KEY

NOTE

Replace **YOUR_API_KEY** with the key generated previously. Have in mind that there should be a “space” between **Authorization:** and **YOUR_API_KEY**, as shown in the example.

 RAK

Status

Network

Channel Plan

LoRa Network

Network Settings

Services

System

WiSDM

Logout

LoRaWAN Network Settings

Gateway EUI

Mode

Log Level

LoRa Basic Station

Basic Station Configuration

Basic Station

Server

URI

Port

Authentication Mode

trust

token

Save & Apply


Reset

Copyright © RAKwireless Technology Co., Ltd. All Rights Reserved.

Figure 27: LoRa Basics Station settings

4. To save the changes click **Save & Apply**.

You can now see that your gateway is connected to TTNv3 as Basics Station:



THE THINGS NETWORK

THE THINGS STACK
Community Edition

Overview


Applications


Gateways

Organizations

EU1 Community

No support plan





rak-edge-wis-gateway

Overview

Live data


Location

Collaborators

API keys

General settings

Gateways > rak-edge-wis-gateway



rak-edge-wis-gateway

ID: rak-edge-wis-gateway

0

0

Last activity 20 seconds ago

1 Collaborator

1 API key

General information

Gateway ID

rak-edge-wis-gateway

Gateway EUI

Gateway description

None

Created at

Nov 17, 2022 15:39:07

Last updated at

Nov 17, 2022 15:39:07

Gateway Server address

eu1.cloud.thethings.network

LoRaWAN information

Frequency plan

EU_863_870

Global configuration

Download global_conf.json

Live data

See all activity

15:49:13

Receive uplink message

DevAddr:

FPort:

15:49:09

Send downlink message

Tx Power: 16.15

Data rate: SF7BW125

15:49:07

Receive uplink message

JoinEUI:

15:49:00

Receive uplink message

JoinEUI:

15:48:53

Receive uplink message

JoinEUI:

15:46:49

Receive gateway status

Versions: { station: "2.0.4-9-g3d5c686"

Location

Change location settings

No location information available

Hide sidebar

Figure 28: Successful connection