EXPERIMENT -07 CONFIGURING NETWORK SERVER FOR CONNECTING GATEWAY AND END NODE

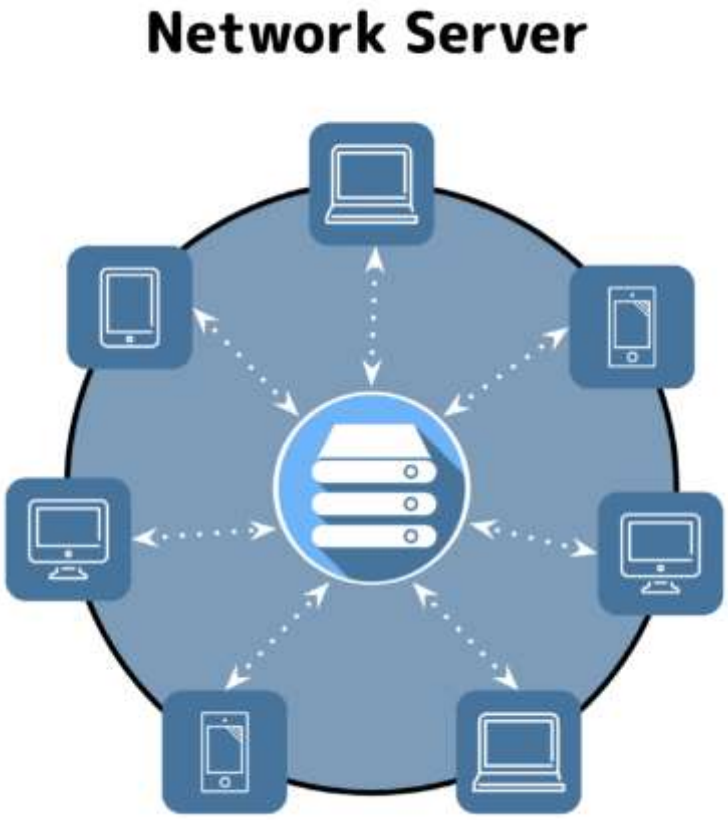
Aim: To configure the Network server and end device for traferring data on the network

Components required: end node stm 32 development kit , dragino LPS8, network server

Theory :

When working with sensitive applications or files, saving progress on your local device is a start, but what if you lose access to your device? Network servers address this problem by hosting the files and programs most pertinent to the network and enabling access for consistent, real-time use.

As a result, personnel or network clients can instantly access important data or tools while also facilitating collaboration between users. Multiple users can make changes to the same program or document for continued development over the course of a project. Via a secure login, remote users



can connect to the home network.

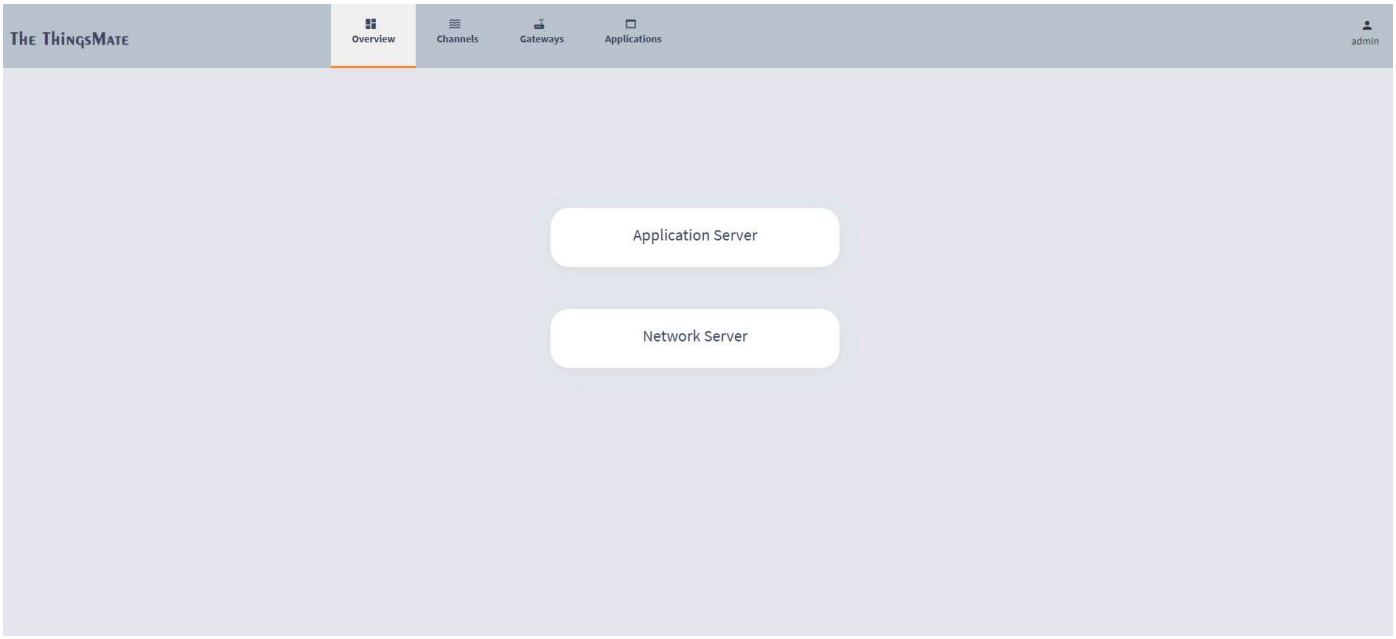
In the above graphic, the circle represents an organization network where a network server facilitates collaboration and file sharing between network clients (devices).

The role of a network server, then, is to provide users with a set of services and access to resources on the network. These features include:

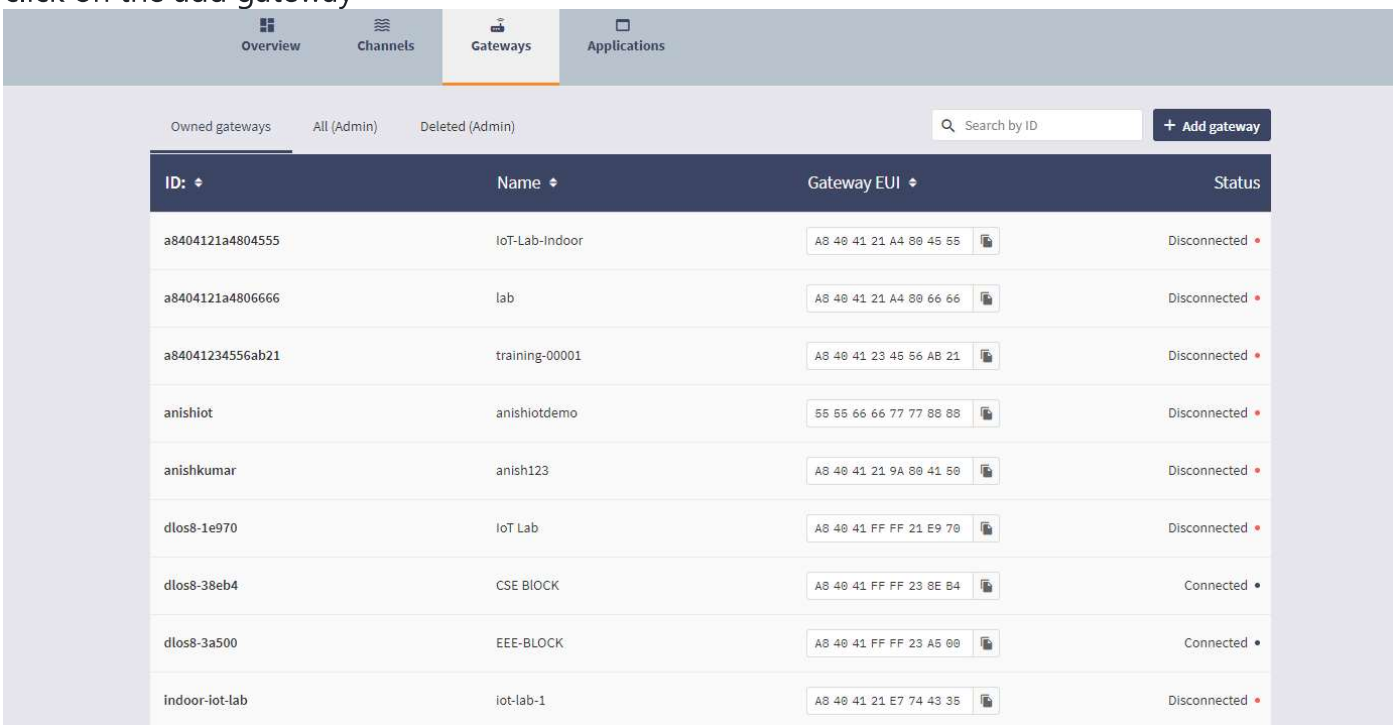
Permissioned access and log-ins for network users Gateway access to the Internet for an organization Centralized location for network resources Shared access to devices on the network like a printer or a scanner Hosts multi-user apps like email servers, web applications, or CRM

Procedure :

1. login to the network server using login link https://iot.saveetha.in/
2. Click on the nework server as shown blow



3. click on the add gateway



Add gateway

General settings

Owner *

admin

Gateway ID *

my-new-gateway

Gateway EUI

Gateway EUI

Gateway name

My new gateway

Gateway description

Description for my new gateway

Optional gateway description; can also be used to save notes about the gateway

Gateway Server address

iot.saveetha.in

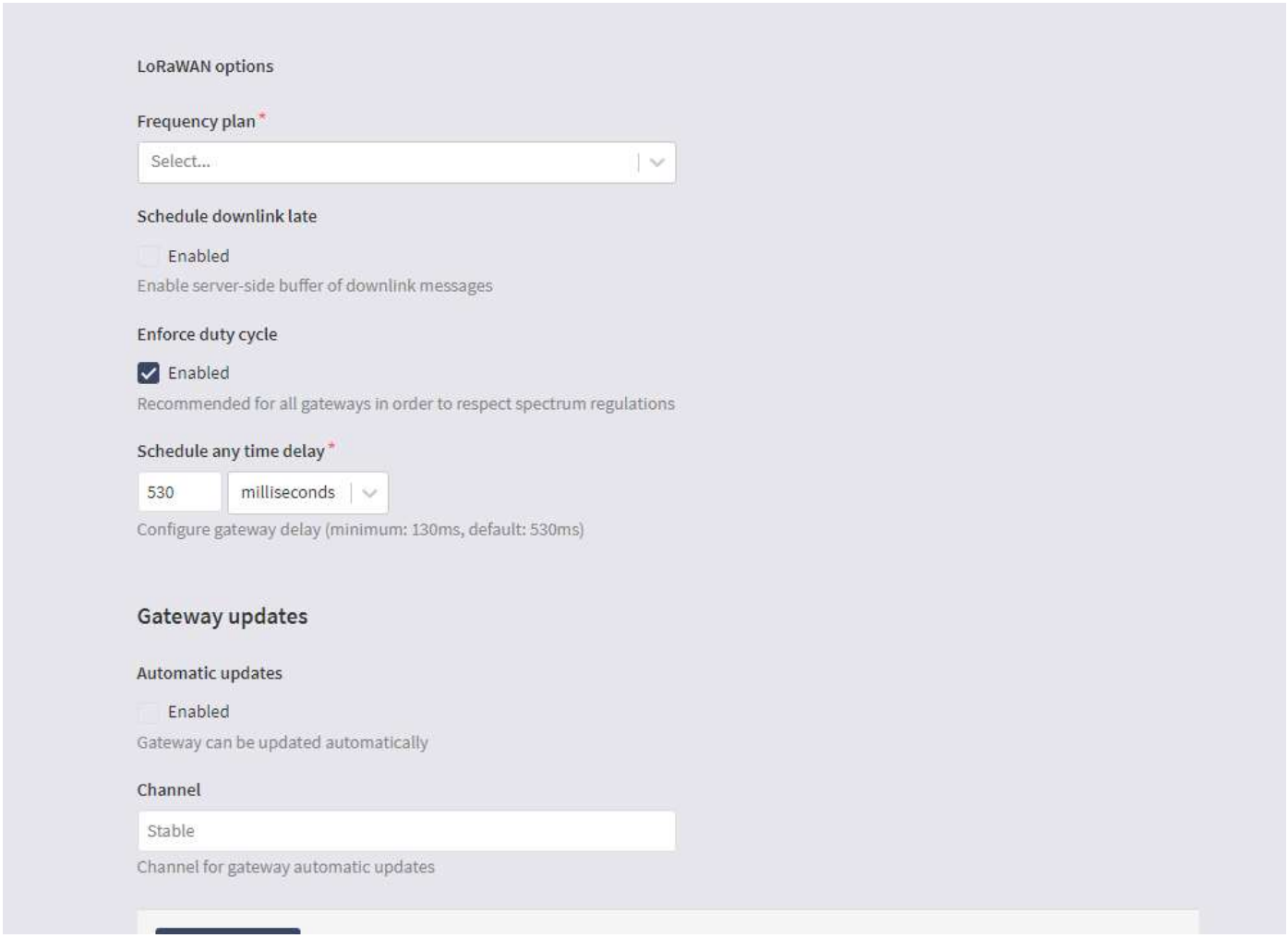
The address of the Gateway Server to connect to

Require authenticated connection

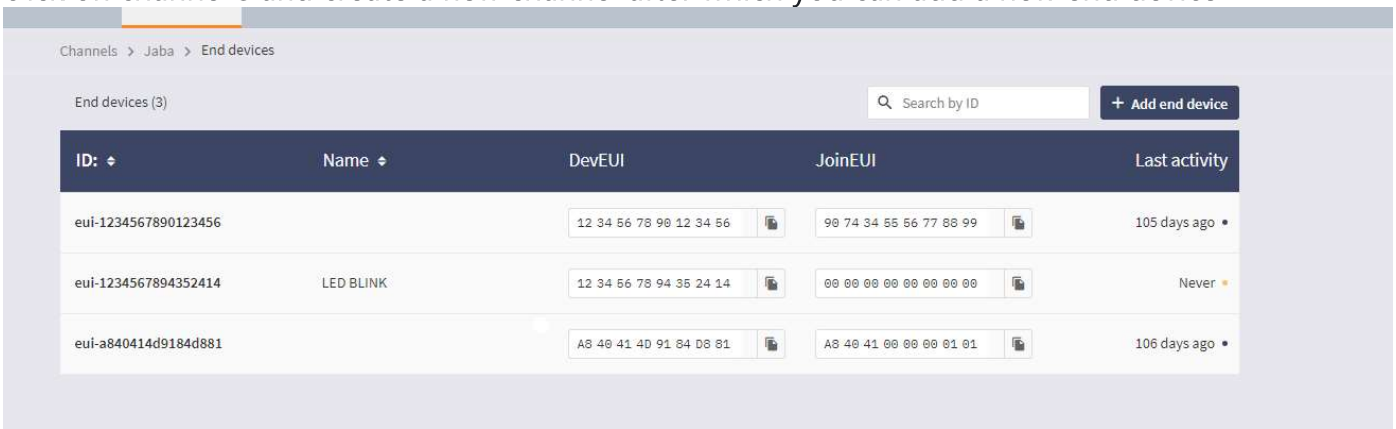
Enabled

Controls whether this gateway may only connect if it uses an authenticated Basic Station or MQTT connection

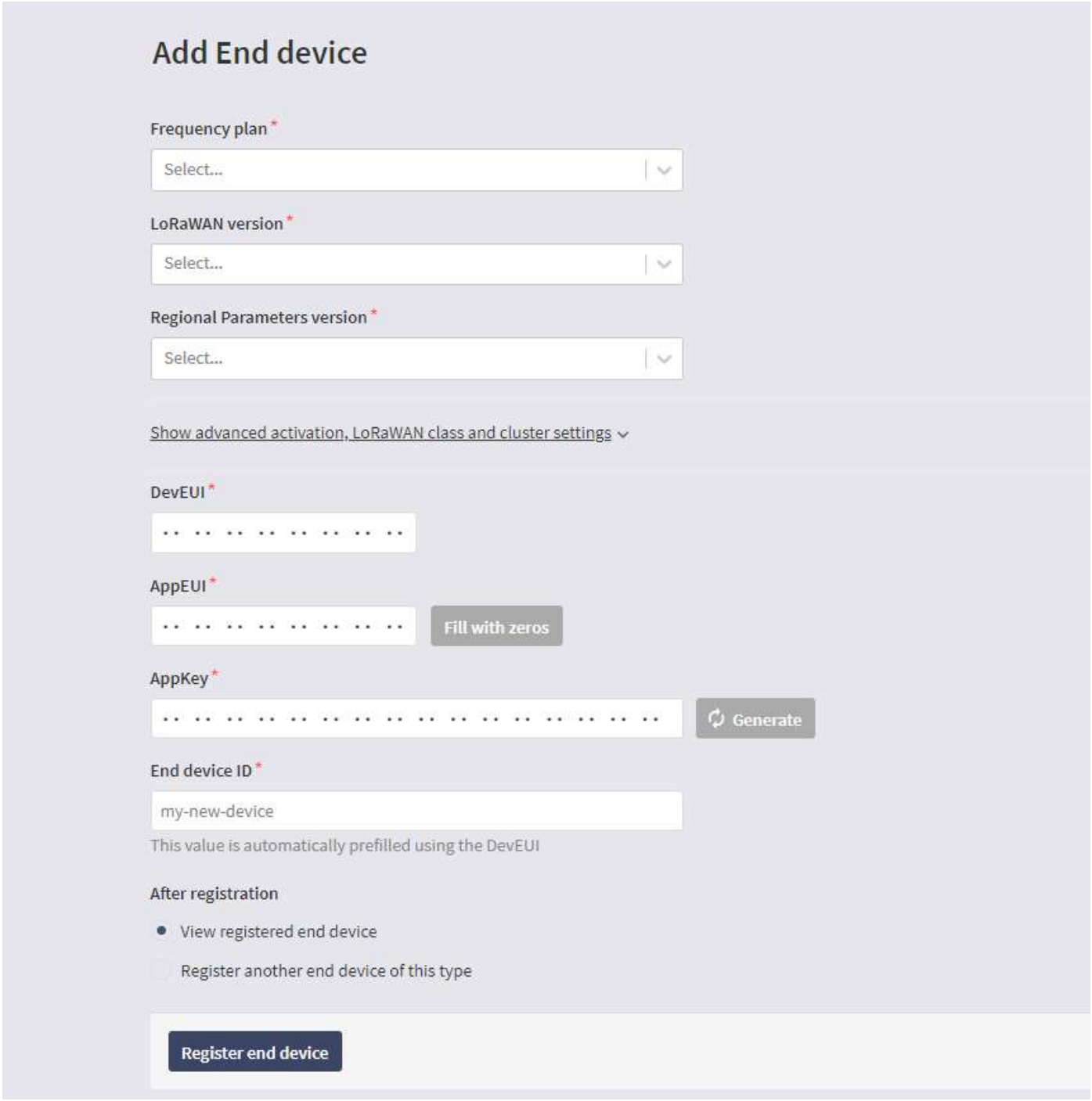
Gateway status



4. click on the lora options , lora - frequency plan
5. click on channel s and create a new channel after which you can add a new end device



6. add the attributesin the end device as shown below



7.using AT commands configure end device in serial port utility AT Commands to set initially (Mandatory) AT+FDR // To do factory data reset AT+NJM=1 // To set OTAA mode AT+ADR=1 // To enable the ADR AT+TDC=600000 // To set the default sampling interval as 10 minutes (Should not give below 5 minutes) AT+CLASS=C // To set class C AT+DEUI=XX XX XX XX XX XX XX XX // To set Device EUI key AT+APPEUI=XX XX XX XX XX XX XX XX // To set APP EUI key AT+APPEUI=XX XX XX XX XX XX XX XX XX XX XX XX XX XX XX XX // To set APP Key ATZ // To take effective action on below settings (As like saving)

OUTPUT

SOIL MOISTURE SENSOR

ID:eui-3535353535353535

↑ 7 ↓ 6 • Last activity 33 days ago

Overview | Live data | Messaging | Location | Payload formatters | General settings

General information

End device ID	eui-3535353535353535
Description	IOT LAB SOIL MOISTURE SENSOR
Created at	May 2, 2023 18:00:29

Activation information

AppEUI	00 00 00 00 00 00 00 00
DevEUI	35 35 35 35 35 35 35 35
Root key ID	n/a
AppKey	•• •• •• •• •• •• •• •• •• •• •• •• •• •• •• ••
NwkKey	n/a

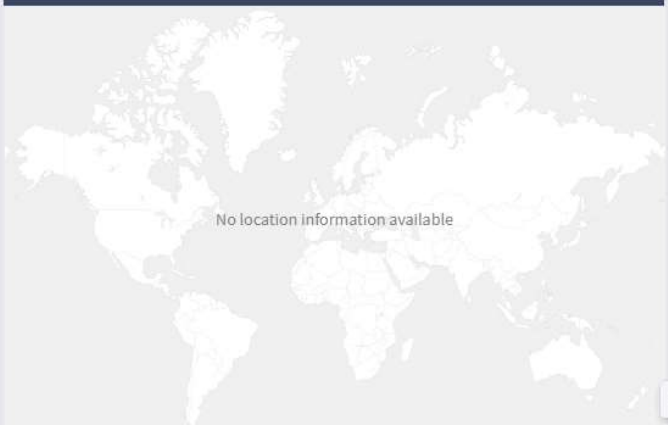
Session information

Device address	00 81 88 CA
NwkSKey	•• •• •• •• •• •• •• •• •• •• •• •• •• •• •• ••
SNwkSIntKey	•• •• •• •• •• •• •• •• •• •• •• •• •• •• •• ••

Live data See all activity →

```
21:52:02  Stream reconnected  The stream connection has been re-establis
21:51:56  Network error  The stream connection was lost due to a networ
21:46:55  Stream reconnected  The stream connection has been re-establis
21:46:50  Network error  The stream connection was lost due to a networ
```

Location Change location settings →



Virtua

THE THINGSMATE

Overview | Channels | Gateways | Applications | admin

- Overview
- Live data
- Location
- General settings

Gateways > prabha

prabha

ID:swetha

↑ 0 ↓ 0 • Last activity 18 seconds ago

General information

Gateway ID	swetha
Gateway EUI	A8 40 41 21 9A 80 41 50
Gateway description	None
Created at	May 8, 2024 09:05:48
Last updated at	May 8, 2024 09:05:48
Gateway Server address	iot.saveetha.in

LoRaWAN information

Frequency plan	IN_865_867
Global configuration	Download global_conf.json

Live data See all activity →

```
09:08:24  Receive gateway status  Metrics: { ackr: 0, rxfw: 0, rxin: 0,
09:07:54  Receive gateway status  Metrics: { ackr: 0, rxfw: 0, rxin: 0,
09:07:24  Receive gateway status  Metrics: { ackr: 0, rxfw: 0, rxin: 1,
09:06:54  Receive gateway status  Metrics: { ackr: 0, rxfw: 0, rxin: 0,
09:06:53  Connect gateway
```

Location Change location settings →

Hide sidebar

Results:

The Network server and end device for traferring data on the network has been accomplished.