

# LoRaWAN server configuration

towards hub.sensefarm.com

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# Example usage of the CUBE02 sensor serie with different LoRaWAN servers and operators



The collage illustrates the deployment of CUBE02 sensors across different locations and operators:

- Sensefarm Hub Overview:** Shows 5 active devices and 0 alarm devices. A map view shows locations like Höganäs, Mölle, and Arild.
- Höganäs Energi Kontrollrummet:** Displays real-time bath temperature data for various locations: Höganäs (8.9 °C), Höganäs (8.8 °C), Mölle (8.9 °C), VIKEN (8.8 °C), TÖNSTORP (8.4 °C), and ARILD (8.8 °C).
- Google Map Integration:** A Google Map shows sensor locations with data overlays. Examples include "Vatten temperatur: 7.38 °C" at Höganäs and "6.19 °C" at Rekekrön.
- Sensefarm Hub Overview (Bottom):** Shows 10 active devices and 1 alarm device. A detailed view of an alarm for "rssi failed to reported within 4 hours" is shown, listing SPS, humidity, moisture, temperature, and pressure data points.

# Content

- Locating the encryption keys for Sensefarm products
  - <https://hub.sensefarm.com>
- Actility
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- Talkpool
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  - <https://portal.blink.services/home>
- Chirpstack
  - <https://www.chirpstack.io/>
- Ygg.io ( version 2 and 3 )
  - <https://ygg.io>
- The Things Network V3
  - <https://console.cloud.thethings.network/>

# Locating device encryption keys - 1 of 2

Keys are printed on the lid of the device



They are easier to copy from  
[Hub.sensefarm.com](http://Hub.sensefarm.com)

Project roles needed  
for access to keys:  
Owner, Admin

A screenshot of a web browser displaying the Sensefarm Hub Members page at hub.sensefarm.com/members. The page has a dark sidebar on the left with links for Overview, Charts, Devices, and Actions. The main area shows a table of members with columns for 'Owner of' (with a blurred icon), 'All members' (with blurred icons), 'Role' (Admin or Viewer), and 'Actions' (Remove button). A red circle highlights the 'Manage Projects' link in the user menu on the right, which also includes 'My Account', 'Help', 'Stop Impersonation', and 'Sign Out'. Another red circle highlights the 'Admin' role for the first member in the list.

# Locating device encryption keys - 2 of 2

Hub.sensefarm.com

Find device  
Press Edit

Settings needed for ABP

devEUI  
devAddr  
appSkey  
nwkSkey

The screenshot shows the sensefarm.com web interface. On the left, a sidebar menu includes 'Overview', 'Charts', 'Devices' (which is highlighted with a red circle), 'Actions', 'Chat', and 'Members'. The main content area displays a device configuration page for 'Halmstadgården Norr centrum 205'. The page has sections for 'Admin area' (Project Owner) and 'Device information'. The 'Device information' section lists the following details:

Name	Halmstadgården Norr centrum 205
Type	CUBE02
ID	[REDACTED]
Connected Gateway	B82 [REDACTED] 88
Source	sensefarm-lora
Latest report	November 18th 2020, 17:04:22
Latest Message Interval	10 minutes

A 'Hide Advanced Info' button is circled in red. Below it, the 'Keys' section is circled in red and contains the following fields:

Join Type	ABP
Class	A
devAddr	01000205
nwkSKey	42E3F[REDACTED]B1C73D
appSKey	224C[REDACTED]246

At the bottom, there is a section for 'Uplink Payload (Raw Data)'.

*Cube02 sensors are locked down to use ABP and SF12 to work in rapidly changing outdoor radio environments.*

*OTAA and ADR requires good bi-directional radio coverage which can not be guaranteed all year around due to leafs and sudden rain.*

# Actility configuration

<https://stadshubb.thingpark.com/portal/web/>

# Adding a device

Manufacturer - Generic  
Model - very important to  
get correct, many similar  
variants:

LoRaWAN 1.0.2 rev B  
Class A  
Rx2\_SF12  
eu868

The screenshot shows the Sensefarm Hub device manager interface. On the left, there's a sidebar with a tree view of device categories like Devices, Multicast groups, Connectivity plans, AS routing profiles, Application servers, and Settings. Under Devices, a specific device entry for 'CUBE01-TW-70B3D5546000000C8' is selected. The main panel has tabs for Map and List, currently showing a list of devices. A 'Create' button is highlighted with a red circle. On the right, a 'New device' dialog box is open, also featuring a 'Create' button. The dialog is divided into several sections: 'Administrative data' (Device name: Test - 70B3D55460000EFB, Marker: Change marker, Admin info: empty, Admin location: 55° 43' 1" N 13° 13' 30" E, Motion indicator: Random); 'Device identification' (Manufacturer: Generic, Model: LoRaWAN 1.0.2 revB - class A - Rx2\_SF12 eu868, Activation: Activation By Personalization (ABP), DevEUI: 70B3D55460000EFB, DevAddr: 01000EFB, NwkKey: E32 5E0A5F4); 'Network parameters' (Connectivity plan: ORESUNDSKRAFT Connectivity Supplier / ORESUNDSKRAFT Bas (999)); and 'Application layer handling' (Application server routing profile: sensefarm-cube02, AppSKey: D7D9, Port: \*). Several fields in the 'Device identification' section are circled in red.

# Security

The device frame counter used by the crypto inside the device is reset to Zero upon reset (press internal black button) of CUBE01 and CUBE02  
(Should be done when battery is changed)

Thus options such as “Disable frame-counter validation” should be set on all LoRa-WAN servers for easy operation.

Actility has a button called “Reset security context” for this.

The screenshot shows a web-based interface for managing a device named CUBE02-70B3D554600000C8. The left sidebar lists various device configurations under 'ThingPark Wireless' and 'Devices'. A red circle highlights the 'Settings' option under the 'Network' section. The main panel is titled 'Node settings' and contains two tabs: 'Alarm Settings' and 'Troubleshooting'. Under 'Alarm Settings', there are sections for 'No uplink activity alarm settings' and two checkboxes for 'Activate threshold1' and 'Activate threshold2', each with a trigger dropdown set to 'After 2 days of inactivity'. Under 'Troubleshooting', a section titled 'Security context' contains a single button labeled 'Reset security context', which is also highlighted with a red circle. The top right corner of the screen shows a user profile for 'Anders Hedb'.

# Set up connection to hub.sensefarm.com - 1 of 2

The screenshot shows the Sensefarm AB - ThingPark Wireless deviceManager interface. The left sidebar displays navigation options: Devices (selected), Network, Settings, Alarms (5), History, Multicast groups, Connectivity plans, AS routing profiles, Application servers (highlighted with a red circle), and Settings. The main area is titled "Application servers". A blue header bar says "Add application servers" and has a "Create" button highlighted with a red circle. Below this is a table titled "Application servers" with columns: Name, ID, Status, and Type. It lists two entries: "sensefarm-cube01-tw" (TWA\_100039957.39645.AS, Active, HTTP Application Server (LoRaWAN)) and "sensefarm-cube02" (TWA\_100039957.39642.AS, Active, HTTP Application Server (LoRaWAN)). At the bottom, a modal window titled "New application server" is open, showing a "Name:" field and a "Type:" dropdown menu. The "Type:" dropdown is also circled in red and lists four options: "HTTP Application Server (LoRaWAN)" (selected), "HTTP Application Server (LoRaWAN)", "HTTP Application Server (Cellular)", and "Kafka Cluster".

Name	ID	Status	Type
sensefarm-cube01-tw	TWA_100039957.39645.AS	Active	HTTP Application Server (LoRaWAN)
sensefarm-cube02	TWA_100039957.39642.AS	Active	HTTP Application Server (LoRaWAN)

# Set up connection to hub.sensefarm.com - 2 of 2

Currently implemented  
API's -

<https://actility.sensefarm.com/CUBE02>

<https://actility.sensefarm.com/CUBE01-TW>

Use the correct one for the devices you have.  
CUBE version is printed on device label and  
available on hub.sensefarm.com device page  
under "Factory defaults".

The "Tunnel interface authentication key" is  
Available for customers upon request, but  
turned off by default.

The screenshot shows the ThingPark Wireless application interface for managing devices and application servers.

**Left Panel (Devices):**

- Network: CUBE02-70B3D554600000C8
  - Network
  - Settings
  - Alarms (5)
  - History
- Multicast groups
- Connectivity plans
- AS routing profiles
  - sensefarm-cube01-tw
- Application servers
  - sensefarm-cube02
  - sensefarm-cube01-tw
- Settings

**Right Panel (Application server configuration):**

**Application server**

- Name: sensefarm-cube02
- ID: TWA\_100039957.39642.AS
- Content Type: JSON (highlighted with a red circle)
- Type: HTTP Application Server (LoRaWAN) (highlighted with a red circle)
- Status: Active (highlighted with a red circle)

**Uplink/downlink security**

- Status: Active
- AS ID: hub-cube02
- Max timestamp deviation: 60 seconds

**Bottom Panel (Uplink/downlink security configuration):**

Save, Close

- AS ID: hub-cube02
- Tunnel interface authentication key: BE-C4-99-C6-9E-9C-93-9E-41-3B-66-39-61-63-6C-61
- Max timestamp deviation (seconds): 60

**Bottom Right Panel (Route configuration):**

Source ports: \* (highlighted with a red circle)

Routing strategy: Sequential (highlighted with a red circle)

Destinations

- Destination: https://actility.sensefarm.com/CUBE02 (highlighted with a red circle)

Add a route

# Feeding sensor data to multiple applications from Actility

Only needed if sensor packets should be sent to more services than hub.sensefarm.com  
( requestinspector.com is a nice debugging tool as an example )

Add an extra application server.

Add the application to the routing profile used.

The screenshot shows the configuration of an Application Server named "Request inspector". The "Application server" tab is active, displaying fields for Name (Request inspector), ID (TWA\_100039957.45432.AS), Content Type (JSON), Type (HTTP Application Server (LoRaWAN)), and Status (Active). Below this, the "Uplink/downlink security" tab shows an Inactive status with a note about max timestamp deviation. The "Route" tab specifies source ports (\*) and a blast routing strategy. The "Destinations" tab lists a single destination URL: <https://requestinspector.com/p/01e62007pkde0ttmgeq5a1jmf>. A red circle highlights the "Request inspector" application under the "Application servers" section in the left sidebar.

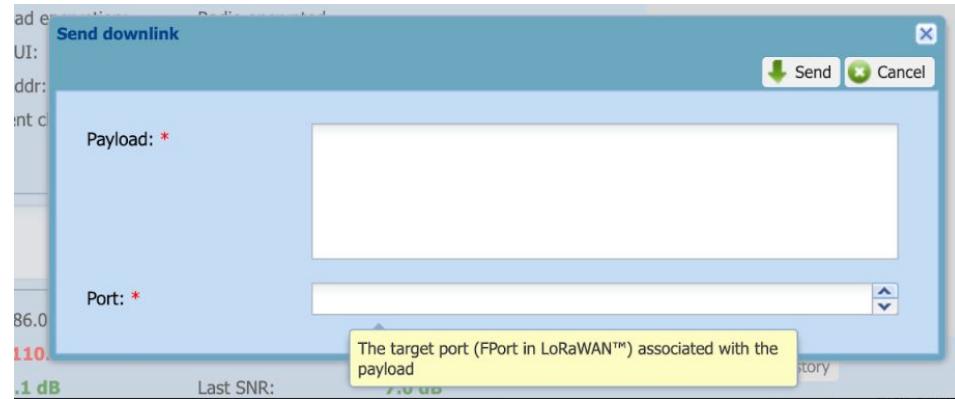
The screenshot shows the configuration of an AS routing profile named "sensefarm-cube01-tw". The "AS routing profile" tab is active, displaying fields for Name (sensefarm-cube01-tw), ID (TWA\_100039957.34218), Type (LoRaWAN), and Is default (unchecked). The "Destinations" tab lists two entries: "Local application server" with Destination "sensefarm-cube01-tw" and another "Local application server" entry with Destination "Request-inspector". A red circle highlights the "sensefarm-cube01-tw" routing profile under the "AS routing profiles" section in the left sidebar.

# Sendind downlink data

Downlink messages can change the update interval.  
Some pre-defined values can be found on this link -

<https://github.com/Sensefarm/protocols/blob/master/Sensefarm-LPP.md#downlink-pre-defined-example-messages>

Cube02 does not care about Fport, so set it to 1.



# Talkpool configuration with hub.sensefarm.com

<https://apps.talkpool.com/>

# Talkpool

apps.talkpool.com

Https URL:

<https://talkpool.sensefarm.com>

Include radio parameters = Yes

The screenshot shows a web browser window with multiple tabs open. The active tab is 'apps.talkpool.com/#/application/70-B3-D5-54-60-00-00-00/customer\_servers'. The page title is 'Edit Customer Server' under the 'Customer Servers' section. The 'Customer Server Configuration form' contains the following fields:

- Customer Server Name:** SensefarmHub
- If Enabled, will include the LoRa radio parameters for the device frames**: A radio button labeled 'Yes' is selected.
- Protocol Type:** A dropdown menu set to 'HTTP(S)'
- HTTP(S) URL:** A text input field containing 'https://talkpool.sensefarm.com'

At the bottom of the configuration form are 'Update' and 'Cancel' buttons. Below the configuration form is a table titled 'Customer Servers' with one entry:

Name	Include Radio Parameters	Protocol Type	Configuration Data	Actions
SensefarmHub	Yes	HTTP	URL: https://talkpool.sensefarm.com	

At the bottom of the table, it says 'Showing 1 to 1 out of 1 entries'. Navigation buttons at the bottom right include 'First', 'Previous', 'Next', and 'Last'.

# Talkpool - Adding a device. “.” “-” must be inserted into EUI and Address fields

admin area

Owner

Device information

Name	70B3D554600001C1
Type	CUBE02
Source	sensefarm
Created	70B3D554600001C1
Latest report	May 13th 2020, 10:33
Latest Message Interval	No Info

Factory Defaults

```
{  
  "uniqueId": "333747073636373734004800",  
  "devEUI": "70B3D554600001C1",  
  "appEUI": "70B3D554600001C1",  
  "appKey": "2A749B3488D5997101CE",  
  "devAddr": "010001C1",  
  "appSKey": "C5487683D17389DF731111",  
  "nwkSKey": "E0FD04CC4779F0D7B5FAD",  
  "generated": "2020-05-13T08:05:30.142Z",  
  "abp": true,  
  "sync": true}
```

The screenshot shows the Talkpool web application interface. On the left, there's a sidebar with 'Talkpool' branding and navigation links for Home, Applications, and Network Activity. The main content area has a blue header bar with the text 'Home / Applications / 70-B3-D5-54-60-00-00-00 / Personalised Devices'. Below the header, there are tabs for Info, Devices, Traffic, Over-The-Air Devices, Personalised Devices (which is selected), and Customer Servers. A sub-header says 'SensefarmTest (70-B3-D5-54-60-00-00-00)'. The 'Personalised Devices' section contains a form titled 'Add New Personalised Device' with instructions: 'To Configure a Personalised Device, please enter Device EUI, Network Address, Application Session Key and Network Session Key'. It includes four input fields: 'Device EUI' (containing '70-B3-D5-54-60-00-01-C1'), 'Network Address' (containing '01:00:01:C1'), 'Application Session Key' (containing 'C5487683D17389DF731111'), and 'Network Session Key' (containing 'E0FD04CC4779F0D7B5FAD'). At the bottom of the form are 'Add Device' and 'Cancel' buttons. Below the form, a table titled 'Personalised Devices Configured to the Application' lists entries. The first entry in the table corresponds to the device being added, with its details (Device EUI, Network Address, Application Session Key, Network Session Key) also displayed above the table. The table has columns for Device EUI, Network Address, Application Session Key, Network Session Key, and Actions.

# Talkpool

Devices must be tagged “CUBE02” for hub.sensefarm.com to accept them.

The screenshot shows a web browser displaying the Talkpool interface at [apps.talkpool.com/#/device/70-B3-D5-54-60-00-01-83/settings](https://apps.talkpool.com/#/device/70-B3-D5-54-60-00-01-83/settings). The page title is "Home / Devices / 70-B3-D5-54-60-00-01-83 / Settings". The main content area is titled "CUBE02 (70-B3-D5-54-60-00-01-83)". Below this, there are tabs for "Info", "Traffic", "Downlink", and "Settings", with "Settings" being the active tab. Under "Settings", there are sub-tabs for "Identification Info" and "Build Info", with "Identification Info" being active. The "Build Info" section contains fields for "Vendor" and "Model". The "Model" field is highlighted with a red oval. The "Vendor" field is empty and has placeholder text "Enter Vendor". The "Model" field contains the value "CUBE02" and has placeholder text "Alphanumeric String (Max 50 Characters). Allowed Special Characters (- . : \_)" above it. Below the "Build Info" section, there are sections for "Firmware", "Serial Number", and "Lora Version", each with an empty input field and placeholder text indicating alphanumeric strings with allowed special characters.

CUBE02 (70-B3-D5-54-60-00-01-83)

Identification Info Build Info

Device Build Info

Vendor

Alphanumeric String (Max 50 Characters), Allowed Special Characters (- . : \_)  
Enter Vendor

Model

Alphanumeric String (Max 50 Characters), Allowed Special Characters (- . : \_)  
CUBE02

Firmware

Alphanumeric String (Max 50 Characters), Allowed Special Characters (- . : \_)  
Enter Firmware

Serial Number

Alphanumeric String (Max 50 Characters), Allowed Special Characters (- . : \_)  
Enter Serial Number

Lora Version

Alphanumeric String (Max 50 Characters), Allowed Special Characters (- . : \_)  
Enter Lora Version

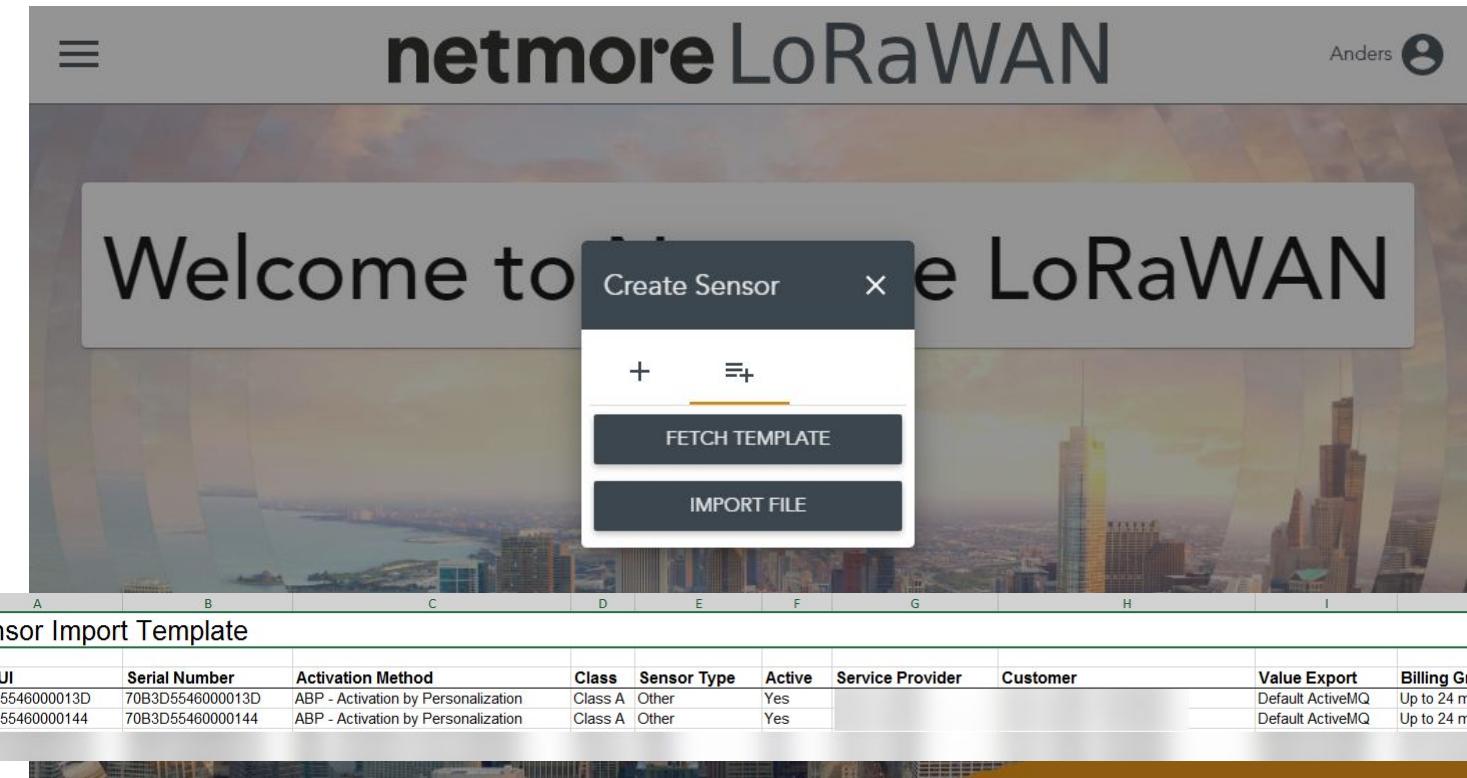
# Netmore configuration with hub.sensefarm.com

<https://portal.blink.services/home>

We really recommend the batch creation

Do one sensor  
manually, check that it  
works. ***Some hidden  
values can only be  
set by Netmore  
support!***

Then do the batch creation:  
Create Sensor, Select batch, Fetch the template, Open it in excel, Fill it with values, re-import

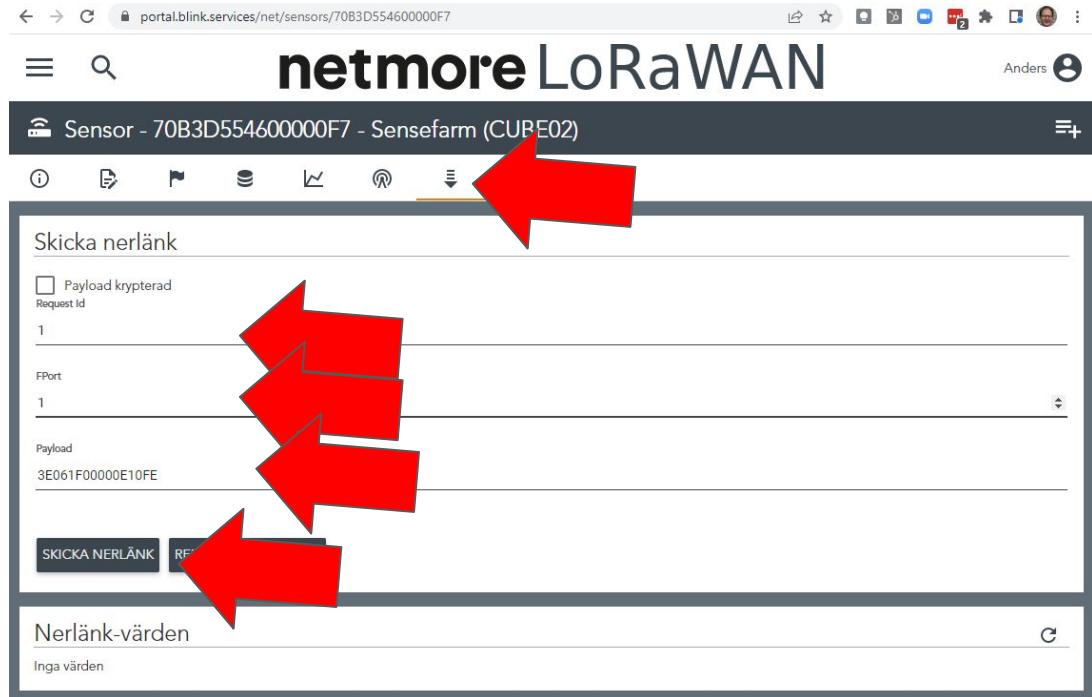


# Downlink changes of timing

Downlink messages can change the update interval.  
Some pre-defined values can be found on this link -

<https://github.com/Sensefarm/protocols/blob/master/Sensefarm-LPP.md#downlink-pre-defined-example-messages>

Cube02 does not care about Fport, so set it to 1.



# Transferring data to hub.sensefarm.com

For a new customer that wish to use hub.sensefarm.com with their own account at the Netmore Lorawan portal, a new MQTT topic must be set up by the Netmore support team.

Sensefarms mqtt-data-account must also be allowed to listen to the new topic, so please contact Sensefarm to work this out with the Netmore Support.

# Chirpstack

<https://www.chirpstack.io/>

# Chirpstack

The image displays three screenshots of the ChirpStack Application Server interface:

- Screenshot 1: Device-profiles / localhost**
  - Shows the "Device-profile name" field set to "localhost".
  - Shows the "LoRaWAN MAC version" field set to "1.0.3".
  - Shows the "Uplink interval (seconds)" field set to "600".
  - Contains a red circle around the "Device-profile name" field.
  - Contains a red circle around the "LoRaWAN MAC version" field.
  - Contains a red circle around the "UPDATE DEVICE-PROFILE" button.
  - Contains a red circle around the "Device-profiles" link in the sidebar.
- Screenshot 2: Applications / localhost / Devices / Create**
  - Shows the "Device name" field set to "70B3D55460000154".
  - Shows the "Device EUI" field set to "70 B3 D5 54 60 00 01 54".
  - Shows the "Device-profile" field set to "localhost".
  - Contains a red circle around the "Device EUI" field.
  - Contains a red circle around the "Device-profile" field.
  - Contains a red circle around the "Disable frame-counter validation" checkbox, which is checked.
  - Contains a red circle around the "Applications" link in the sidebar.
- Screenshot 3: Applications / localhost / Devices / 70B3D55460000154**
  - Shows the "Device address" field set to "01 ( 54".
  - Shows the "Network session key (LoRaWAN 1.0)" field set to "1e 85 0 7 a9 5e e9".
  - Shows the "Application session key (LoRaWAN 1.0)" field set to "B2 1C 4B AF AE".
  - Contains a red circle around the "Device address" field.
  - Contains a red circle around the "Network session key" field.
  - Contains a red circle around the "Application session key" field.

Create a device profile

1.0.3 protocol ( or less )

Application

**Mark “Disable frame-counter-validation” !**

Activation-tab will show for ABP keys entering

# Yggio

<https://ygg.io>

# Yggio version 2

Select IoT-nodes

Press “New IoT-node” at the top of the screen and follow the wizard. Device model name is “sensefarm-cube02-sm”

Select the new node from the list.

*Obs! There is a translated xxx(simple-lora-node)*

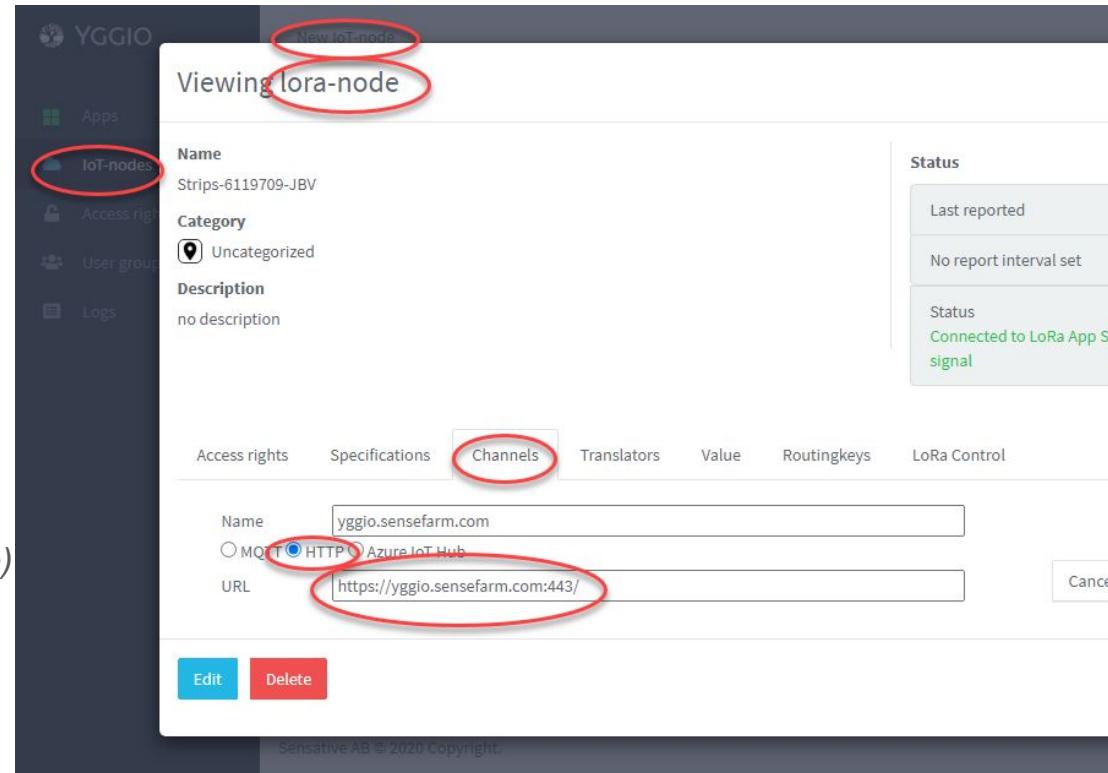
*Do not select that node as we need the raw data!*

Select Channels

Select HTTP

Enter URL:

<https://yggio.sensefarm.com:443/>



# Yggio version 3 ( <https://kraftringen.yggio.net> )

Login, click "New IoT node" ( it's not marked as a button )

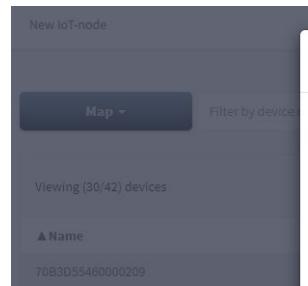
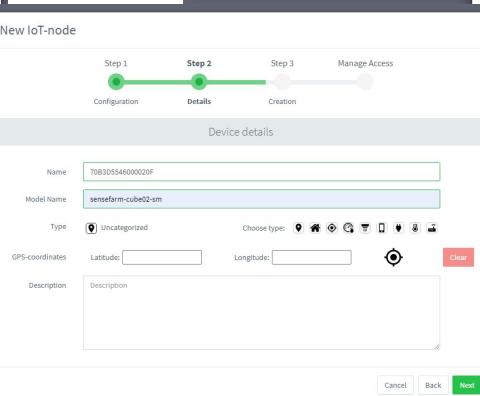
Select "Lora", "Actility Thingpark", "ABP"

Enter correct values ( found on hub.sensefarm.com -> Devices->Edit->Show Advanced Info ) for Device ID, Device address, Network Session Key, Application Session Key.

Select "Class A", "Next"

Name the device, select Model Name: "sensefarm-cube02-sm"

Press Next, Create. Skip privileges/sharing if not needed.

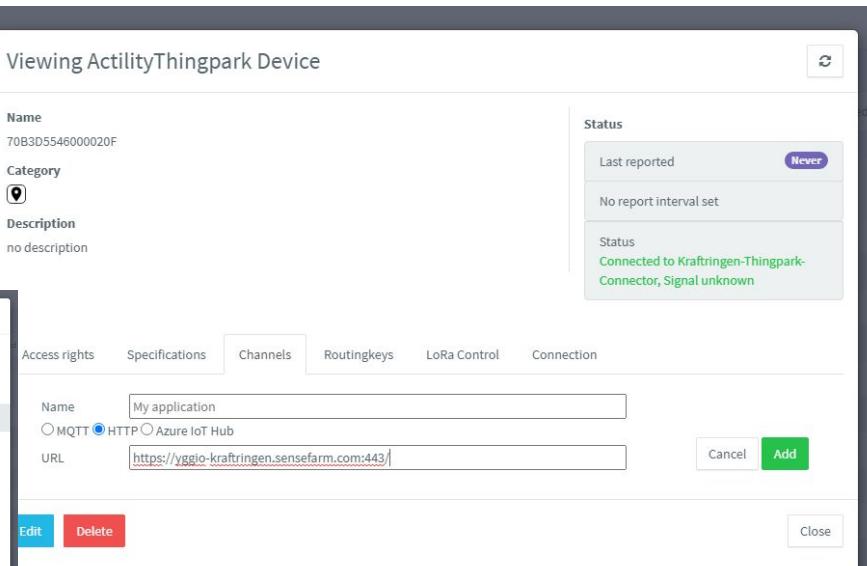


Once created, do...

Select the node again from the list.

Select "Channels"->"HTTP"

Enter "https://yggio-kraftringen.sensefarm.com:443/"



# The Things Network V3

<https://console.cloud.thethings.network/>

# Application

<https://ttn.sensefarm.com>

The screenshot shows the 'Edit webhook' configuration page in The Things Stack Community Edition. The top navigation bar includes links for Overview, Applications (which is highlighted with a red box), Gateways, and Organizations. The sidebar on the left lists various integration options: Overview, End devices, Live data, Payload formatters, Integrations (expanded), MQTT, Webhooks (highlighted with a red box), Storage Integration, AWS IoT, Azure IoT, LoRa Cloud, Collaborators, API keys, and General settings.

The main content area is titled 'Edit webhook'. It provides instructions for using webhooks to send application-related messages. A 'General settings' section contains fields for 'Webhook ID\*' (ttn-sensefarm-com), 'Webhook format\*' (JSON, highlighted with a red box), 'Base URL\*' (https://ttn.sensefarm.com, highlighted with a red box), and 'Downlink API key' (represented by a redacted string). Below these are sections for 'Request authentication' (checkbox for basic auth) and 'Additional headers' (button to add header entry).

The 'Filter event data' section has a button to 'Add filter path'.

The 'Enabled event types' section allows defining optional paths for specific event types. It includes checkboxes for 'Uplink message' (/path/to/webhook, checked) and 'Normalized uplink' (/path/to/webhook, checked). A 'Join accept' checkbox is also present at the bottom.



None (class A only)



Do not press  
"Generate",  
copy from  
sensor info

## Register end device

Does your end device have a QR code? Scan it to speed up onboarding.

Scan end device QR code

Device registration help

sensefarm-hub-application

Overview

End devices

Live data

<> Payload formatters

Integrations

Collaborators

API keys

General settings

End device type

Input Method

Select the end device in the LoRaWAN Device Repository

Enter end device specifics manually

Frequency plan \*

Europe 863-870 MHz (SF12 for RX2)

LoRaWAN version \*

LoRaWAN Specification 1.0.2

Regional Parameters version \*

RP001 Regional Parameters 1.0.2 revision B

Show advanced activation, LoRaWAN class and cluster settings

Activation mode

Over the air activation (OTAA)

Activation by personalization (ABP)

Define multicast group (ABP & Multicast)

Additional LoRaWAN class capabilities

None (class A only)

Provisioning information

DevEUI

... . . . . . . . .



0/50 used

Device address

... . . . .



AppKey

... . . . . . . . . . . . . . . .



Nonce

... . . . . . . . . . . . . . .



End device ID

my-new-device

This value is automatically prefilled using the DevEUI

After registration

View registered end device

Register another end device of this type

**Register end device**

After registering the device -  
Extra settings  
needs to be set  
under  
General settings->  
Network Layer ->  
Advanced Mac  
Settings

The screenshot shows the 'THE THINGS STACK Community Edition' interface. At the top, there are logos for 'THE THINGS NETWORK' and 'THE THINGS STACK Community Edition'. The navigation bar includes 'Overview', 'Applications' (which is selected), 'Gateways', and 'Organizations'. Below this, the 'Applications' section shows a tree structure: Applications > sensefarm-hub-application > End devices > eui-70b3d57ed0057be7 > General settings. The 'End devices' section for the device 'eui-70b3d57ed0057be7' (ID: eui-70b3d57ed0057be7) is displayed. It shows 'Live data' (n/a), 'Payload formatters' (n/a), and 'Integrations'. A red box highlights the 'General settings' tab in the navigation bar at the bottom right of the page.

## Network layer

LoRaWAN network-layer settings, behavior and session

[Collapse](#)

### Frequency plan ⓘ \*

Europe 863-870 MHz (SF12 for RX2)

### LoRaWAN version ⓘ \*

LoRaWAN Specification 1.0.2

### Regional Parameters version ⓘ \*

RP001 Regional Parameters 1.0.2 revision B

### LoRaWAN class capabilities

Supports class B

Supports class C

### Activation mode ⓘ \*

Over the air activation (OTAA)

Activation by personalization (ABP)

Define multicast group (ABP & Multicast)

### Device address ⓘ \*

26 0B 51 67

Generate

### NwkSKey ⓘ \*

• • • • • • • • • • • • • • • • •

Generate

### Session and MAC state reset ⓘ

[Reset session and MAC state](#)

### Advanced MAC settings ▾

[Save changes](#)

## Advanced MAC settings ^

Frame counter width  ⓘ

16 bit

32 bit

Rx1 delay  ⓘ

1

sec

Desired Rx1 delay  ⓘ

5

sec

Rx1 data rate offset  ⓘ

0

Desired Rx1 data rate offset  ⓘ

0

Resets frame counters  ⓘ

⚠ Resetting is insecure and makes your device susceptible for replay attacks

Rx2 data rate index  ⓘ

0

Desired Rx2 data rate index  ⓘ

0

Rx2 frequency  ⓘ

869,525

MHz

869,525

MHz

Desired Rx2 frequency  ⓘ

869,525

MHz

Maximum duty cycle  ⓘ

100%

Desired maximum duty cycle  ⓘ

100%

Factory preset frequencies  ⓘ

+ Add Frequency

List of factory-preset frequencies. Note: order is respected.

Status count periodicity  ⓘ

200

messages

Status time periodicity  ⓘ

86400

seconds

Adaptive data rate (ADR)  ⓘ

Dynamic mode

Static mode

Disabled

[Save changes](#)