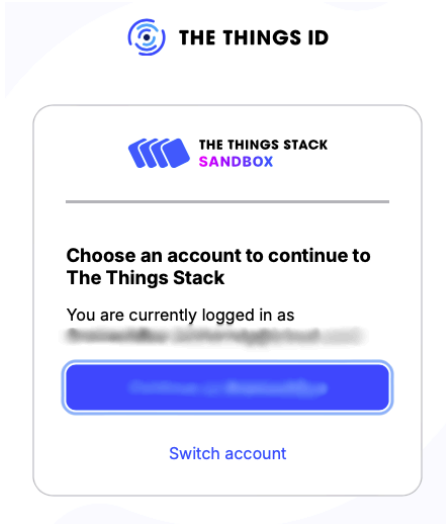


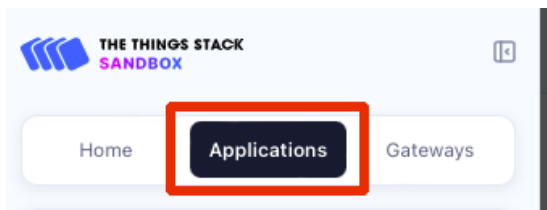
Konfiguration Lora TTN

Login bei:

<https://id.thethingsnetwork.org>



In Bereich Applications wechseln



Auswahl 'Add application'



Felder ausfüllen

Create application

Within applications, you can register and manage end devices and their net data. After setting up your device fleet, use one of our many integration opt to pass relevant data to your external services.
Learn more in our guide on [Adding Applications](#).

Application ID*

Application name

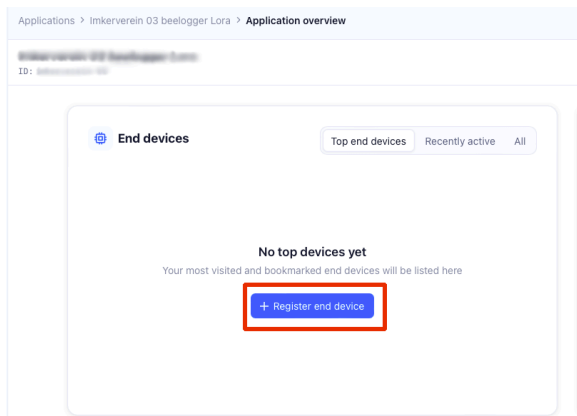
Description

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

Application-ID wird von Things Stack vergeben und kann anschließend nicht geändert werden. Nur Kleinbuchstaben, ohne Leerschlag.

'Application name' kann später noch geändert werden.

End Device registrieren



Erweiterte Registrierung - Teil 1

Register end device

Does your end device have a LoRaWAN® Device Identification QR Code? Scan it to speed up onboarding.

[Scan end device QR code](#) [Device registration help](#)

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 (SF9 for RX2 - recommended)

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)

Wie oben ausfüllen

'Show advanced activation, LoRaWAN class and cluster settings anwählen

Erweiterte Registrierung - Teil 2

DevEUI, Device address, AppSKey und NwkSKey generieren
End device ID benennen (**kann später nicht geändert werden**).

Additional LoRaWAN class capabilities ⓘ
None (class A only) | v

Network defaults ⓘ
 Use network's default MAC settings

Cluster settings ⓘ
 Skip registration on Join Server

Provisioning information

DevEUI ⓘ
[Hex input field] /50 used

Device address ⓘ *
[Hex input field]

AppSKey ⓘ *
[Hex input field]

NwkSKey ⓘ *
[Hex input field]

End device ID ⓘ *
[Text input field]

In der Zeile rechts von 'Device overview' 'Settings' danach 'Advanced MAC Settings' anwählen

... ..

Session and MAC state reset ⓘ

Advanced MAC settings

Frame counter width ⓘ
 16 bit 32 bit

Rx1 delay ⓘ sec Desired Rx1 delay ⓘ sec

Rx1 data rate offset ⓘ Desired Rx1 data rate offset ⓘ

Resets frame counters ⓘ
⚠ Resetting is insecure and makes your device susceptible for replay attacks

Rx2 data rate index ⓘ Desired Rx2 data rate index ⓘ

Rx2 frequency ⓘ MHz | v Desired Rx2 frequency ⓘ MHz | v

Maximum duty cycle ⓘ | v Desired maximum duty cycle ⓘ | v

Factory preset frequencies ⓘ

Bei 'Factory preset frequencies' die Frequenzen des Gateways eintragen, mit dem sich die End Device verbinden soll => siehe Liste von 'Multi_LORA.ino'

```
#if LORA_CHANNELS == 1
  LMIC_setupChannel(0, 868100000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(1, 868100000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(2, 868100000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band

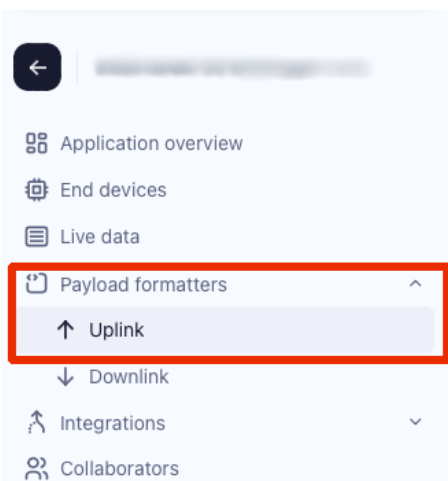
#elif LORA_CHANNELS == 3
  LMIC_setupChannel(0, 868100000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(1, 868300000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(2, 868500000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band

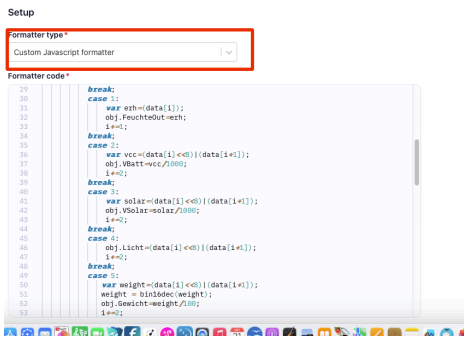
#else
  LMIC_setupChannel(0, 868100000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(1, 868300000, DR_RANGE_MAP(DR_SF12, DR_SF7B), BAND_CENTI); //
g-band
  LMIC_setupChannel(2, 868500000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(3, 867100000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(4, 867300000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(5, 867500000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(6, 867700000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  LMIC_setupChannel(7, 867900000, DR_RANGE_MAP(DR_SF12, DR_SF7), BAND_CENTI); //
g-band
  // LMIC_setupChannel(8, 868800000, DR_RANGE_MAP(DR_FSK, DR_FSK),
BAND_MILLI); // g2-band
```

In der Seitenleiste Payload formatiert -> Uplink anwählen,

Im Menu 'Formatter type' 'Custom Javascript formatter' anwählen

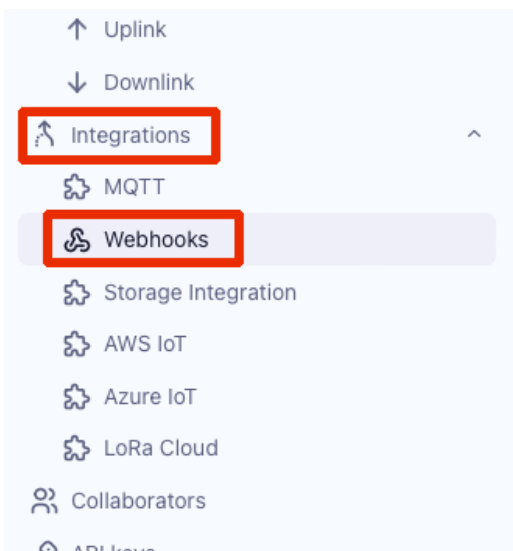
Den Inhalt von 'Formatter code' ersetzen mit der Datei 'payloadformatter_220227.js' aus dem Sketchordner





Save changes nicht vergessen...

Um die Daten an den beelogger communityServer zu übertragen ist ein 'Webhook' einzurichten. Hierzu ist in der linken Menüleiste unter 'Integrations' der Unterpunkt 'Webhooks' auszuwählen, anschließend 'Add webhook' und 'Custom webhook'



General settings

Webhook ID *

Webhook format *
JSON

Base URL *
https://community.beelogger.de/

Downlink API key

The API key will be provided to the endpoint using the "X-Downlink-Apikey" header

Request authentication ②

Use basic access authentication (basic auth)

Additional headers

+ Add header entry

Filter event data ②

+ Add filter path

Enabled event types

For each enabled event type an optional path can be defined which will be appended to the base URI

Uplink message /path/to/webhook

An uplink message is received by the application

Als Webhook ID bietet es sich an, das beelogger Verzeichnis aus der URL zu wählen z.B. beelogger 1, beelogger 2, beelogger 3, ... oder Duo1, Duo2, Duo3, usw..

Für das "Webhook format" ist "JSON" einzustellen.
Als "Base URL" ist der Link zur jeweiligen beelogger_log.php anzugeben.
Beispiele:

System mit einer Waage:
https://community.beelogger.de/UserName/beelogger1/beelogger_log.php?Passwort=deinpasswort&LORA=1

Zurück zu 'Device overview' => 'End device info' => 'Messaging' => 'Simulate uplink' kann unter Payload die Musterdatei aus der beelogger-Website eingegeben werden.

11 02 02 12 48 01 07 EF 02 1A 03 11 07 04 00 08 05 12 34 06 00 11 14 27 89

Mein beelogger Universal 1
ID: beeloggeruniversal1

Last seen info unavailable ↑ n/a ↓ n/a

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

Uplink Downlink

Simulate uplink

FPort *
1

Payload
11 02 02 12 48 01 07 EF 02 1A 03 11 07 04 00 08 05 12 34 06 00 11 14 27 89
The desired payload bytes of the uplink message

Simulate uplink

Sind alle Angaben korrekt gemacht, zeigt sich der uplink unter 'Live Data'

Applications > Imkerverein 03 beelogger Lora > Application data

ID: [redacted] Last activity 2 minutes ago

TIME	ENTITY ID	TYPE	DATA PREVIEW	Verbose stream	Ex
↑ 19:22:02	[redacted]	Forward uplink data message	DevAddr: [redacted] Payload: { Aux1: 78.5, FeuchteIn: 72, Fe		
↑ 19:14:20	[redacted]	Forward uplink data message	DevAddr: [redacted] Payload: { Aux1: 78.5, FeuchteIn: 72, Fe		
↑ 19:13:37	[redacted]	Forward uplink data message	DevAddr: [redacted] Payload: { Aux1: 78.5, FeuchteIn: 72, Fe		
⊙ 18:09:44	[redacted]	Create end device			
⊙ 18:03:30	[redacted]	Issue DevEUI for applicati...			
⊙ 17:50:03	[redacted]	Create application			

Damit ist die Konfiguration abgeschlossen.