

Node-red

Installation and running node-red

Most steps are all identical to the manual from Frank (https://github.com/galagaking/Wemos_Node) and will not be discussed here.

Installation of node-red on your pc or mac you can find at: <https://nodered.org/docs/getting-started/installation.html>

(go to terminal or cmd and paste the following code to install node-red:

```
npm install -g --unsafe-perm node-red
```

Start node red after installation (in terminal or cmd) with:

```
node red
```

Now you can go to the follow address:

```
Server now running at http://127.0.0.1:1880/
```

Location extraction with node-red

Location based data by HERE:

We will use the HERE Positioning API:

<https://developer.here.com/documentation/positioning/topics/what-is.html>

Data we are going to feed, is the WiFi (WLAN) MAC address of nearby gateways. What you will get back is a GPS coordinate with an accuracy value.

Create a free account at this page: <https://developer.here.com/?create=Freemium-Basic&keepState=true&step=account>

You will need a name, email address and password, plus type over the shown phrase/code.

here

Register for a HERE account

Already have a HERE account? [Sign in](#)

First name

Last name

Email

Password

Country/region

Please select

Security check

Type the characters you see.

3 g h v D E

[Get a new code](#)

Register for a HERE account

Get started for free
Freemium Plan

0€
Build your app for free

250K
transactions per month

5K SDK MONTHLY ACTIVE USERS
250 MANAGED ASSETS PER MONTH

Pay as you grow
Over 250K transactions, pay 1€ per additional 1,000 transactions

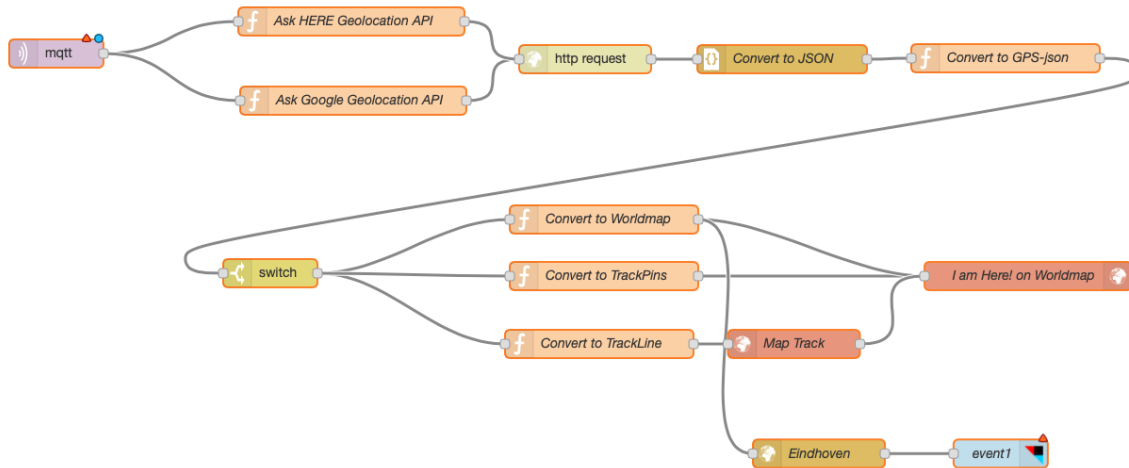
Once your account is created, create a new project (<https://developer.here.com/projects>)

You will get an AppId and an AppCode, that is all you need for the WiFi localization project.

Node RED config

Top right, click the hamburger icon (three lines), Manage palette. Search for TTN and install. Repeat for WorldMap. Click the hamburger icon again, import > clipboard.

Open the text document and copy the contents, paste it into the textbox. Select “New Flow” and click Import. You will now see this as the design of the complete flow:



This is what these flow steps will do:

- 1) Get data from The Things Network – Setup APP Credentials, see manual from Frank for steps
- 2) Prepare request for either HERE or Google – Fill in your API credentials in the one you will be using. For Google see manual from Frank, for HERE see above.
- 3) Perform the request to either HERE or Google
- 4) Convert the returned data into JSON format
- 5) Make sure that the returned data from either HERE or Google is in the same format, such that we can use it on the map later on.
- 6) Switch means the data is treated as separate channels
- 7) Convert:
 - a. Worldmap: current location is shown with a large marker
 - b. TrackPins: previous locations are shown with small markers
 - c. TrackLine + Map Track: the path between the locations is shown as a line
- 8) WorldMap: open with CTRL+SHIFT+M
- 9) Go to geofence node. And draw the area you wish to be notified in with the sensor
- 10) IFTTT notifications
 - a. Go to www.ifttt.com and make an account.
 - b. Start with a new applet within www.ifttt.com
 - c. Select for THIS: Webhook: Receive a web request

- d. Select for the Eventname: ttn_location
- e. Select for THAT: Sms action (you might have to open up your sms channel)
- f. Add ingredient if you wish
- g. Go to webhook documentation and copy the key
- h. Paste the key into your node-red ifttt node into key

Delete the line between 1 and 2 for the API you will not be using.

COLLOS integration

ref: <https://www.thethingsnetwork.org/docs/applications/collos/quick-start.html>

This guide walks you through applying for Collos membership, subscribing to the APIs and configuring the Collos integration in The Things Network Console.

Apply for a Collos membership: <http://preview.collos.org/Home/Apply>

When your membership has been approved, sign in to the Collos portal

Go to Products

Click Semtech LoRaWAN Localization

Click Subscribe to subscribe to the APIs

Getting your subscription key

Once your subscription has been approved, you can find your Collos subscription key.

Sign in to the Collos portal

Click on your name in the top right

Click Profile

Click Show to show your Collos subscription keys

Your subscriptions

Subscription details		Product
Subscription name	1 Semtech LoRaWAN Localization	Rename 1 Semtech LoRaWAN Localization
Started on	01/16/2018	
Primary key	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	Show Regenerate
Secondary key	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	Show Regenerate

You can use both Primary key and Secondary key for the Collos integration.

Configuring the integration

Sign in to The Things Network Console

Under Applications, go to your application

Go to Integrations

Click add integration

Enter a Process ID, for example rssi or tdoa

Select an Access Key. This key should have at least the devices rights to update the location in the device registry

In URL, enter one of the Collos API endpoints:

LoRa TDOA + WiFi: Copy  <https://api.preview.collos.org/localization-lora-recipes/v1/loraWifi>



LoRa TDOA: Copy  <https://api.preview.collos.org/semtech-localization-algorithms/v1/tdoa>




LoRa RSSI: Copy  <https://api.preview.collos.org/semtech-localization-algorithms/v1/rssi>



Enter your Collos subscription key

Enter the Cayenne channel. If provided, the integration will send the location of your devices to myDevices Cayenne as GPS on the specified channel

Click Add integration 

To compare results from the different algorithms, you can add multiple integration processes for the three algorithms available and use different Cayenne channels.



Collos (v2.7.0)

Semtech Corporation

Collos offers a collection of location-ready APIs all allowing free prototyping with instant sign-up. What is more, within the Collos framework and market place it is easy to build on top of existing technology adding intelligence and learning to make new and powerful location services. Your new location service can be kept private or shared back to Collos for others to use. When sharing back to Collos, you set the price of using it - it can even be free, if you choose.

[documentation](#) [support](#)

Process ID

The unique identifier of the new integration process

rss



Access Key

The app access key

default key

devices

messages



URL

The URL of the endpoint

https://api.preview.collos.org/semtech-localization-algorithms/v1/rss



Method

The HTTP method to use

POST



Collos subscription key

c6b4e19f041a47418133a8c9f1db2de4




Cayenne channel

The resolved location will be sent to myDevices Cayenne to this channel

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- i.  You have now successfully configured the Collos integration. You will now see your device moving in The Things Network Console as well as in myDevices Cayenne.

LOCATION

