Gateway LoRa LORIX One

In this document will be all the steps required to set up and configure this gateway in order to successfully communicate with The Things Network you should always read the user manual (https://www.lorixone.io/wiki/Main_Page).

1. Unboxing

In the box you should have one gateway, one antenna, one PoE adapter, one power source and one set of zip ties

Figure 1 LORIX One box

Figure 2 The Gateway

Figure 3 Gateway and Antenna

Figure 4 PoE adapter

2. Mounting

For this step you need an extra Ethernet cable.

Figure 5 Mounting Antenna

Figure 6 Connections

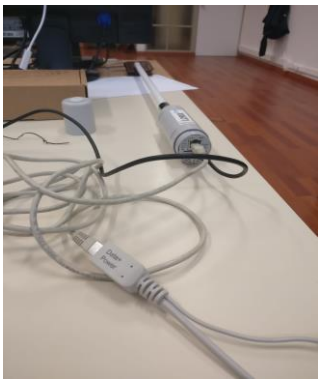

Figure 7 Final Result for Tests

Figure 8 Final Result for deployment

3. Configuration

CONNECTIVITY/INTERFACE

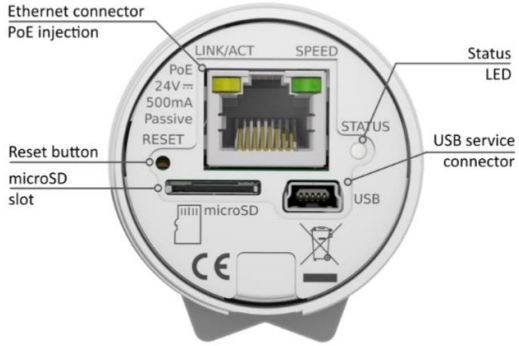

Figure 9 Connectivity/Interface

For the configuration part you can choose from connect directly from USB, and for this use you need to set the baud rate to 115200, Data bits to 8, Stop bits 1, Parity and Flow Control None, you should also check in the wiki for lorix programing tool.

I used the SSH option if you are using windows, download PuTTy, (the default ip is 192.168.1.50), our gateway is in the 192. 168.1.250 on port 22.

The credentials need will be given in a separate file.

Ok now you should see something like this:

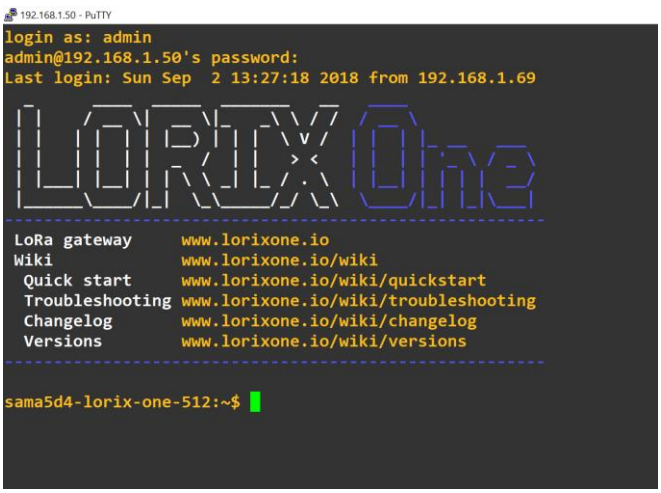

Figure 10 LORIX Home

Now lets change the hostname just type: **sudo** nano /etc/hostname

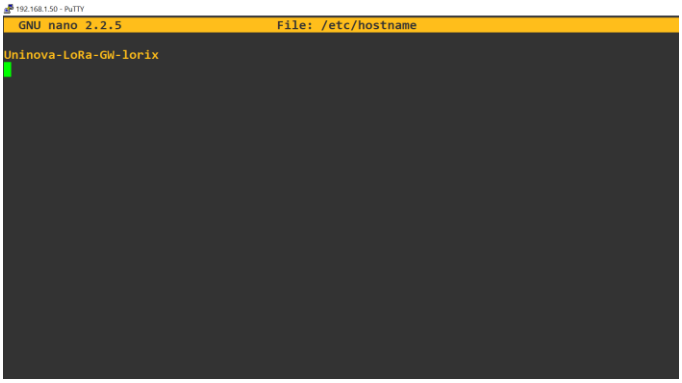

Figure 11 Change Hostname

Select the right network configurations : **sudo** nano /etc/network/interface

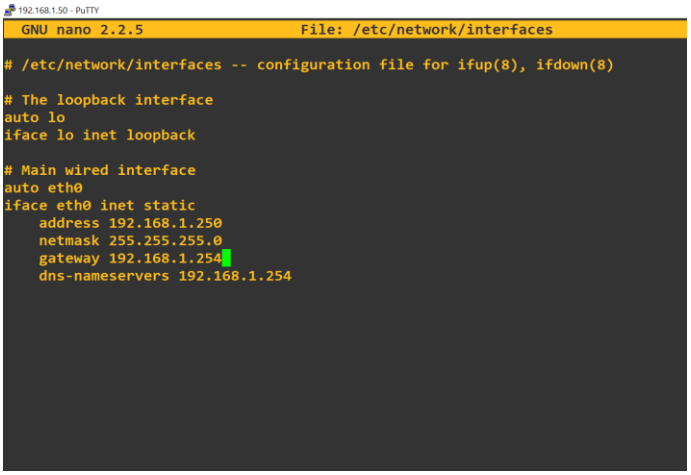

Figure 12 Change network/interfaces

This gateway is configured to connect to TTN so you need to update the gateway ID:

cd /opt/lorix/utils/
sudo ./update_gwid.sh /opt/lorix/clouds/ttn/global_conf.json

Figure 13 Update Gateway ID

By default the Gateway is working with loriot, you need to change it for TTN:

```
/etc/init.d/clouds-manager.sh stop
```

```
/etc/init.d/clouds-manager.sh configure
```

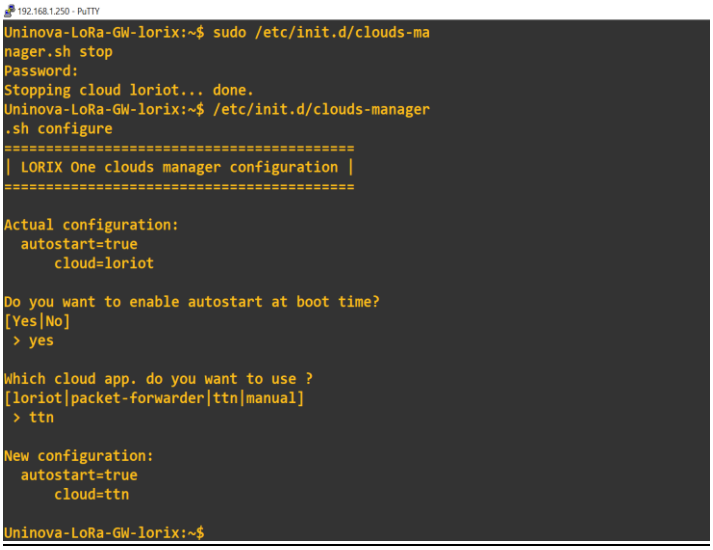

Figure 14 Update Gateway for TTN

Update the local_conf.json

```
cd /opt/lorix/clouds/ttn/
nano cp local_conf.json
```

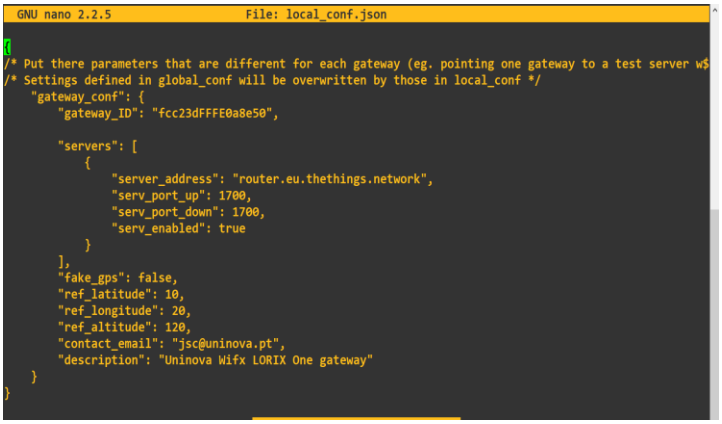

Figure 15 Update local_conf.json

This step is quiet important because every time you do the command “opkg upgrade” it will be reset to the default value

```
Uninova-LoRa-GW-lorix:/opt/lorix/clouds/ttn$ sudo cp local_conf.json local_conf.json.bk1911
Uninova-LoRa-GW-lorix:/opt/lorix/clouds/ttn$
```

Figure 16 Backup local_conf.json

Read the log files

```
cd /var/log
nano messages
```

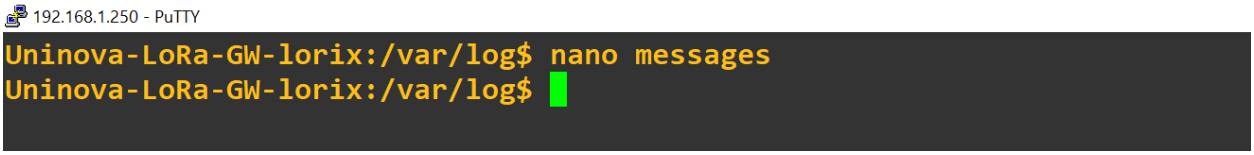

Figure 17 Read log file

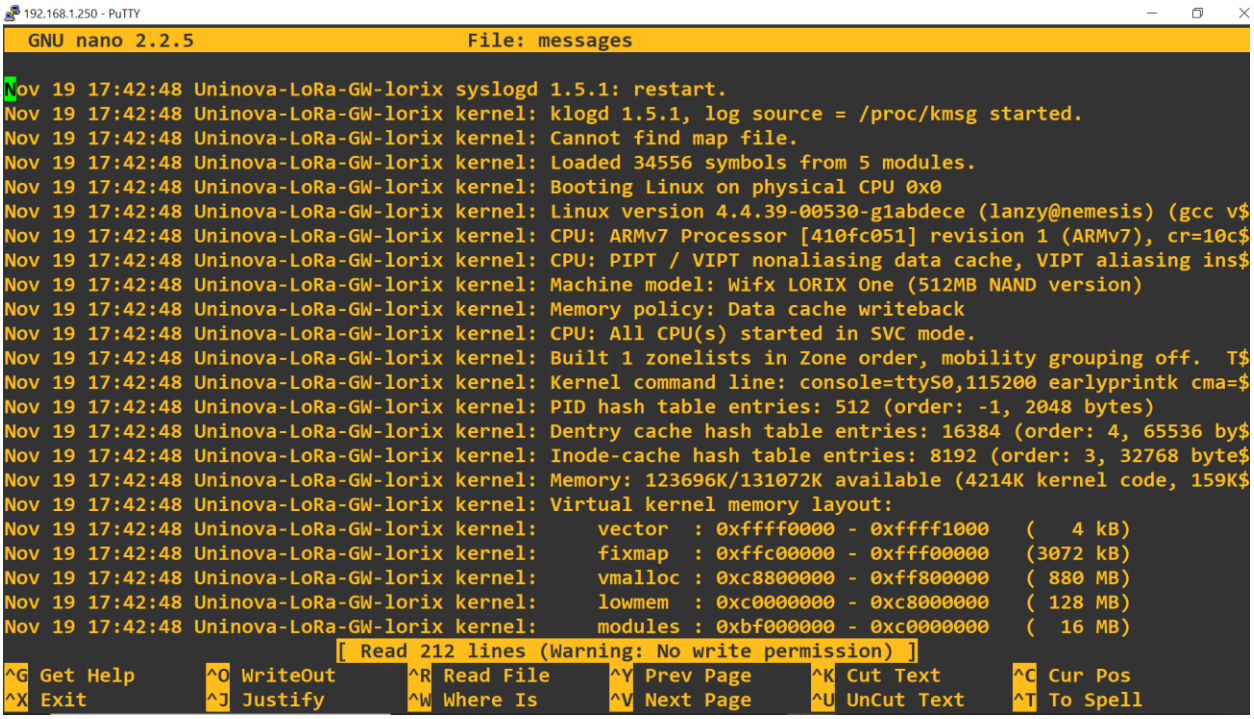

Figure 18 Output log file

4. The Things Network

The last part now in the TTN console (https://console.thethingsnetwork.org/) choose gateways, click in register gateway, and don't forget to select "I'm using the legacy packet forwarder", put Europe in your frequency Plan and choose the location you can do this by clicking the map , put the right antenna Placement and enter Register Gateway.

In the next screen you can fill in more information such as brand, model, antenna if you are only doing some test you can put the visibility as private, by doing this your gateway will not appear in the ttn map.

If you follow all steps right now in this screen should be a green icon saying "Status Connected" !!!

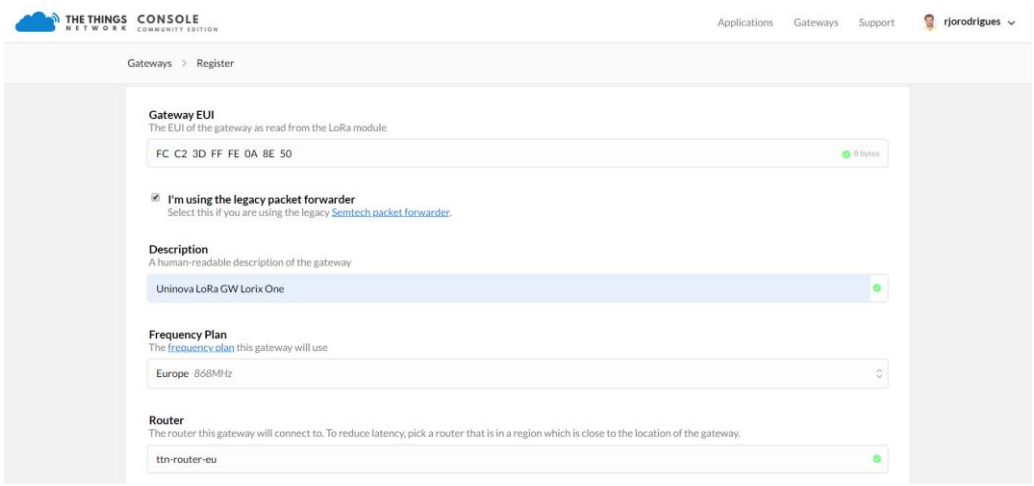

Figure 19 TTN Register Gateway

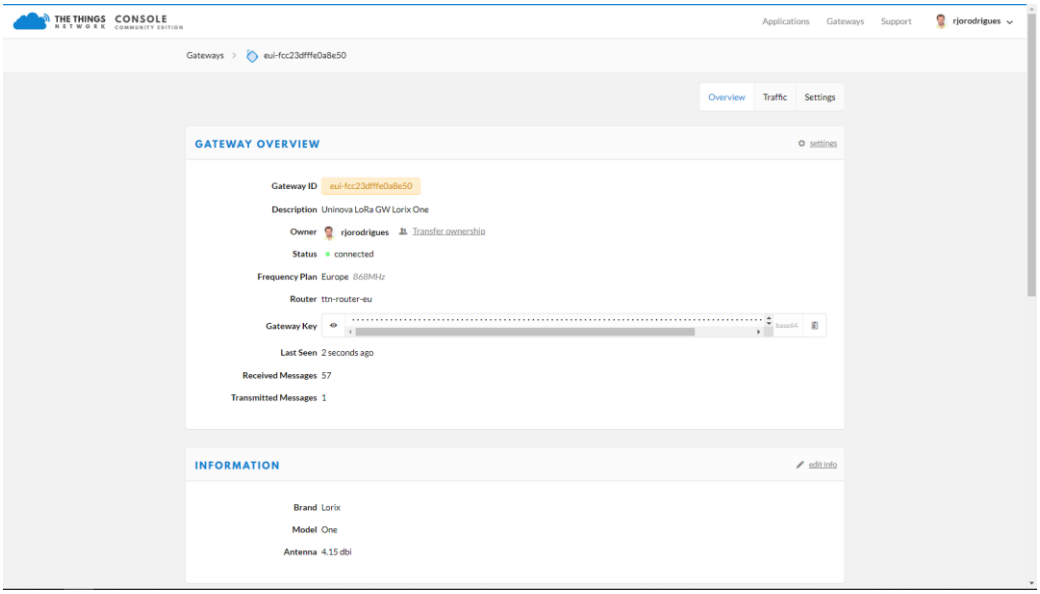

Figure 20 TTN Gateway Connected

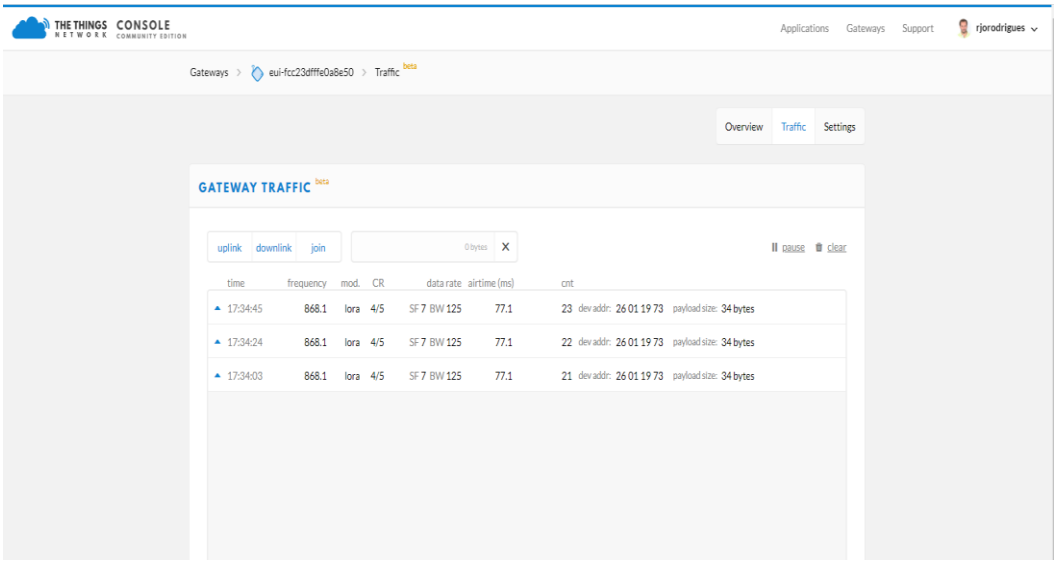

Figure 21 TTN Gateway Receiving Traffic

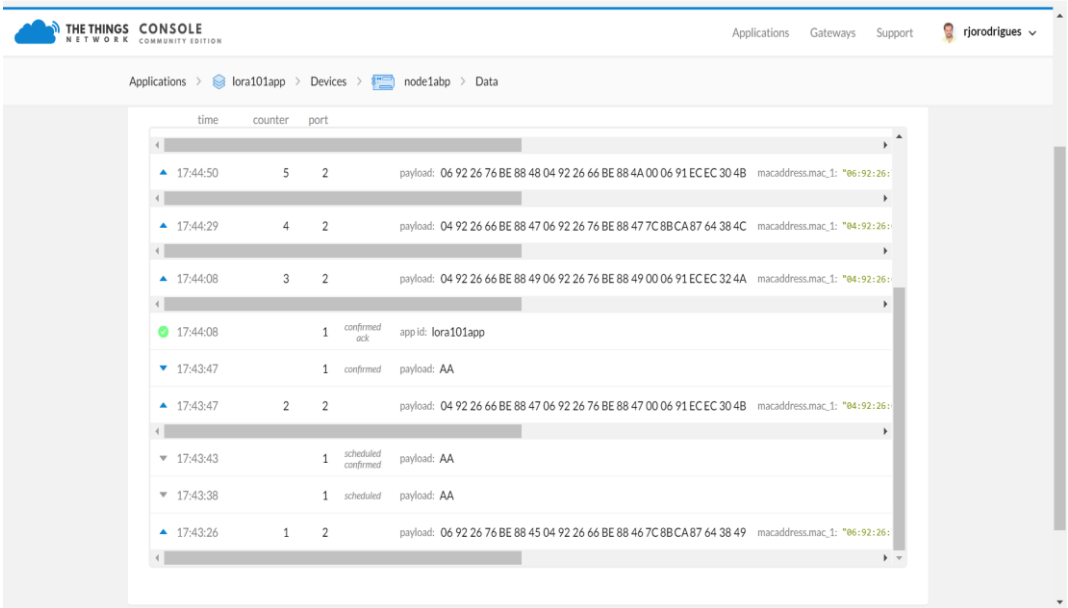

Figure 22 TTN Node Connected to Gateway

5. References

- https://www.lorixone.io/wiki/Main_Page
- https://www.lorixone.io/sites/default/files/2018-11/LORIX%20One%20user%20manual%20EN.pdf
- https://www.lorixone.io/en/products
- https://www.thethingsnetwork.org/labs/story/install-awesome-lorix-one-gateway