



## Quick Start Guide

# SETTING UP LORAWAN SERVICES

1. Connect the gateway to a local network with working DHCP, see what IP gets assigned to device “nas-lgw-[last 5 digits of DevEUI]” (the same as on the root password label)

2. Connect to IX10x1 via SSH: Open terminal/console/putty and connect using

```
ssh root@[IP from step 1]
```

Password is on the label.

3. Configure APN for model IX1011 only (with model IX1001 proceed to step 4)

3.1 Run the following command (change the **yourapn.internet** to the correct APN address )

```
sed -i -e “s%internet.tele2.ee%yourapn.internet%g” /etc/ppp/chat/cellular.chat
```

Or edit the /etc/ppp/chat/cellular.chat file directly.

Restart the Cellular service:

```
systemctl restart cellular
```

3.2 User and password setup (if needed) edit the following lines in /etc/ppp/peers/cellular.provider

```
user “your_usr”  
password “your_pass”
```

Restart the Cellular service:

```
systemctl restart cellular
```

4. Configure LoRaWAN service: open local\_conf.json in editor:

```
vi /opt/nas-lgw/local_conf.json
```

4.1 Modify LoRaWAN server name in “server\_address” variable, replace with your loraserver IP/name (press “a” for append). Modify up/down ports, location latitude/longitude and other info if needed.

Save with

```
ESC, :wq!
```

5. Restart service with

```
systemctl restart nas-lgw
```

## 6. Other files that may need configuring:

6.1 `/opt/nas-lgw/start.sh`

- Packet forwarder start script. Resets LoRaWAN concentrator and checks for internet connectivity before starting packet forwarder. If the gateway does not have internet access, replace google.com with Your LoRaWAN server IP/name.

6.2 `vi /opt/nrpe/nrpe_local.cfg`

- Edit Nagios/Naemon monitoring "allowed\_hosts" variable for monitoring server IP

6.3 `vi /opt/setup/firewall.sh`

- Edit ip tables firewall configuration, add rules to allow for monitoring connections (default NRPE port 5666). Apply configuration by running script:

```
/opt/setup/firewall.sh
```

## Setting up static IP example with connmanctl

Identify the connection name:

```
connmanctl services
```

```
*AR Wired                ethernet_00142d4ca999_cable
```

Configure the connection:

```
connmanctl config ethernet_00142d4ca999_cable --ipv4 manual 192.168.1.99  
255.255.255.0 192.168.1.1
```

Other option is to manually modify the connman configuration:

```
vi /var/lib/connman/ethernet_00142d4ca999_cable/settings
```

```
[ethernet_00142d4ca999_cable]  
Name=Wired  
AutoConnect=true  
IPv4.method=manual  
IPv4.netmask_prefixlen=24  
IPv4.local_address=192.168.1.99  
IPv4.gateway=192.168.1.1
```

Then restart connman

```
systemctl restart connman
```

# SAFETY NOTICES

1. Read, follow, and keep these instructions.
2. Heed all warnings.
3. Only use attachments/accessories specified by the manufacturer.

 **WARNING:** Do not power on without antenna.

 **WARNING:** Do not use this product in a location that can be submerged by water.

# REVISION HISTORY

0.1 - First draft

0.2 - Cellular configuration added