Gateway Users Guide

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iQ
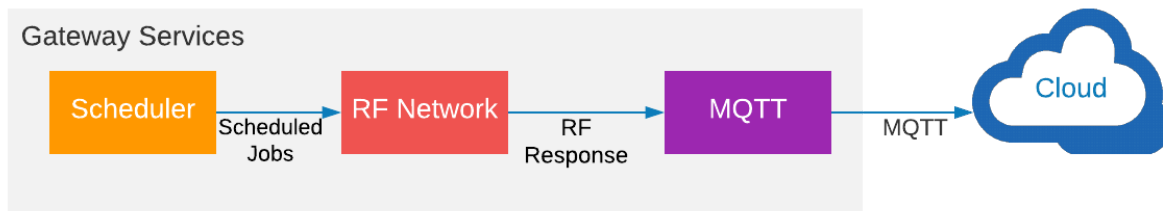HOME

Contents

1 Overview

In this guide you will learn about how to use IQ Home gateways with basic setup.

2 Use Cases

2.1 Periodical Temperature Measurement

Sending periodically collected temperature values to the cloud from the sensors in the RF network can be done by using the *Scheduler* interface in the gateway.

The *Scheduler* can send periodical requests to the RF Network. The response to the RF Network requests contains the RF sensor values. The response can be sent directly to the Cloud via MQTT.

Example

In this example the scheduler requests for temperature values from IQ Home Sensors in every 10 seconds. The response will be published to the *test/topic* MQTT topic.

The scheduler can be configured in *Link It!*. You can find a step-by-step guide for Link It! here.

The scheduler can be configured in scheduler.conf in the Link It! Filemanager, in the terminal or over MQTT JSON API. The reference guide of the MQTT JSON API you can find here.

The contents of the *scheduler.conf:*

```
{
  "scheduler": [
    {
      "cron_expression": "*/10 * * * * *", <- Cron expression for every 10 sec
      "request": {
       "message_topic": "$GW/iqrf", <- RF Network target
       "message": {
         "id": "1",
         "dpa_request": "0000.0D.00.FFFF.FF.30.01.00.00", <- RF request
         "timeout": 0,
         "priority": 1,
         "publish": [
           {
             "publish_topic": "test/topic", <- MQTT response topic
             "publish_qos": 1,
             "retain": false
```

```
            }
        ]
      }
      }
    }
  ]
}
```
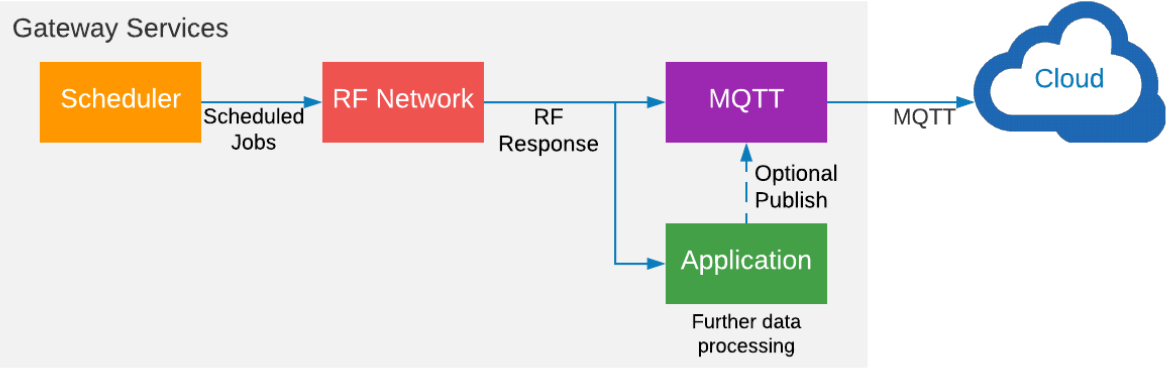

CAUTION!

This guide assumes that you can connect the gateway to the same local network with your computer!

2.2 Power on

The gateway works with 9V-16V DC power supply. The device has no power switch. It can be turned on by connecting the power source to it. After the gateway successfully powered on and got a DHCP address the ACT status LED started blinking and the system gateway service was running.

3 Gateway configuration

The configuration of the gateway is possible via the Link It! management tool.
With Link It! Management tool the user is able to configure:
- MQTT Network settings
- MQTT topic subscriptions
- Scheduler settings
- Enable or disable implemented services

3.1 Download Link It!

To setup and manage the gateways remotely at first you have to download the IQ Home LinkIt! application from the IQ Home website according version to your operating system:
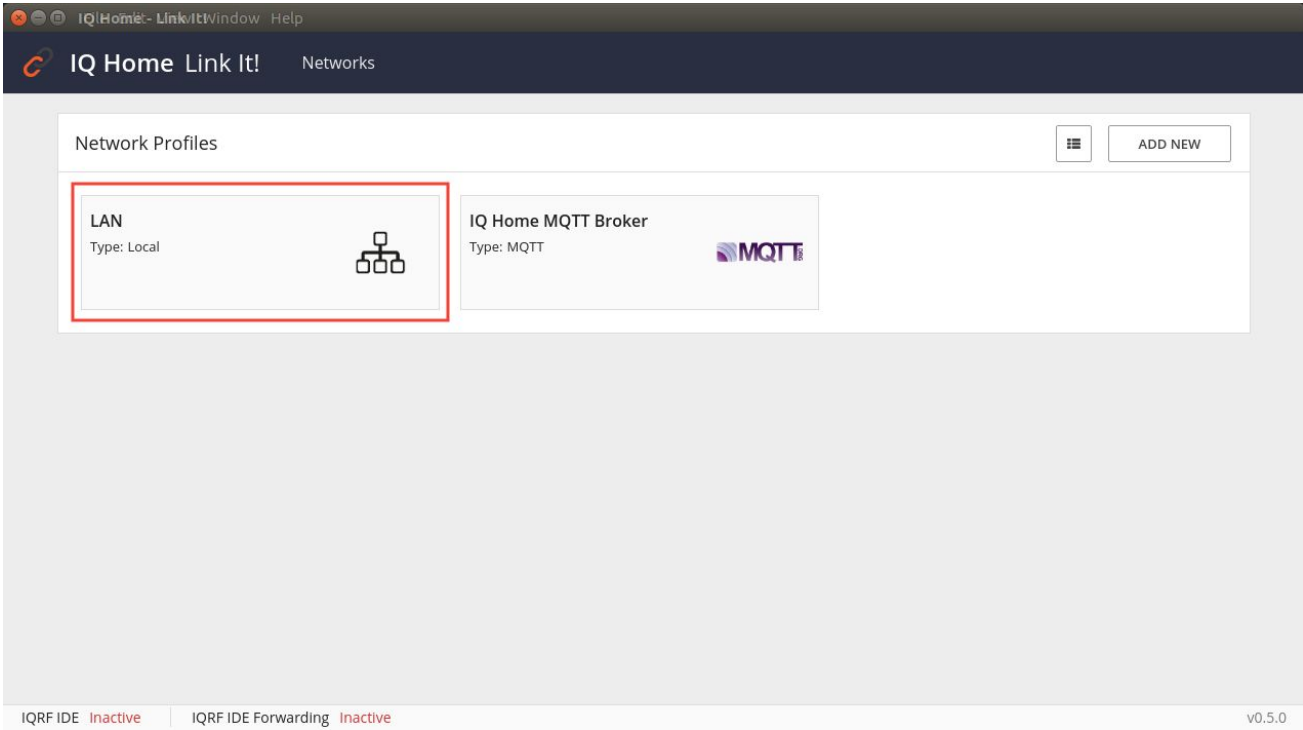https://www.iqhome.org/downloads#link-it!
Extract the downloaded package and run the application from the extracted folder:
- Linux: iqhome-linkit
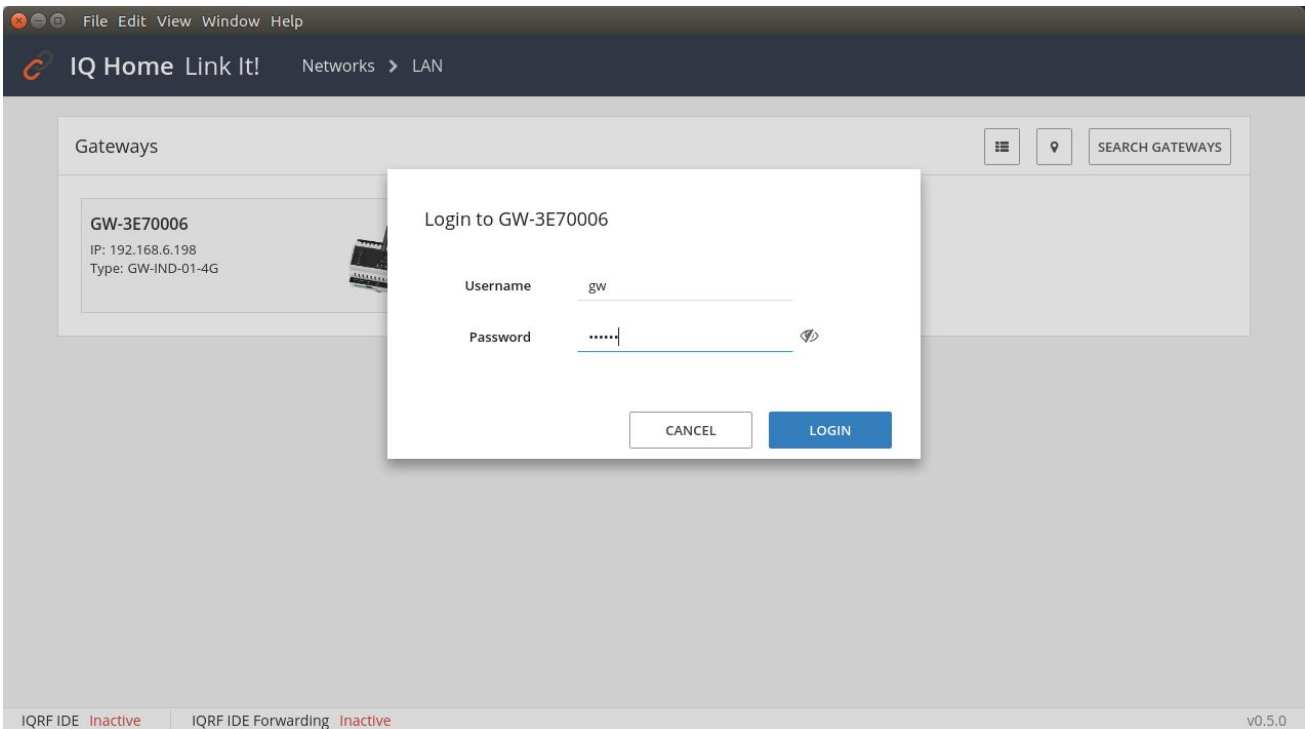- Windows: IQHome LinkIt.exe

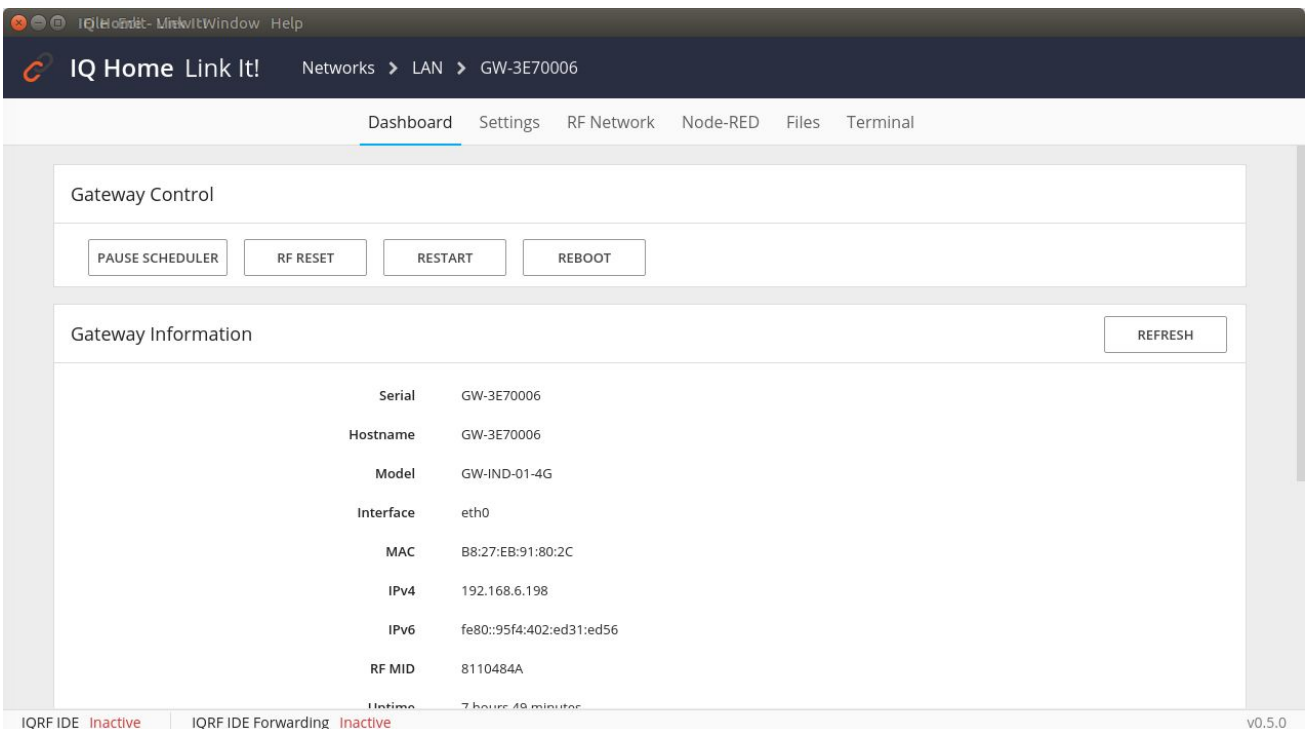## 3.2 Connect to gateway with Link It!

1. Click on the LAN network.

2. On the LAN network screen the Link It! will list the available gateways on the local network. Click on the gateway that should be configured.
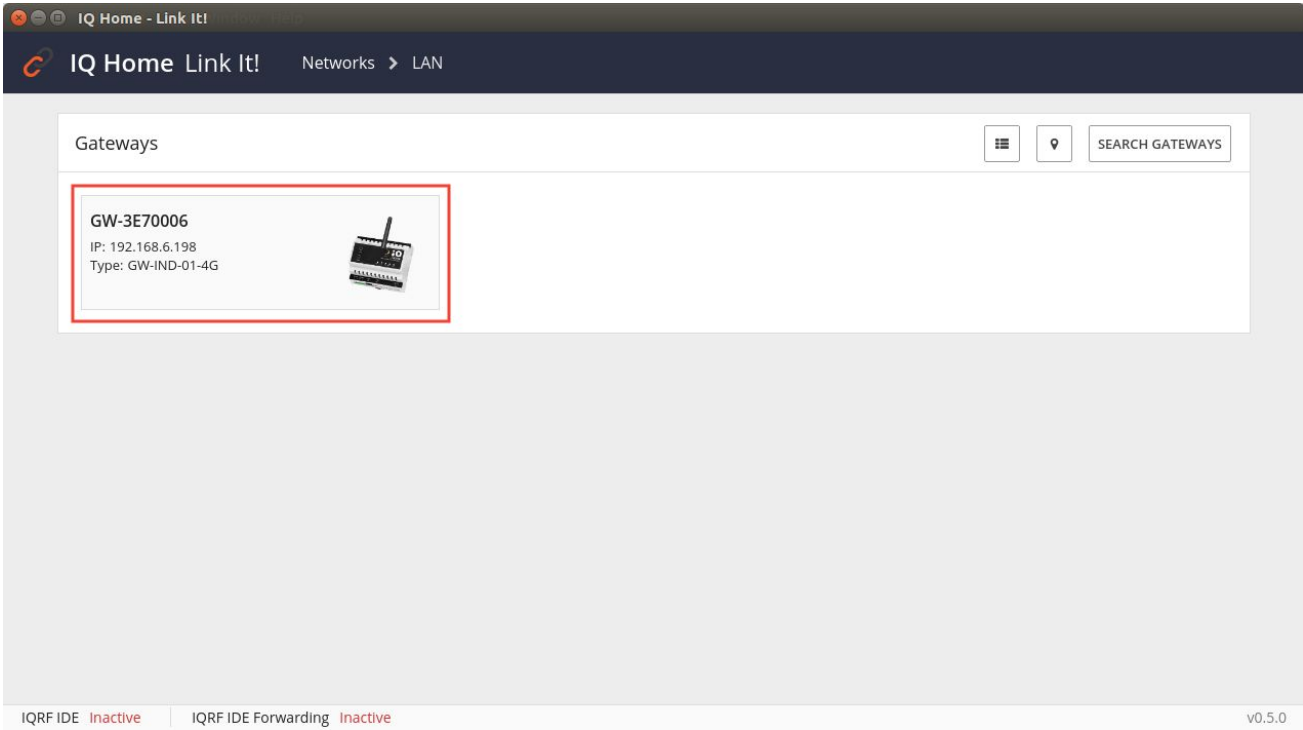
3. Enter username and password.
   - Defaults:
   - Username: *gw*
     - Password: *iqhome*

4. After connected to the gateway the general gateway status information displayed on the *Dashboard*.

3.3 IQRF IDE

The configuration of the gateway's IQRF coordinator and the IQRF network with IQRF IDE is possible via the Link It! management tool. The IQRF IDE can connect to the gateways via Link It!. First you should connect to the gateway with Link It! Described in section 3.2. After that you can connect to the IQRF coordinator with IQRF IDE as described in section 3.3.
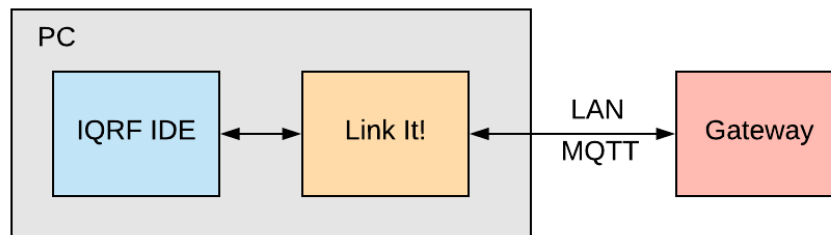
System architecture of how can connect and configure IQ Home gateways

CAUTION!

The IQRF IDE can connect to the gateway only via the Link It! by default for security reasons! For development and/or debugging you can enable in gateway configuration but it is not recommended in production use!

Follow the few steps below to connect to the IQ Home Gateway:

1. Open the IQRF IDE, open a project and choose "IQRF Device Manager" from the "Tools" menu or press F9

2. Select Add UDP device icon in "IQRF Device Manager" (or press Shift+Ctrl+D)
3. Select *Mode: IQRF gateway*
4. Click on the „*Search"* button
5. Select your gateway from the list. If the list still empty check your network settings
6. Click on the *Add* button
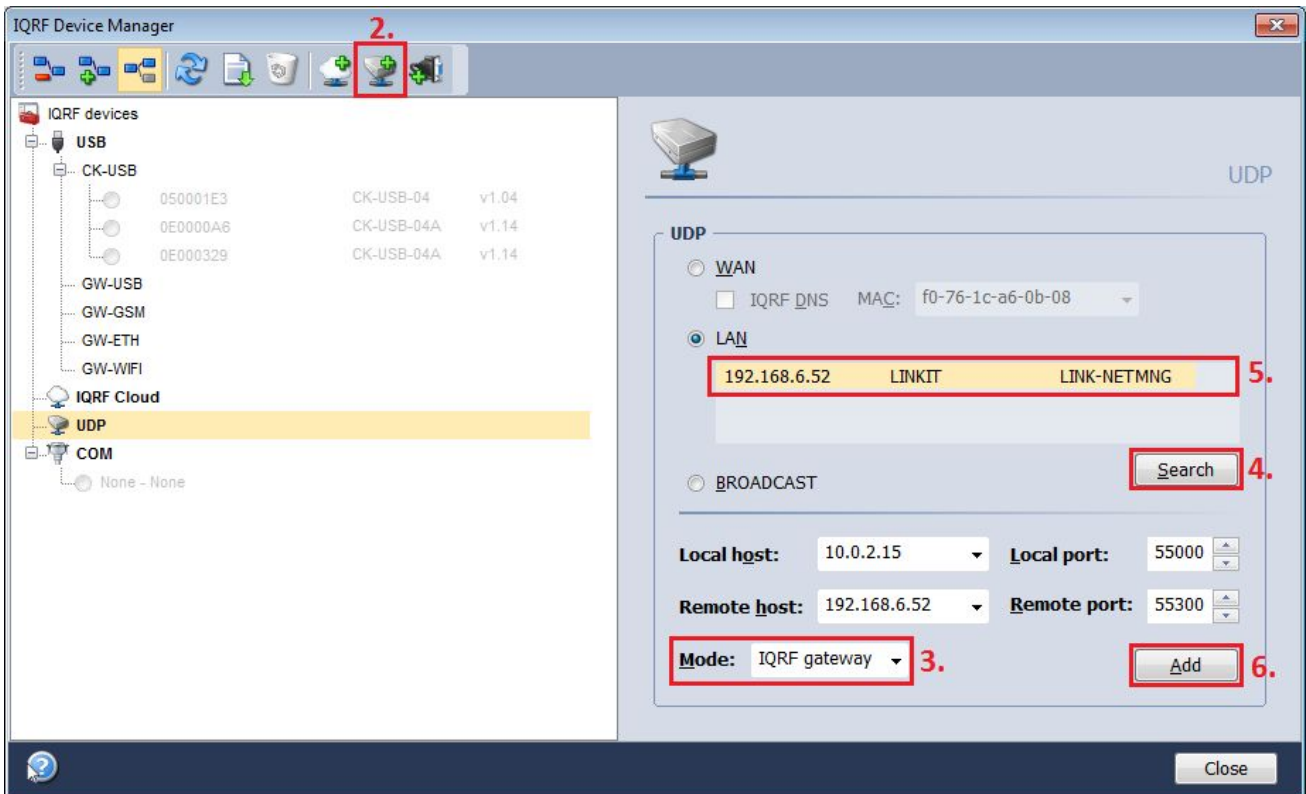
7. After add gateway click on the *Connect* button and close the "IQRF Device Manager" window.
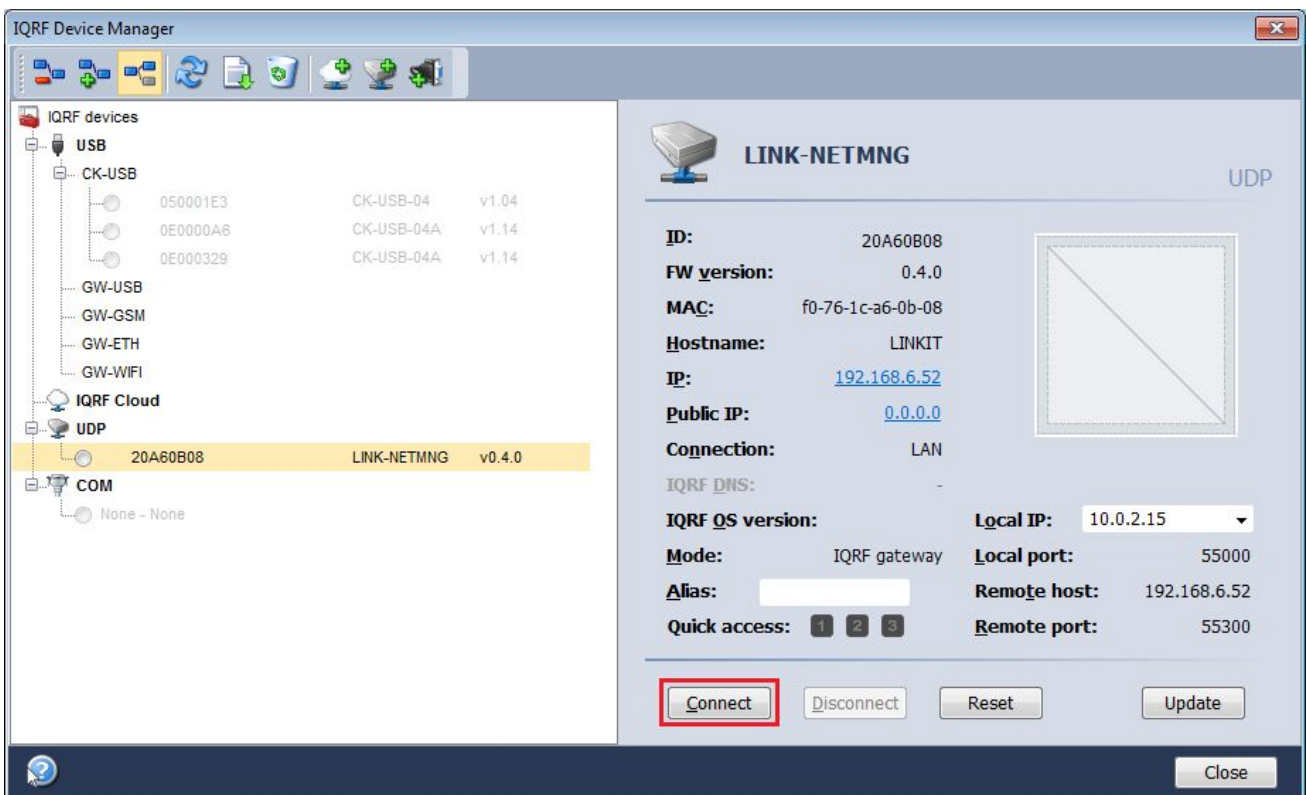
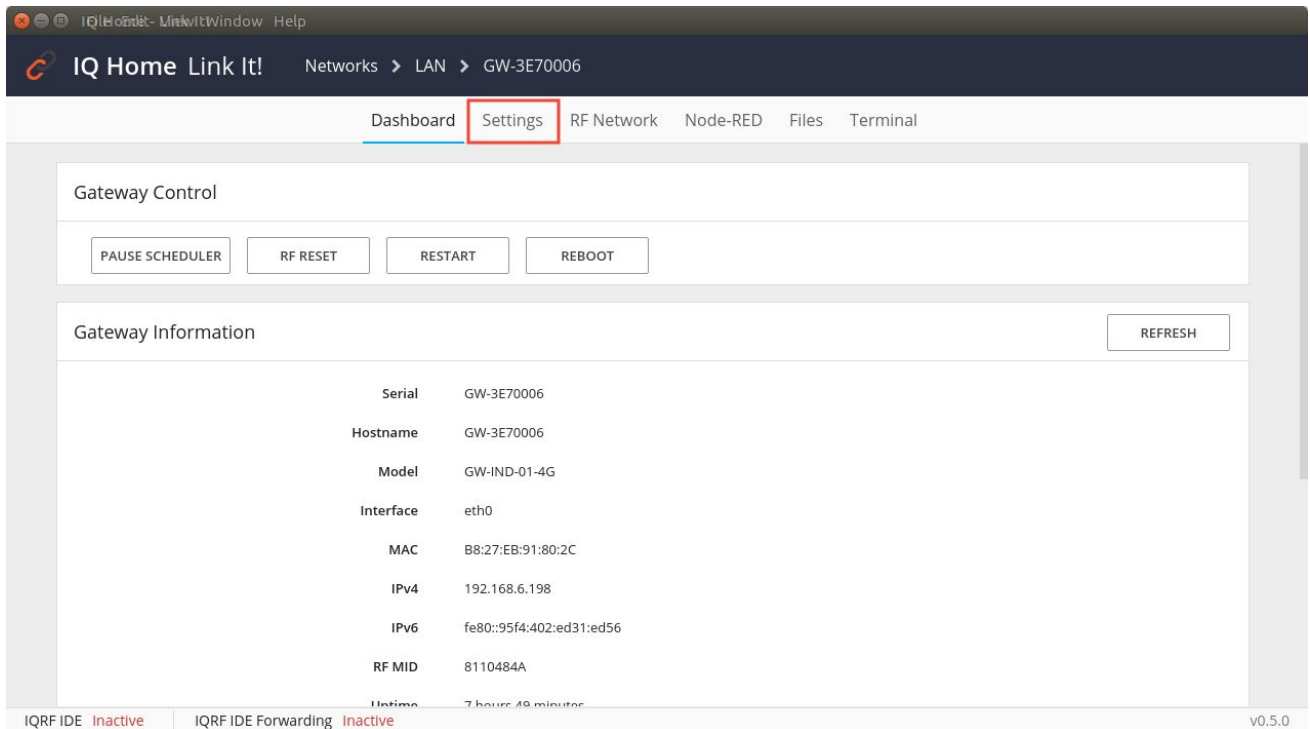8. The connection indicator displays the status in the left bottom corner.

9. In the bottom status bar of the Link It! now you can see the IQRF IDE status. If you connected to a selected gateway the *IQRF IDE Forwarding* status should be *Active*.

10. Now you can use IQRF IDE to configure the IQRF coordinator and the IQRF network.

4 Configure MQTT settings

1. At first connect to the gateway as describe in section 2.2
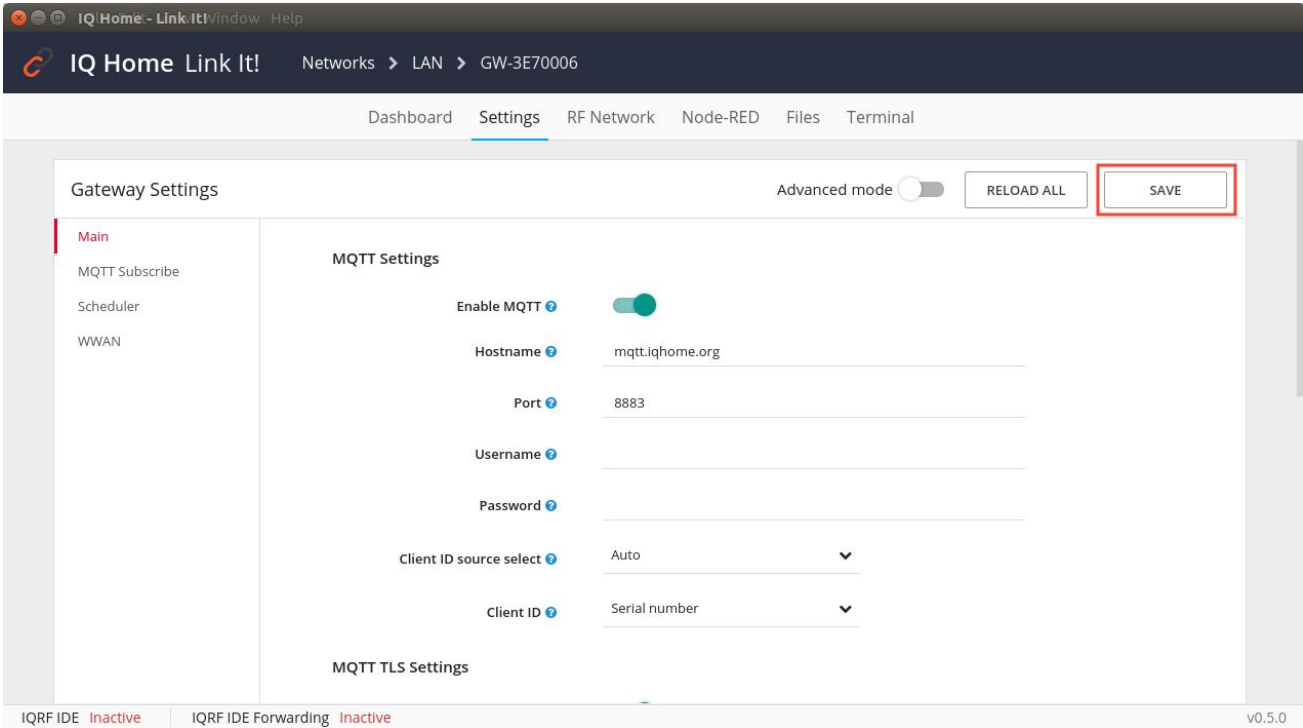2. Click on the *Settings* menu.

3. Modify MQTT Settings.

4. To setup MQTT TLS settings *Enable MQTT TLS* in the configuration.
   For CA signed or self signed certificates can be uploaded by clicking on the *UPLOAD* button.
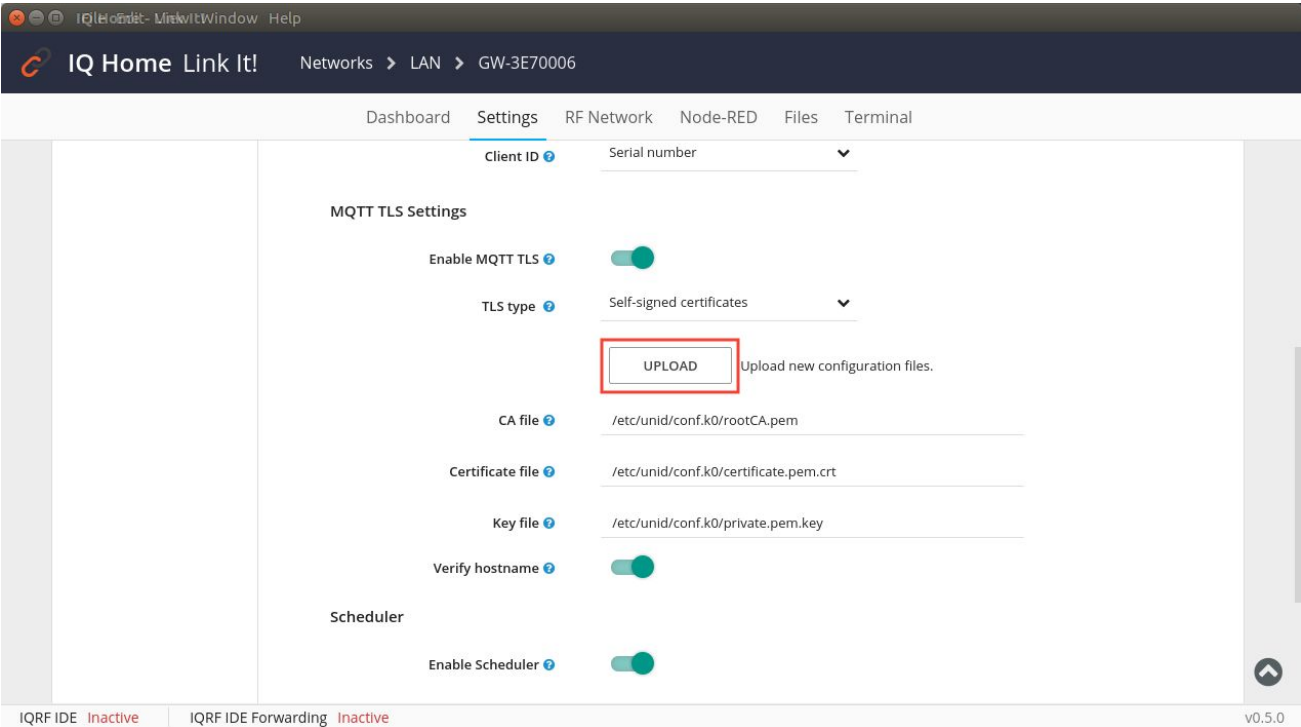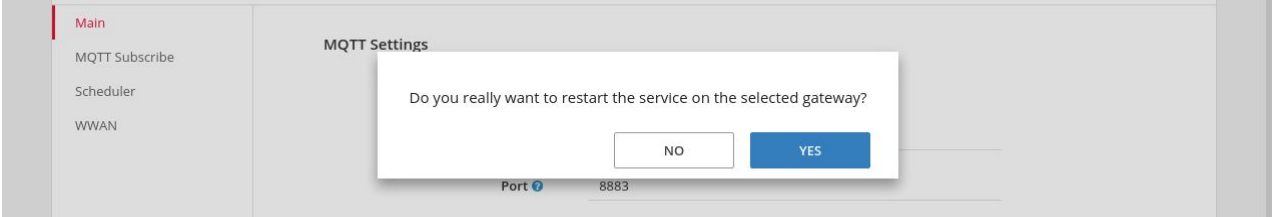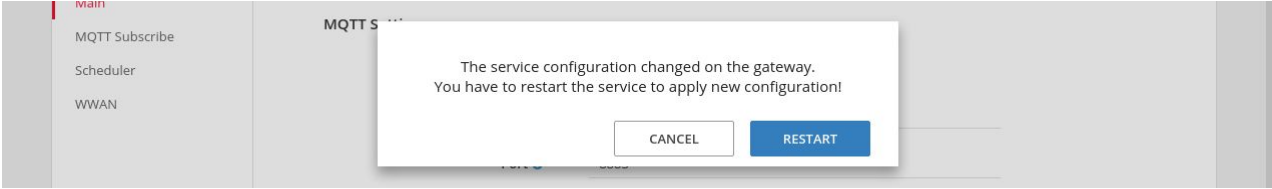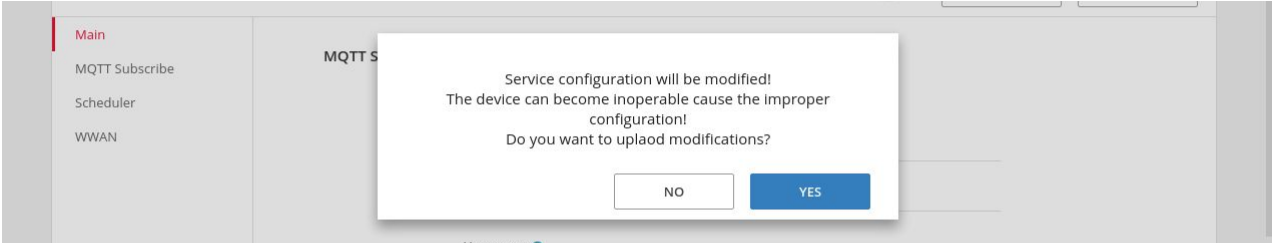

5. Open or Drag and Drop certificate and/or key files in the *Add New TLS Files* popup window and click on the *UPLOAD* button.
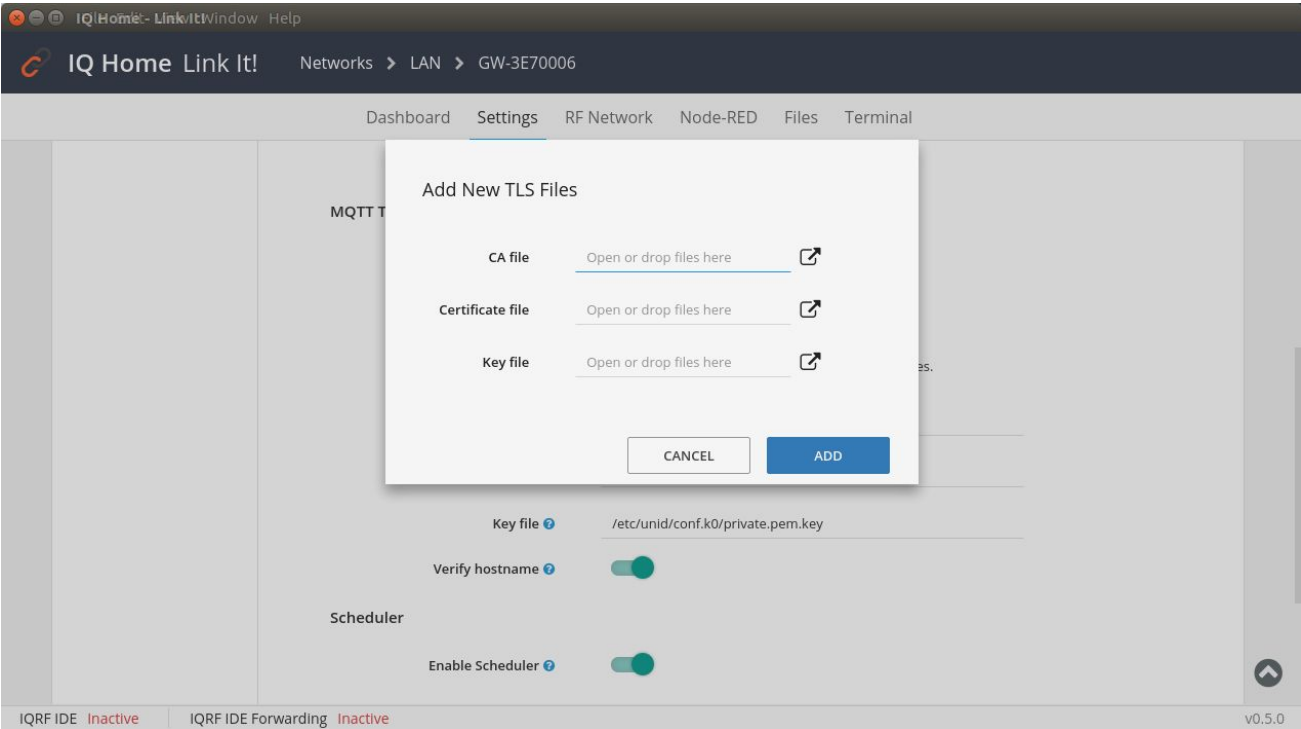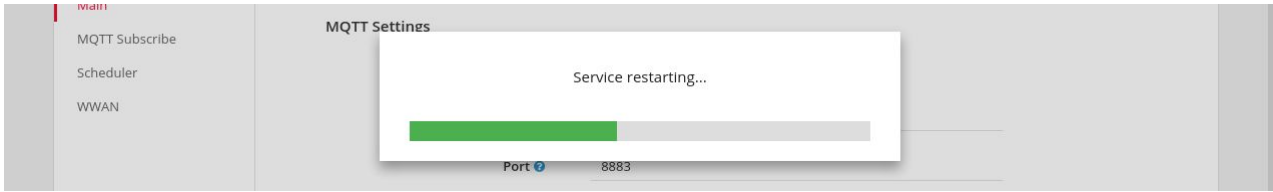
6. After modifying the configuration scroll down to the end of the screen and click on the *SAVE* button.

The saving process:

Main

MQTT Subscribe

Scheduler

WWAN

MQTT Settings

Service restarting...
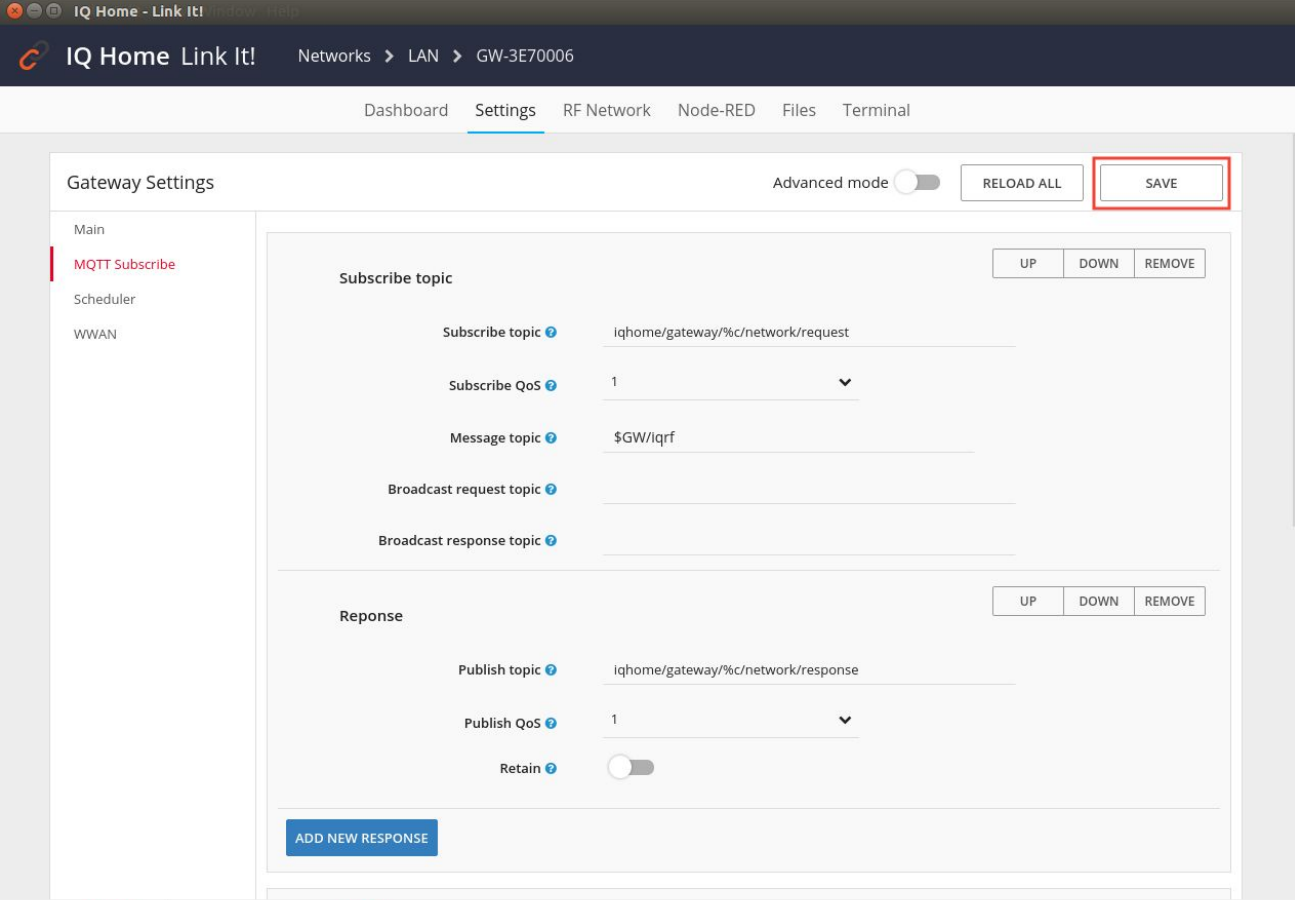
Port ❓   8883

5 Configure MQTT subscribe settings

The MQTT subscribe configuration can be done in the *Files* menu.
1. Click on the *Settings* menu.
2. Click on the *MQTT Subscribe* on the left sidebar.
3. Modify the configuration and click on the save icon in the toolbar.

The documentation of the subscribe configuration can be found in the *Reference Manual* on the IQ Home website: https://www.iqhome.org/gateway-reference-manual

6 Configure scheduler

The MQTT scheduler configuration can be done in the *Files* menu.
1. Click on the *Settings* menu.
2. Click on the *Scheduler* on the left sidebar.
3. Modify the configuration and click on the save icon in the toolbar.

The documentation of the scheduler configuration can be found in the *Reference Manual* on the IQ Home web site: https://www.iqhome.org/gateway-reference-manual

The scheduler configuration automatically reloads on the gateway after successful save.