Willow Sensors
Outdoor Air Quality (CO2) Sensor
Quick Start Guide

Document Revision: 1.00

Overview

The quick start guide explains the steps that should be followed by the user to realize the integration of WS-O-8-AE-AQC-1 to Cloudgate and start to use the sensor.

Contents

Integration Steps

Cloudgate Configurations

Cloudgate requires one time setup for the LuvitRED installation to enable LoRaWAN functionality. After the one time setup, user can skip Cloudgate Configuration steps.

To realize configurations, go to https://cloudgateuniverse.com/library and download the latest firmware and LuvitRED application. Choose which firmware to download according to your Cloudgate model.

1. View firmware and download it according to your Cloudgate model.

Firmware
9 firmwares
View firmware

Radio Firmware
8 radio firmwares
View radio firmware

Configurations
2 configurations
View configurations

Applications
12 applications
View applications

2. View applications and click on Option LuvitRED 2.0

Option LuvitRED 2.0
Easy-to-use graphical, "drag and drop & visual wiring" configuration environment for design and deployment of smart M2M and IoT Solutions on CloudGate. This version of LuvitRED has to be used together with Option CloudGate firmware 2.x.x!

Available for: All groups

View details

3. Download the latest version

Option LuvitRED 2.0

Easy-to-use graphical, "drag and drop & visual wiring" configuration environment for design and deployment of smart M2M and IoT Solutions on CloudGate. This version of LuvitRED has to be used together with Option CloudGate firmware 2.x.x!

Release notes

Versions

2.27.1	⬇	What's new
2.27.0	⬇	What's new
2.26.1	⬇	What's new

4. Now we are ready to complete configurations of Cloudgate. Once you open the Home Page of Cloudgate go to Provisioning tab and upload files we have downloaded.

CloudGate Connecting THINGS to the cloud   ➟ Log out   **OPTION**

🏠 Home   Interfaces ▾   Firewall   Connection Persistence   **Provisioning**   System   Plugins ▾   VPN

Check for updates   ›

Upload device provisioning file   ›

Settings   ›

Device Provisioning

Check for updates

Note: this will automatically install updates to the gateway, even when automatic provisioning has been disabled. "Check for updates" can cause data traffic on your wireless operator subscription.

Check for updates

Upload device provisioning file

Select file   [Dosya Seç] Dosya seçilmedi

Upload

Once the process done, you should be able to see related files on the home page.

Firmware version: **Option mini micro Firmware - 2.98.2**

Image version: **Option LuvitRED 2.0 - 2.27.0**

LoRaWAN Sensor Activation LuvitRED

After completing one time setup, "LuvitRED" option will be shown under the "Plugins" tab. The user can access to LuvitRED by clicking "Plugins -> LuvitRED". A new screen appears after clicking "Plugins -> LuvitRED". Click on the "Advanced Editor" to access LuvitRED.
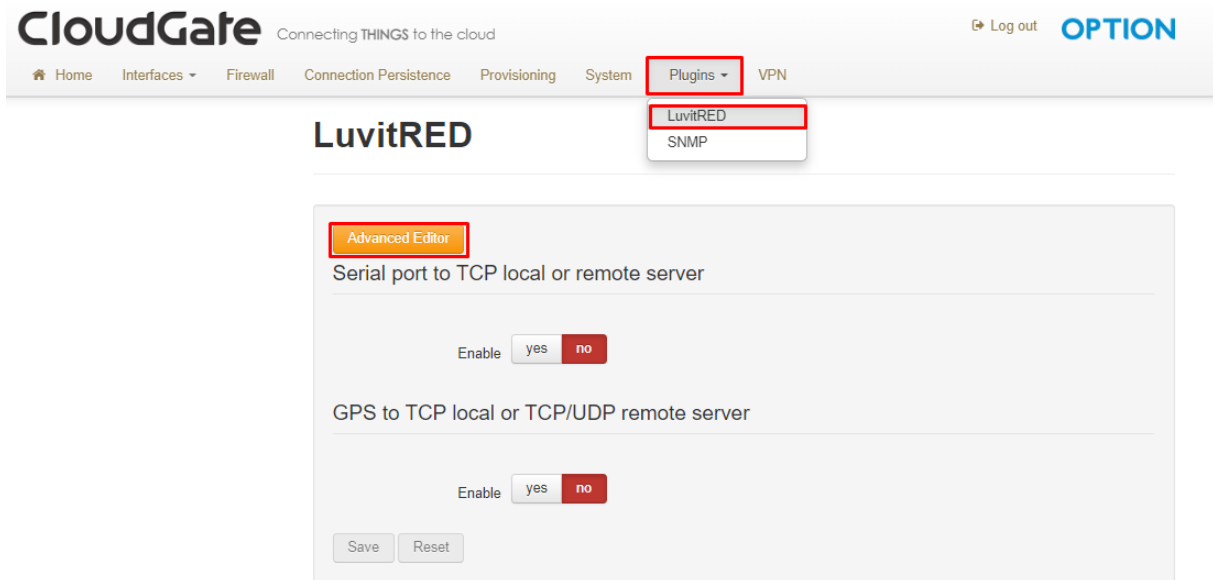
The following screen will appear after opening LuvitRED.
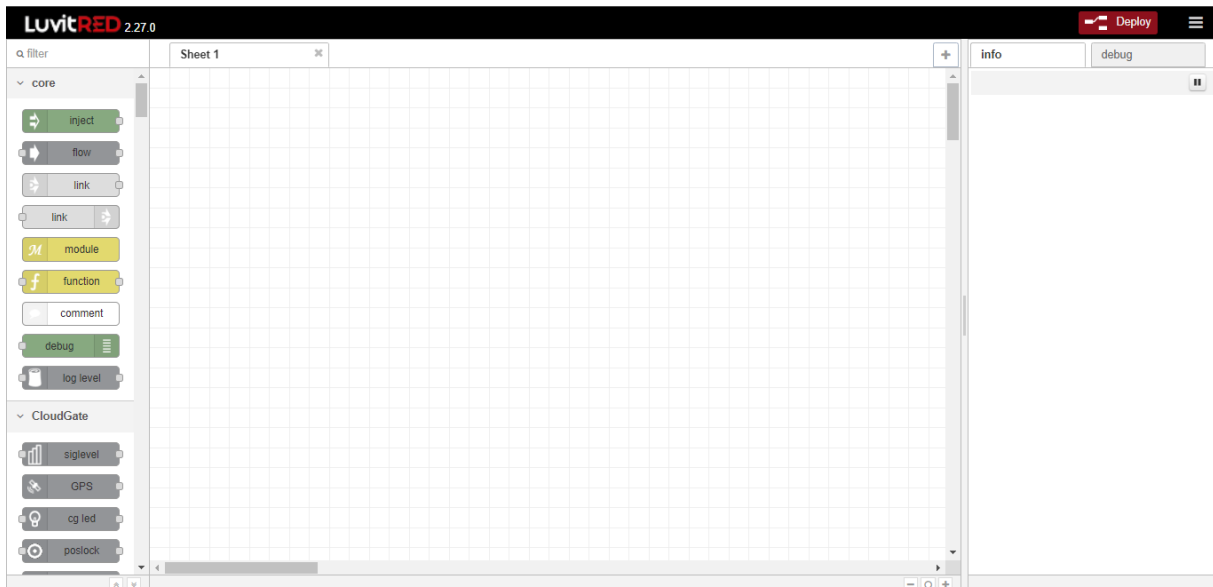
Import the application that we provide you by following the below steps. Download the application from the following link or use the embedded document below.
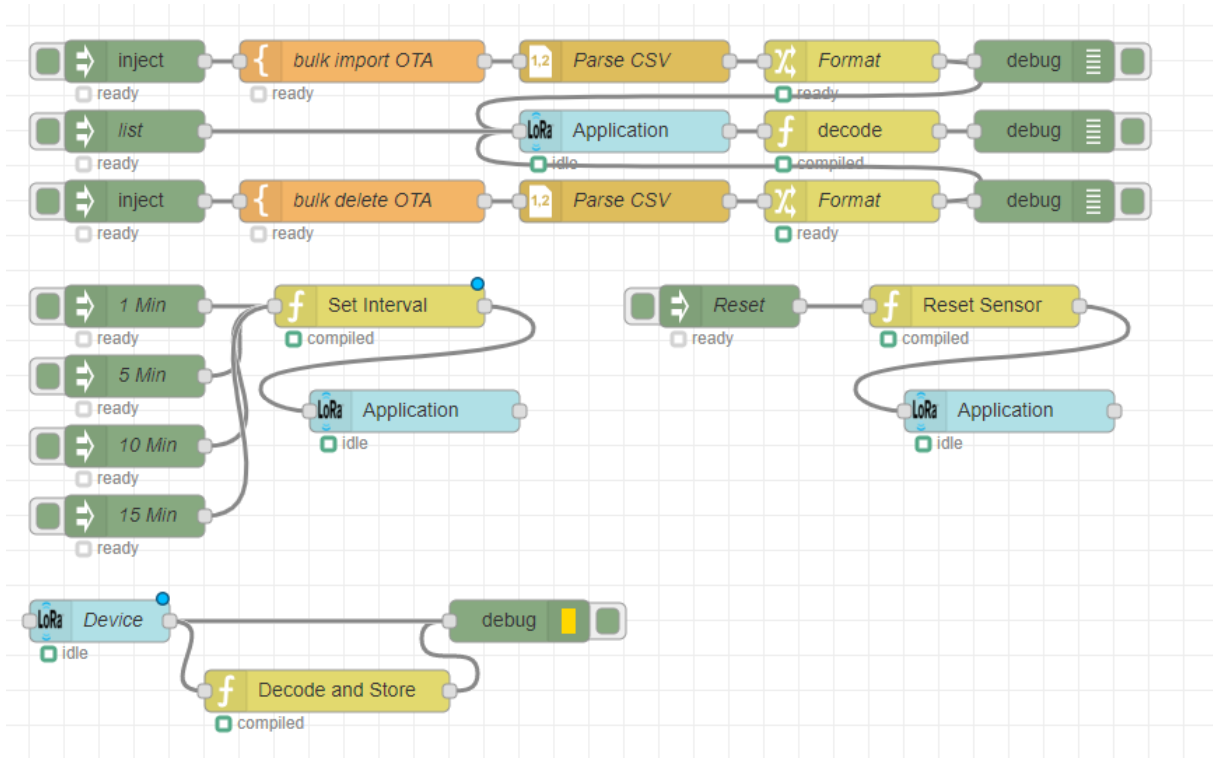

Outdoor_CO2_Luvit RED_v2.27.0.json

The user can only import JSON files, by clicking menu icon at the top right side and click "Import -> From File" then choose the file we provide you.

import nodes

Choose a file	

Close Ok

import nodes

Choose a file	Outdoor_CO2_LuvitRED_v2.27.0.json

Close Ok
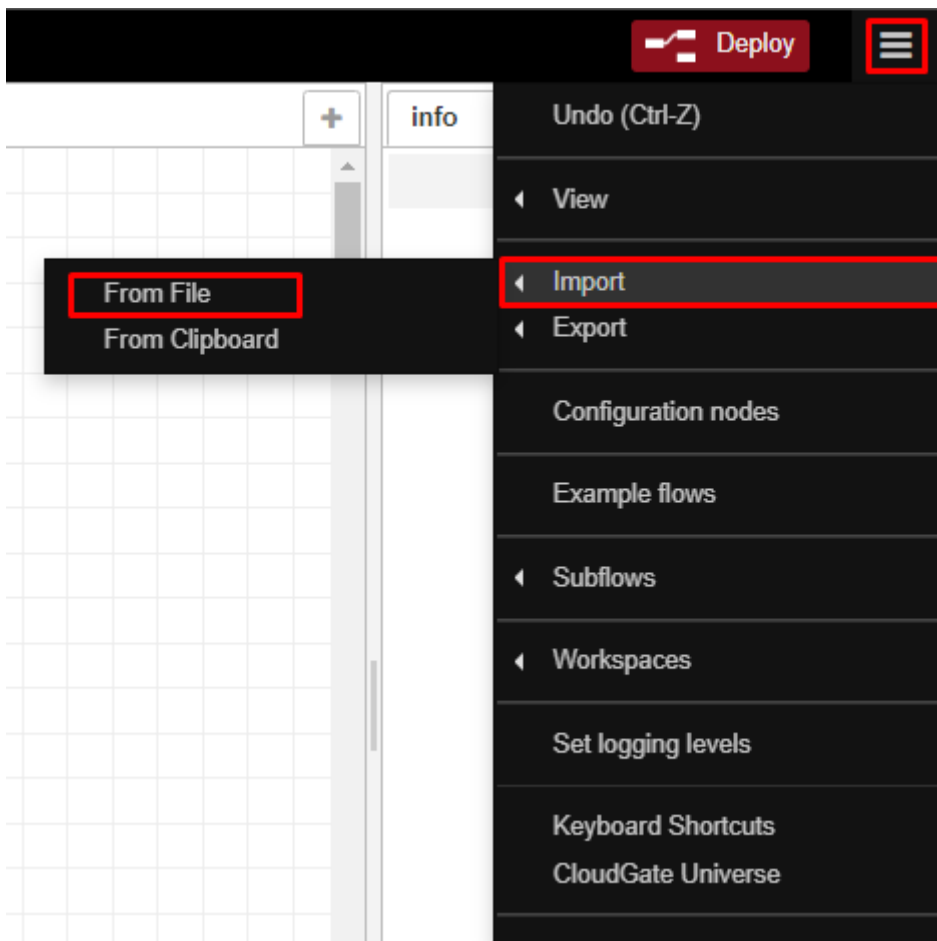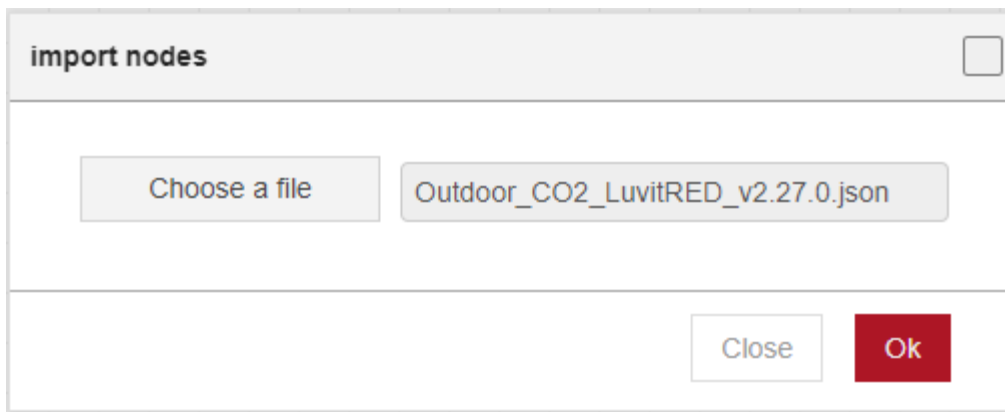
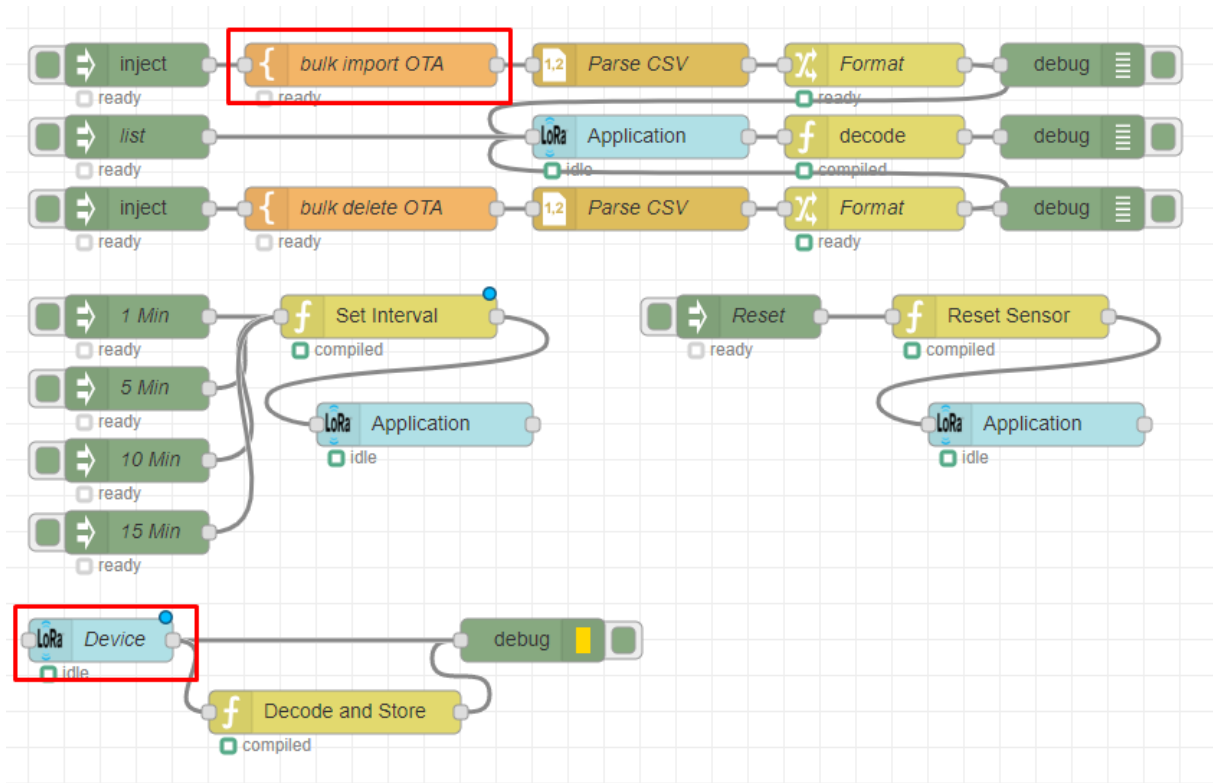Application should look like the following flow.

Flow Configuration

As a next step we will enter "Device EUI" and "App Key" to connect our sensor.

Firstly, double click on "bulk import OTA" node and enter name, device EUI, and application key, as string.

Here is an example

Edit template node

Delete   Cancel   OK

🏷 Name   bulk import OTA

📄 Template

```
1   name,DevEUI,AppKey
2   "deviceName", "123456", "654321"
3
```

Once it is done click "OK" and double click "Device" node and enter Device EUI and Application Key into related sections.

Edit lora device node

| Delete | | Cancel | OK |

🏷 Name

⚙ Application   LoRa Application ⌄   ✏

🔧 Class   A ⌄

🔧 Activation   Over the Air ⌄

🏷 **Dev EUI**   ***************

🔑 **App Key**   ***************

🏷 FPort   1

☐ Send confirmed downlink data

☐ Enable Adaptive Data Rate

🗑 Delete node   type delete here and push trash   🗑

Lastly enter your Device EUI to the following functions.
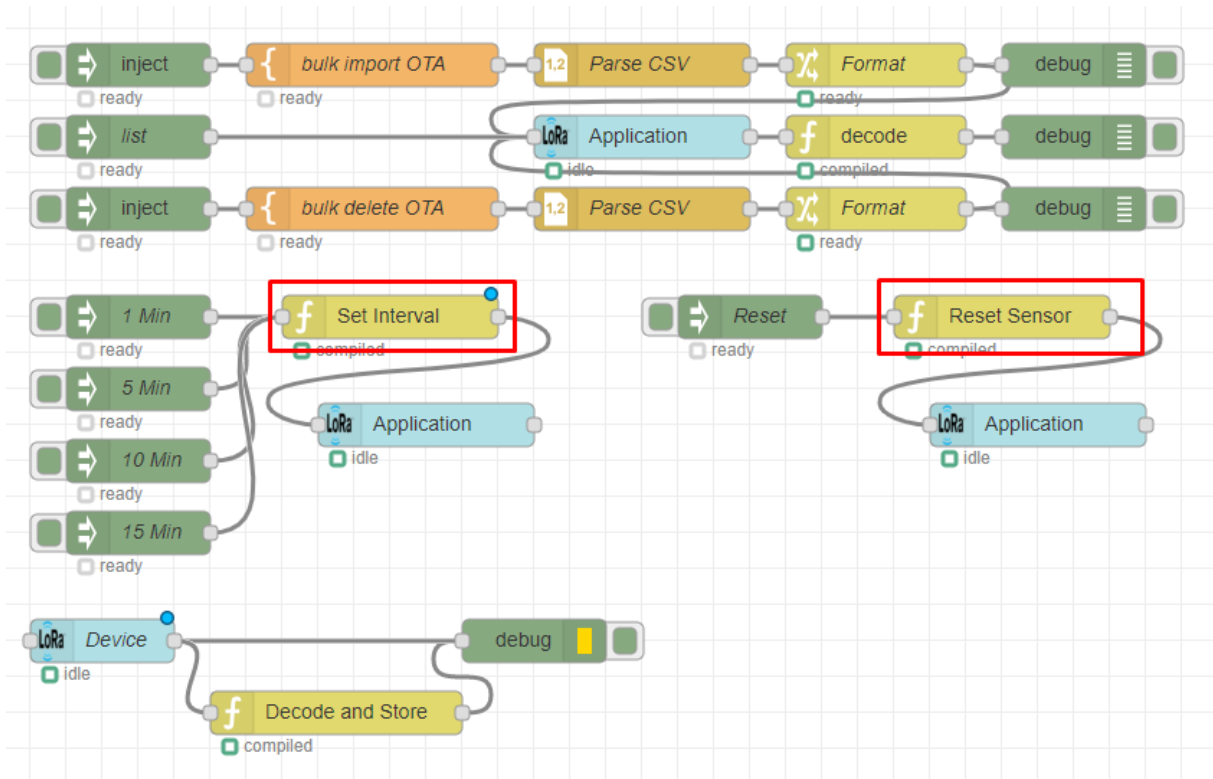
Enter your Device EUI to the following section.

🏷 Name

> Reset Sensor

```
1   -- Create a payload
2   local data = msg.payload
3   p(data)
4 ▾ msg.app = {
5 ▾     queue = {
6 ▾         ['645367566B597033'] = {
7               data=data,
8               fport = 0X0A,
9               confirmed = false
10 ▲        }
11 ▲    }
12 ▲ }
13  return msg
```

☐ Call with empty message on startup ?

✖ Outputs   1

Enter your Device EUI to the following section.

Name   Set Interval

```
1  -- Create a payload
2  local data = msg.payload
3  p(data)
4  msg.app = {
5      queue = {
6          ['645367566B597033'] = {
7              data=data,
8              fport = 0X08,
9              confirmed = false
10         }
11     }
12 }
13 return msg
```

☐ Call with empty message on startup ?

✖ Outputs   1

Now you can deploy the application by pressing the "Deploy" button which is located on the top right of the page. Once you activate your sensor, it will join to the network and start to send data.

From now on, user can use debug screen to see payload.

16.05.2022 10:16:05 [Decode and Store]

"Sensor Battery Level (%): 100"

16.05.2022 10:16:05 [Decode and Store]

"Internal Temperature (C): 20.4"

16.05.2022 10:16:05 [Decode and Store]

"CO2 (ppm): 789"

16.05.2022 10:16:05 [Decode and Store]

"Temperature(C): 22"

16.05.2022 10:16:05 [Decode and Store]

"Humidity(%RH): 45"