



# Mini LoRaWAN Gateway

UG63

User Guide

# Contents

|                                              |           |
|----------------------------------------------|-----------|
| <b>Chapter 1. About this Guide.....</b>      | <b>3</b>  |
| <b>Chapter 2. Product Introduction.....</b>  | <b>6</b>  |
| Overview.....                                | 6         |
| Packing List.....                            | 6         |
| Hardware Introduction.....                   | 7         |
| <b>Chapter 3. First Start.....</b>           | <b>10</b> |
| <b>Chapter 4. Gateway Installation.....</b>  | <b>14</b> |
| <b>Chapter 5. Web GUI Configuration.....</b> | <b>16</b> |
| Status.....                                  | 16        |
| Packet Forward.....                          | 21        |
| Network Server.....                          | 32        |
| Network.....                                 | 49        |
| Link Backup.....                             | 49        |
| WAN.....                                     | 52        |
| Cellular.....                                | 54        |
| WLAN.....                                    | 56        |
| OpenVPN.....                                 | 61        |
| Service.....                                 | 62        |
| Device Management.....                       | 62        |
| System.....                                  | 64        |
| General.....                                 | 64        |
| Maintenance.....                             | 68        |
| <b>Chapter 6. Services.....</b>              | <b>75</b> |

# Chapter 1. About this Guide

This guide provides instructions for setting up, deploying, configuring, operating, and maintaining the UG63 gateway.

## Readers

This guide is intended for installers, system integrators, network administrators, and other personnel responsible for deploying or managing the gateway.

## Copyright Statement

This guide may not be reproduced in any form or by any means to create any derivative such as translation, transformation, or adaptation without the prior written permission of Xiamen Milesight IoT Co., Ltd (Hereinafter referred to as Milesight).

 reserves the right to change this guide and the specifications without prior notice. The latest specifications and user documentation for all Milesight products are available on our official website <http://www.milesight.com>

## Safety Instruction

These instructions are intended to ensure that users can use the product correctly to avoid danger or property loss. Milesight will not take responsibility for any loss or damage resulting from failure to follow the instructions in this operating guide.



### **Warning:**

Serious injury or death may be caused if any of these warnings is neglected.

- This installation must be conducted by a qualified service person and should strictly comply with the electrical safety regulations of the local region.
- Do not power the device or connect it to other electrical devices during installation.
- Do not connect or power the device using damaged cables.
- Make sure the device is firmly fixed when installing.



### **CAUTION:**

Injury or equipment damage may be caused if any of these cautions are neglected.



- The device must not be disassembled or remodeled in any way.
- Do not place the device close to objects with naked flames.
- Do not place the device where the temperature is below/above the operating range.
- Do not drop the device or subject it to physical shock.

## Revision History

| Release Date   | Version | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jan. 5, 2024   | V2.0    | Initial version                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Apr. 3, 2025   | V2.1    | <ol style="list-style-type: none"> <li>1. Add embedded network server.</li> <li>2. Compatible with ChirpStack v4 packet forwarder.</li> <li>3. Add data retransmission for packet forwarder.</li> <li>4. Add scheduled reboot, ping tool and hostname configuration.</li> <li>5. Add cellular protocol parameter option.</li> <li>6. Add Proprietary Message filter.</li> </ol>                                                                                                                         |
| Aug. 4, 2025   | V2.1.1  | <ol style="list-style-type: none"> <li>1. Add syncing time with the browser.</li> <li>2. Add gateway info to report via MQTT.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                |
| Sept. 22, 2025 | V2.2    | <ol style="list-style-type: none"> <li>1. Add HTTPS access feature.</li> <li>2. Add OpenVPN client feature.</li> <li>3. Add password change prompt upon first login</li> </ol>                                                                                                                                                                                                                                                                                                                          |
| Aug. 21, 2026  | V2.3    | <ol style="list-style-type: none"> <li>1. Add advanced parameters for embedded NS devices.</li> <li>2. Add HTTP/HTTPS data reporting via applications.</li> <li>3. Add an SSL security option in TLS authentication for Chirpstack packet forwarder or embedded NS MQTT transmission.</li> <li>4. Add cellular IMS option and DNS server parameters.</li> <li>5. Add WLAN client mode.</li> <li>6. Add WLAN client option in link backup.</li> <li>7. Add global routing option for OpenVPN.</li> </ol> |

| Release Date | Version | Description                                                                                      |
|--------------|---------|--------------------------------------------------------------------------------------------------|
|              |         | <p>8. Optimize the display of Device Management page.</p> <p>9. Add remote log transmission.</p> |

# Chapter 2. Product Introduction

## Overview

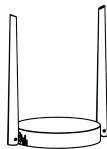
UG63 is a 8-channel lightweight indoor LoRaWAN<sup>®</sup> gateway. Adopting, SX1302 chip, UG63 can set up packet forwarding connection between end nodes and mainstream network servers (such as The Thing Network, Chirpstack, etc.). With its compact size and high performance, it is highly suitable for independent deployment of LoRaWAN<sup>®</sup> networks in small-scale scenarios or single spaces. It can also serve as a supplementary gateway, along with UG56/UG65/UG67 gateways, to enhance LoRaWAN<sup>®</sup> signal coverage in large-scale scenarios by filling in signal blind spots. it is an ideal supplement for wide indoor areas such as office, parking lots, campuses, etc.

### The device has the following features:

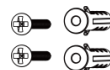
- Equip with SX1302 chip, handling a higher amount of traffic with lower consumption
- Small in size for easy carrying & deployment
- Desktop, wall or ceiling mounting support
- Multi backhaul backups with Ethernet, Cellular (4G) and WLAN
- Support 8 channels for more than 2000 end-nodes connections
- Fast deployment with the all-in-one design and standard accessories
- Compatible with mainstream network servers like The Things Stack, ChirpStack, etc.
- Embedded network server and MQTT API for easily integration
- Compatible with remote management system for simple deployment even in remote regions

## Packing List

After unboxing, please check the package contents against the following list to ensure all items are included. If any of the below items are missing or damaged, please contact your sales representative.



1 × UG63 Gateway



2 × Wall Mount  
Screw Sets

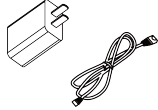


1 × Warranty Card

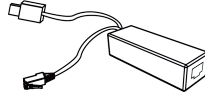


1 × Quick Guide Card

One of the following accessories (choose one):



1 × Type-C Cable (1m) & Power Adapter



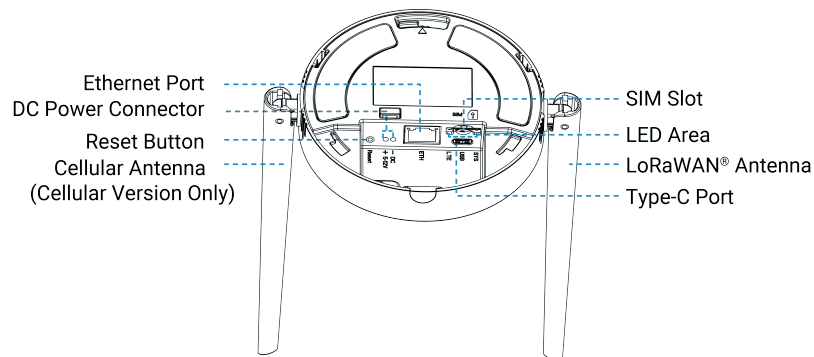
1 × PoE Splitter

## Hardware Introduction

This chapter describes the hardware design of the device.

### Hardware Overview

The following figure shows the main components of the device.



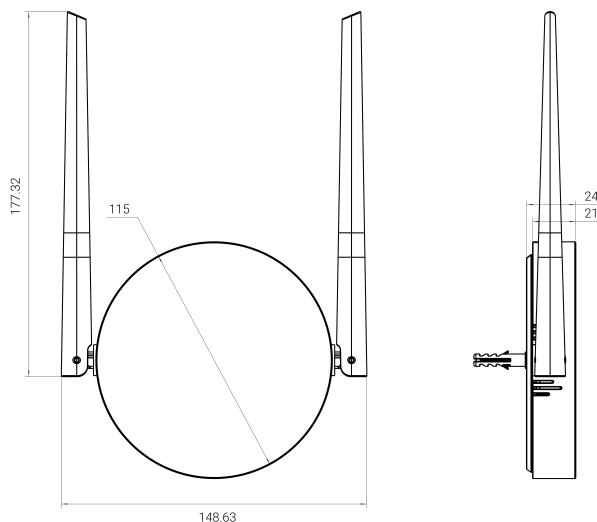
| Part               | Description                                                                                    |
|--------------------|------------------------------------------------------------------------------------------------|
| Ethernet Port      | Allows connection to an ISP for network access.                                                |
| DC Power Connector | Supply DC power to the device.                                                                 |
| LoRaWAN® Antenna   | Enhance wireless communication range and reliability.                                          |
| Cellular Antenna   |                                                                                                |
| SIM Slot           | Allows to insert a SIM card to connect to the cellular network.                                |
| LED Indicator      | See <a href="#">LED Patterns</a> .                                                             |
| Reset Button       | Allows to reset the device to factory defaults. For details see <a href="#">LED Patterns</a> . |
| Type-C Port        | Used for device console or device power supply.                                                |

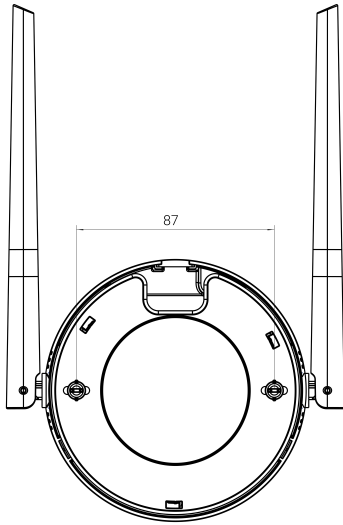
## LED Patterns

| LED                                     | Status                     | Description                                                                        |
|-----------------------------------------|----------------------------|------------------------------------------------------------------------------------|
| SYS                                     | Off                        | The power is switched off                                                          |
|                                         | Green Static On            | The power is switched on and the system is working well                            |
|                                         | Red Static On              | The power is switched on and the system malfunctions                               |
|                                         | Static On → Quickly Blinks | Factory Reset: Press and hold the reset button for more than 5 seconds             |
| LTE                                     | Off                        | SIM card is registering or failed to register (or there are no SIM cards inserted) |
|                                         | Slowly Blinks              | SIM card has been registered and is ready for dial-up                              |
|                                         | Quickly Blinks             | SIM card has been registered and is dialing up now                                 |
|                                         | Static On                  | SIM card has been registered and dialed up successfully                            |
| Ethernet Port - Link Indicator (Yellow) | Off                        | Disconnected or connection failure                                                 |
|                                         | Blinks                     | Transmitting data                                                                  |
| Ethernet Port - Rate Indicator (Green)  | Off                        | Ethernet port is disconnected                                                      |
|                                         | On                         | Ethernet port is connected                                                         |

## Device Dimensions

The following figure shows the device dimensions (unit:mm).





## Chapter 3. First Start

This chapter describes the required steps to complete the basic setup, and verify that the gateway is ready for deployment.

### Prerequisites

Prepare the following items and information before commissioning the gateway.

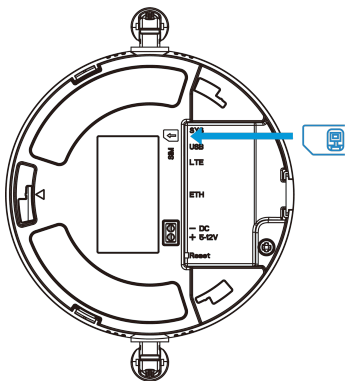
- Power Supply: A USB 5 VDC/2A power supply, a 5-12 VDC power supply, or an 802.3af PoE source with the optional PoE splitter.
- A network router and an Ethernet cable if Ethernet WAN will be used.
- Computer.
- For the cellular version, an activated Micro (3FF) SIM card. APN and PIN information are provided upon demand.
- (Optional) A working LoRaWAN<sup>®</sup> network server. Recommended that NS adds the gateway first.

### Prepare the Gateway

Complete the minimum hardware preparation required for first-time commissioning.

#### Insert the SIM Card (Cellular Version Only)

Insert the micro (3FF) SIM card into the gateway according to the direction indicated on the device. To remove the SIM card, press the card and it will pop out automatically.



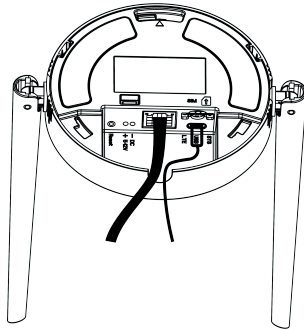
#### Connect Ethernet (If Required)

If Ethernet WAN will be used, connect the Ethernet port to a router.

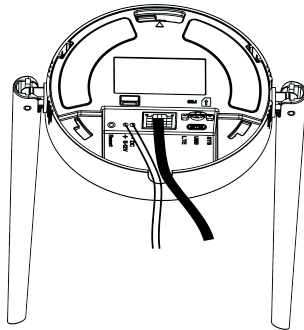
#### Connect the Power Supply

1. Use one of the supported power supply methods:

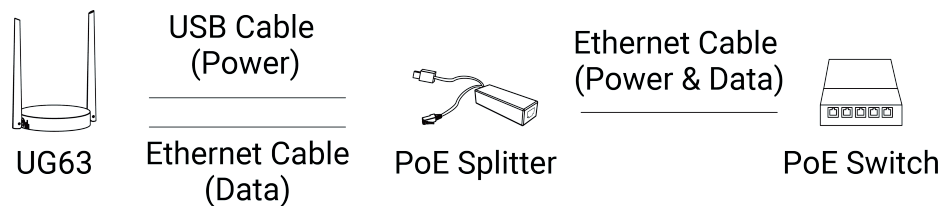
- USB: 5 VDC/2A.



- DC power supply: 5-12 V.



- 802.3af PoE source through the optional PoE splitter.



2. Wait for the gateway to start. The startup status can be checked via LED indicators.

| LED            | Expected Status                                                                                                                                   |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| SYS            | A green light indicates that the system is running properly.                                                                                      |
| LTE            | For the cellular version, a static green light indicates that the SIM card has registered and cellular dial-up has completed successfully.        |
| Ether-net Port | A green connection indicator means that the Ethernet port is connected.<br>A yellow blinking link indicator means that data is being transmitted. |

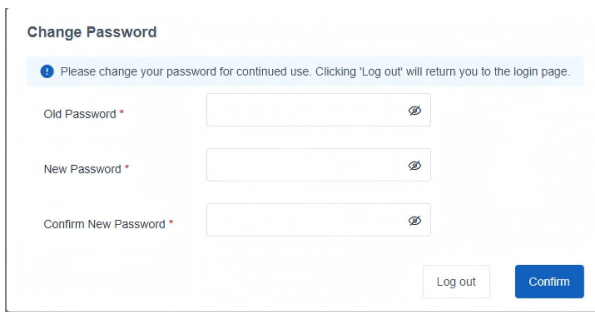
## Access the Web GUI

1. Enable Wi-Fi on the computer and connect to the gateway default access point: **Gateway\_XXXXXX**.  
The SSID can be found on the gateway label.
2. Open a web browser (Chrome is recommended) and enter **https://192.168.1.1**.
3. Enter the default credentials to log in.

Username: **admin**

Password: **password**

4. Change the default password when prompted. The new password must contain at least one letter and one number.



5. Log in to the web GUI using the new credentials.

## Complete the Setup Wizard

Follow the setup wizard to complete the basic settings. The wizard can also be skipped or exited if you want to configure the gateway manually.

1. Configure the link failover to select the main network link and configure ping detection as required.
2. Configure the Ethernet WAN settings as required.
3. For the cellular version, configure the cellular settings. In most cases, enter the APN required by the cellular operator.
4. Configure the correct system time.
5. Configure the gateway to connect to the required LoRaWAN<sup>®</sup> network server.
6. Configure packet filtering if required.
7. Configure the WLAN settings.



### Note:

Detailed Link Backup, WAN, Cellular, Packet Forward, Packet Filters, and WLAN parameters are described in their corresponding configuration chapters.

## Verify the Commissioning Result

After completing the basic configuration, open the **Status** page and check the gateway information.

- Check the configured LoRaWAN<sup>®</sup> region.
- Check the Ethernet connection status if used.
- For cellular version, check the cellular network information and IP address.
- Check the LoRaWAN<sup>®</sup> Packet Forward connection status.
- Add a LoRaWAN<sup>®</sup> end device to the network server and check if it can join the network.

# Chapter 4. Gateway Installation

This chapter describes the preparation and installation procedures for mounting the gateway at the deployment site.

**Warning:**

Before installation, ensure the device is powered off!

## Prerequisites

### Check the Accessories

The gateway can be mounted on a desktop, a wall or a ceiling. Select the required mounting method and prepare the corresponding mounting accessories.

### Check Installation Requirement

For wall or ceiling mounting, the wall structure shall be sufficiently solid and stable to ensure firm screw fixation and overall mounting stability. Besides, screw mounting positions must avoid internal wall electrical wiring, water pipes and other concealed utilities to prevent structural damage and potential safety hazards.

### Check the SIM Card (Cellular Version Only)

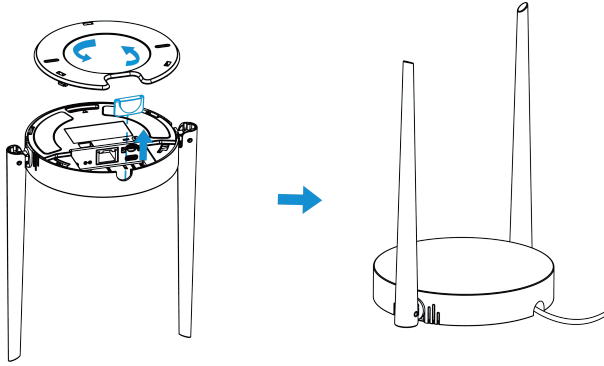
Make sure the micro (3FF) SIM card is installed if cellular connectivity will be used. See [Insert the SIM Card](#).

### Prepare the Power Supply and Required Cables

Make sure the power supply is ready and required cables have been installed. When installing the power cables, pass them together with the Ethernet cables through the groove. See [Connect the Power Supply](#).

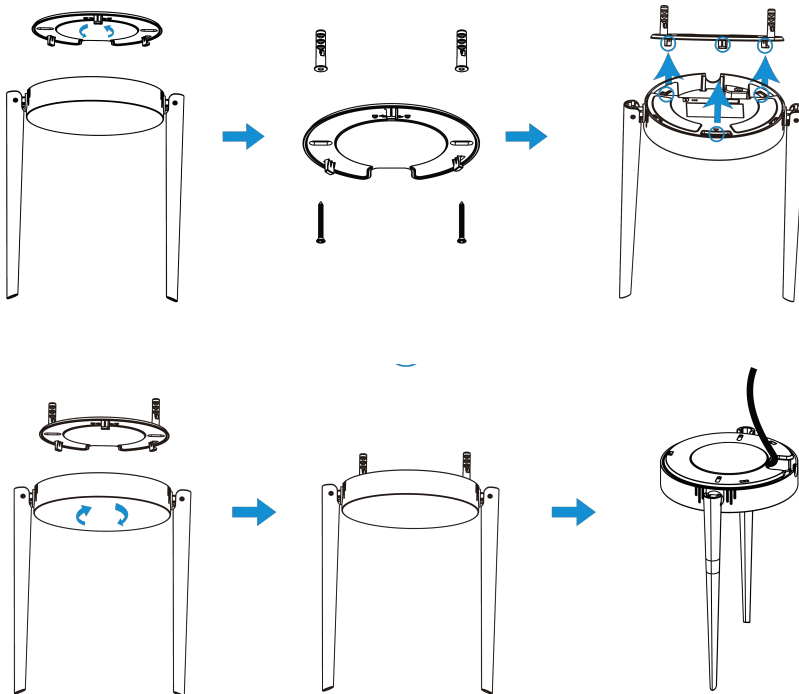
## Desktop Installation

1. Remove the baffle and the mounting plate from the back of the gateway.
2. Place the gateway on the desktop.



### Wall/Ceiling Installation

1. Remove the mounting plate from the back of the gateway.
2. Align the mounting plate horizontally at the desired position on the wall or ceiling and mark two mounting holes.
3. Drill two holes at the marks and insert the wall plugs into the holes.
4. Secure the mounting plate to the wall plugs with screws.
5. Turn the gateway clockwise to lock it to the mounting plate.



# Chapter 5. Web GUI Configuration

This chapter describes the web GUI configuration for the gateway. Before starting configuration, make sure you have [accessed the web GUI](#).

## Status

The Status page displays the device's basic information and operational status.

### Overview

The top of the page displays the model, serial number, and EUI. Click the widgets in the figure to learn more.

The screenshot displays the 'Status' page of the web GUI. At the top, the device model 'UG63-L09NA-915M' is shown, along with its Serial Number (SN) '6739F03114140003' and EUI '24E124FFFEFD87D2'. Below this, the 'System Information' widget lists various device details. To the right, three network status widgets are shown: 'Ethernet', 'Cellular', and 'WLAN', each with a 'Connected' status indicator. The 'LoRaWAN Packet Forward' widget is also present at the bottom right.

| System Information |                            |
|--------------------|----------------------------|
| Firmware Version   | 64.0.0.5                   |
| Hardware Version   | V2.1                       |
| Region             | KR920                      |
| Local Time         | 2026-08-14 03:11:28 Friday |
| Uptime             | 0d, 12h 06m 27s            |
| CPU Temperature    | 39.5°                      |

| Ethernet <span>Connected</span> <a href="#">Link in use</a> |                   |
|-------------------------------------------------------------|-------------------|
| Type                                                        | Static            |
| IP                                                          | 192.168.40.96     |
| MAC                                                         | 24:e1:24:fd:87:d2 |
| Gateway                                                     | 192.168.40.1      |
| DNS                                                         | 192.168.40.179    |
| Connection Duration                                         | 0d, 12h 06m 18s   |

| Cellular <span>Connected</span> |                 |
|---------------------------------|-----------------|
| IP Address                      | 10.160.123.117  |
| Connection Duration             | 0d, 12h 05m 52s |

| WLAN <span>Connected</span> |                   |
|-----------------------------|-------------------|
| MAC Address                 | C0:BA:1F:00:73:0C |
| Interface Type              | Client            |
| SSID                        | EG71-ap-wyz       |
| Encryption Mode             | WPA-PSK/WPA2-PSK  |
| IP Address                  | 192.168.3.221     |
| Netmask                     | 255.255.255.0     |
| Connection Duration         | 0d, 12h 06m 20s   |

| LoRaWAN Packet Forward <span>Connected</span> |                             |
|-----------------------------------------------|-----------------------------|
| Server Type                                   | Semtech                     |
| Server Address                                | eu1.cloud.thethings.network |

1. [System Information](#)
2. [Ethernet](#)

3. [Cellular](#)
4. [WLAN](#)
5. [LoRaWAN Packet Forward](#)

## System Information

The widget displays the basic system information.

| System Information |                            |
|--------------------|----------------------------|
| Firmware Version   | 64.0.0.5                   |
| Hardware Version   | V2.1                       |
| Region             | KR920                      |
| Local Time         | 2026-08-14 03:11:28 Friday |
| Uptime             | 0d, 12h 06m 27s            |
| CPU Temperature    | 39.5°                      |

## Ethernet

The widget displays the Ethernet connection status, connection type, MAC address and connection information.

|                     |                   |              |
|---------------------|-------------------|--------------|
| Ethernet            | Connected         | *Link in use |
| Type                | Static            |              |
| IP                  | 192.168.40.96     |              |
| MAC                 | 24:e1:24:fd:87:d2 |              |
| Gateway             | 192.168.40.1      |              |
| DNS                 | 192.168.40.179    |              |
| Connection Duration | 0d, 12h 06m 18s   |              |

## Cellular

The widget displays the cellular connection status, IP address and connection duration.

|                                 |                 |
|---------------------------------|-----------------|
| Cellular <span>Connected</span> |                 |
| IP Address                      | 10.160.123.117  |
| Connection Duration             | 0d, 12h 05m 52s |

## WLAN

The widget displays the WLAN MAC address, working status and connection information.

|                             |                   |
|-----------------------------|-------------------|
| WLAN <span>Connected</span> |                   |
| MAC Address                 | C0:BA:1F:00:73:0C |
| Interface Type              | Client            |
| SSID                        | EG71-ap-wyz       |
| Encryption Mode             | WPA-PSK/WPA2-PSK  |
| IP Address                  | 192.168.3.221     |
| Netmask                     | 255.255.255.0     |
| Connection Duration         | 0d, 12h 06m 20s   |

## LoRaWAN Packet Forward

The widget displays the packet forwarder connection status, server type and the server address.

|                                               |                             |
|-----------------------------------------------|-----------------------------|
| LoRaWAN Packet Forward <span>Connected</span> |                             |
| Server Type                                   | Semtech                     |
| Server Address                                | eu1.cloud.thethings.network |

## Cellular

The page displays the cellular connection status and cellular network information. This page only exists on the cellular version. Click the widgets in the figure to learn more.

The screenshot displays the Cellular configuration page with two main sections: SIM and NET.

**SIM Section:**

- Status: Ready
- Register Status: Registered (Home network)
- Modem Information Table:

| Modem        |                                   |
|--------------|-----------------------------------|
| Model        | EG915Q-NA                         |
| Version      | EG915QNALCR01A05M04_01.003.01.003 |
| Signal Level | 23 asu(-67 dbm)                   |
| IMEI         | 867507066654670                   |
| IMSI         | 460115212149201                   |
| ICCID        | 89860325245924625528              |
| ISP          | CHN-CT                            |
| Network Type | FDD LTE                           |
| PLMN ID      | 46011                             |
| LAC          | 5F0C                              |
| Cell ID      | E6D915                            |

**NET Section:**

- Status: Connected
- Connection Duration: 0d, 11h 27m 28s
- Network Information Table:

| Network      |                   |
|--------------|-------------------|
| IPv4 Address | 10.160.123.117/32 |
| IPv4 Gateway | 10.64.64.64       |
| IPv4 DNS     | 8.8.8.8           |

1. [Modem](#)
2. [Network](#)

### Modem

The widget displays the SIM registration status, SIM registration information, and cellular module information.

SIM

Ready

Register Status: Registered (Home network)

| Modem        |                                   |
|--------------|-----------------------------------|
| Model        | EG915Q-NA                         |
| Version      | EG915QNALCR01A05M04_01.003.01.003 |
| Signal Level | 23 asu(-67 dbm)                   |
| IMEI         | 867507066654670                   |
| IMSI         | 460115212149201                   |
| ICCID        | 89860325245924625528              |
| ISP          | CHN-CT                            |
| Network Type | FDD LTE                           |
| PLMN ID      | 46011                             |
| LAC          | 5F0C                              |
| Cell ID      | E6D915                            |

#### SIM status reference:

- No SIM Card: the SIM card is not inserted
- SIM Card Error: the SIM card is error
- PIN Error: the PIN code is error
- PIN Required: the SIM card requires to type PIN code
- PUK Required: the SIM card requires to be unlocked by PUK code
- No Signal: no cellular signal
- Ready: the SIM card is inserted
- Down: the SIM card is deactivated

#### Network

This widget displays the cellular network connection status and the connected IP information.

|                                                                                     |                   |
|-------------------------------------------------------------------------------------|-------------------|
| <div>NET</div> <div>Connected</div> <div>Connection Duration: 0d, 11h 27m 28s</div> |                   |
| Network                                                                             |                   |
| IPv4 Address                                                                        | 10.160.123.117/32 |
| IPv4 Gateway                                                                        | 10.64.64.64       |
| IPv4 DNS                                                                            | 8.8.8.8           |

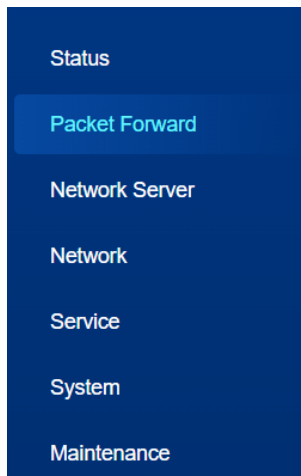
## Packet Forward

The gateway can work as a packet forwarder to set up communication between LoRaWAN<sup>®</sup> end devices and a LoRaWAN<sup>®</sup> network server. This chapter describes how to configure and monitor the packet forwarder.

### General

This section is used to configure the packet forwarding destination and the connection parameters for the selected network server type.

1. On the left bar, select **Packet Forward** page.



2. On the top bar, select **General** tab.
3. Configure the packet forward parameters as required.

EUI

C0BA1FFFE027CB5

Gateway ID \*

C0BA1FFFE027CB5

Destination

Enable

☒

Type

Embedded NS

▼

Connected

| Parameter          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUI                | The unique identifier of the gateway. This value is not editable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Gateway ID         | The customizable ID used to register the gateway to a network server, such as The Things Network. By default, it is the same as the gateway EUI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Destination</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Enable             | Enable or disable the packet forward feature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Type               | <p>Select the packet forward type.</p> <p><b>Semtech:</b> Connect to a network server through the Semtech UDP protocol. It supports most mainstream network servers.</p> <p><b>ChirpStack-Generic:</b> Connect to ChirpStack v3 through a generic MQTT gateway bridge.</p> <p><b>ChirpStack-v4:</b> Connect to ChirpStack v4 through an MQTT forwarder.</p> <p><b>Basic Station:</b> Connect to a network server through TCP. LNS and CUPS do not both need to be configured.</p> <p><b>Remote Embedded NS:</b> Connect to the embedded network server of a Milesight controller gateway like UG65.</p> <p><b>Embedded NS:</b> Connect to the embedded network server of this gateway.</p> <p><b>DeviceHub LNS:</b> Connect to Milesight DeviceHub LNS. Enable DeviceHub 2.0 on the <b>Service &gt; Device Management</b> page first.</p> <p><b>Milesight Development Platform LNS:</b> Connect to Milesight Development Platform LNS. Enable Milesight Development Platform on the <b>Service &gt; Device Management</b> page.</p> |
| <b>Semtech</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Server Address     | The IP address or domain name of the LoRaWAN <sup>®</sup> network server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Parameter                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port Up                                 | The UDP port used to forward uplinks from end devices to the network server.                                                                                                                                                                                                                                                                                                                                                      |
| Port Down                               | The UDP port used to forward downlinks from the network server to end devices.                                                                                                                                                                                                                                                                                                                                                    |
| Data Re-transmission                    | <p>When the network is disconnected, the gateway can store up to 500 uplink packets and retransmit them to the network server after the network recovers.</p> <p><b>Pending Data:</b> Display the number of packets to be retransmitted.</p> <div>  <b>Note:</b><br/>           The gateway does not save Join Request packets.         </div>   |
| <b>Basic Station</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| URI                                     | <p>The URL of the LoRaWAN<sup>®</sup> network server. Use the following format and replace the server address and port with the actual values.</p> <p><b>LNS URI:</b> wss://&lt;server-address&gt;:&lt;port&gt; Or ws://&lt;server-address&gt;:&lt;port&gt;</p> <p><b>CUPS URI:</b> https://&lt;server-address&gt;:&lt;port&gt;</p>                                                                                               |
| CA File                                 | <p>The CA certificate used to secure the server domain.</p> <div>  <b>Note:</b><br/>           Change the certificate file format to .trust before importing it.         </div>                                                                                                                                                                |
| Client Certificate File                 | The client certificate used to verify the identity of the gateway.                                                                                                                                                                                                                                                                                                                                                                |
| Client Key File                         | The private key used to verify the identity of the gateway.                                                                                                                                                                                                                                                                                                                                                                       |
| Data Re-transmission                    | <p>When the network is disconnected, the gateway can store up to 500 uplink packets and retransmit them to the network server after the network recovers.</p> <p><b>Pending Data:</b> Display the number of packets to be retransmitted.</p> <div>  <b>Note:</b><br/>           The gateway does not save Join Request packets.         </div> |
| <b>ChirpStack-Generic/ChirpStack-v4</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Parameter                 | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Server Address            | The IP address or domain name of the LoRaWAN <sup>®</sup> network server.                                                                                                                                                                                                                                                                                                                                      |
| MQTT Port                 | The network server port used for the MQTT connection.                                                                                                                                                                                                                                                                                                                                                          |
| Region ID                 | The region ID for a ChirpStack-v4 server. This value is entered automatically when <b>Supported Freq</b> is changed on the <b>Packet Forward &gt; Radios</b> page.                                                                                                                                                                                                                                             |
| User Credentials          | When enabled, enter the username and password used for authentication.                                                                                                                                                                                                                                                                                                                                         |
| TLS Au-<br>thentication   | <p>Enable or disable TLS authentication.</p> <p><b>Mode:</b> Select the certificate mode as <b>CA Signed Server Certificate</b> to use pre-loaded certificates, or <b>Self Signed Certificates</b> to import the custom CA certificate, client Certificate and client key for verification.</p> <p><b>SSL Security:</b> After enabled, the gateway will verify the certificate's validity.</p>                 |
| Data Re-<br>transmission  | <p>When the network is disconnected, the gateway can store up to 500 uplink packets and retransmit them to the network server after the network recovers.</p> <p><b>Pending Data:</b> Display the number of packets to be retransmitted.</p> <div>  <b>Note:</b><br/>The gateway does not save Join Request packets. </div> |
| <b>Remote Embedded NS</b> |                                                                                                                                                                                                                                                                                                                                                                                                                |
| Server Address            | The IP address or domain name of the Milesight controller gateway.                                                                                                                                                                                                                                                                                                                                             |
| MQTT Port                 | The communication port of the Milesight controller gateway.                                                                                                                                                                                                                                                                                                                                                    |
| Data Re-<br>transmission  | <p>When the network is disconnected, the gateway can store up to 500 uplink packets and retransmit them to the network server after the network recovers.</p> <p><b>Pending Data:</b> Display the number of packets to be retransmitted.</p> <div>  <b>Note:</b><br/>The gateway does not save Join Request packets. </div> |

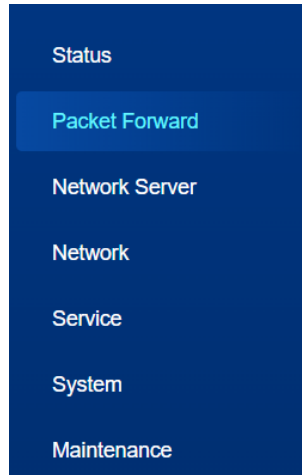
- Click **Save & Apply** to save the settings.
- Check if both the gateway and the network server show the status is **Connected**.

## Radios

This section is used to configure the LoRaWAN<sup>®</sup> frequency plan and radio channels.

### Basic Settings

1. On the left bar, select **Packet Forward** page.



2. On the top bar, select **Radios** tab.
3. Configure the radio channel parameters as required.

Radio Channel Setting

Supported Freq

US915

Radio 0

904.3

Radio 1

905.1

Multi Channels Setting

| Enable                              | Radio   | Frequency/MHz |
|-------------------------------------|---------|---------------|
| <input checked="" type="checkbox"/> | Radio 0 | 903.9         |
| <input checked="" type="checkbox"/> | Radio 0 | 904.1         |
| <input checked="" type="checkbox"/> | Radio 0 | 904.3         |
| <input checked="" type="checkbox"/> | Radio 0 | 904.5         |
| <input checked="" type="checkbox"/> | Radio 1 | 904.7         |
| <input checked="" type="checkbox"/> | Radio 1 | 904.9         |
| <input checked="" type="checkbox"/> | Radio 1 | 905.1         |
| <input checked="" type="checkbox"/> | Radio 1 | 905.3         |

| Parameter             | Description |
|-----------------------|-------------|
| Radio Channel Setting |             |

| Parameter                     | Description                                                                                                                                                                                                                                                                                       |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Support-<br>ed Freq           | <p>The LoRaWAN<sup>®</sup> frequency plan used for uplink and downlink frequencies and data rates. The available options depend on the gateway model.</p> <p><b>-470M:</b> CN470</p> <p><b>-868M:</b> EU868, RU864, IN865</p> <p><b>-915M:</b> US915, AU915, KR920, AS923-1&amp;2&amp;3&amp;4</p> |
| Radio<br>0/Radio 1            | The center frequencies used to receive packets from LoRaWAN <sup>®</sup> end devices.                                                                                                                                                                                                             |
| <b>Multi Channels Setting</b> |                                                                                                                                                                                                                                                                                                   |
| Enable                        | Enable or disable this channel to receive packets.                                                                                                                                                                                                                                                |
| Radio                         | Select Radio 0 or Radio 1 as the center frequency.                                                                                                                                                                                                                                                |
| Frequen-<br>cy/MHz            | Set the frequency of this channel. Range: center frequency $\pm$ 0.4625.                                                                                                                                                                                                                          |

4. (Optional) Configure the LoRa/FSK channel settings if you require the private communication.

LoRa Channel Setting

Enable

☒

Radio

Radio 0

Frequency/MHz

904.6

Bandwidth/kHz

500KHz

Data Rate/Bit

SF8

FSK Channel Setting

Enable

☐

Radio

Radio 0

Frequency/MHz

904.6

Bandwidth/kHz

250KHz

Data Rate/Bit

50000

| Parameter     | Description                                         |
|---------------|-----------------------------------------------------|
| Enable        | Enable or disable this channel to transmit packets. |
| Radio         | Select Radio 0 or Radio 1 as the center frequency.  |
| Frequency/MHz | Set the frequency of this channel.                  |
| Bandwidth/kHz | Set the bandwidth of this channel.                  |
| Data Rate/Bit | Set the data rate.                                  |

5. Click **Save & Apply** to save the settings.

## Packet Filters

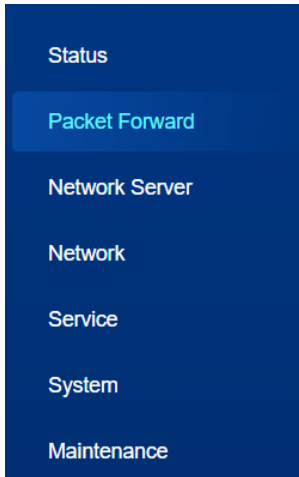
This section is used to filter uplink packets by different conditions to reduce network congestion, save network traffic, and help ensure safe operation.



**Note:**

When the destination type is **Embedded NS**, this feature does not work.

1. On the left bar, select **Packet Forward** page.



2. On the top bar, select **Packet Filters** tab.
3. Configure the packet filter parameters as required.

Proprietary Message Filter ☒

**Filters by NetID** ⓘ

Mode ☐ White List ☒ Black List

List  +

**Filters by JoinEUI** ⓘ

Mode ☒ White List ☐ Black List

List  To  +

**Filters by DevEUI** ⓘ

Mode ☒ White List ☐ Black List

List  To  +

| Parameter                  | Description                                                                     |
|----------------------------|---------------------------------------------------------------------------------|
| Proprietary Message Filter | Enable to prevent proprietary message packets (Mtype=111) from being forwarded. |

| Parameter          | Description                                                                                                                                                                                                                                                  |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Filters by NetID   | Forward or do not forward uplink packets that match the NetID.                                                                                                                                                                                               |
| Filters by JoinEUI | Forward or do not forward Join Request packets that match the JoinEUI range.                                                                                                                                                                                 |
| Filters by DevEUI  | Forward or do not forward Join Request packets that match the DevEUI range.                                                                                                                                                                                  |
| Mode               | <p>Select the filter mode as black list or white list.</p> <p><b>White List:</b> Only forward packets included in the list to the network server.</p> <p><b>Black List:</b> Forward packets other than those included in the list to the network server.</p> |
| List               | Set the specific filtering value or range. Each condition supports up to five lists.                                                                                                                                                                         |

4. Click **Save & Apply** to save the settings.



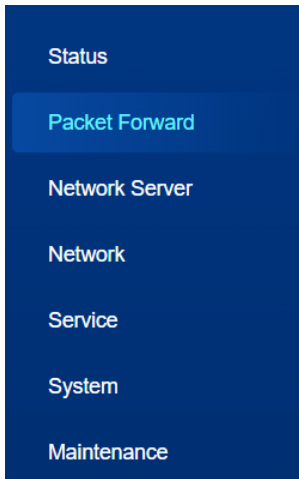
**Note:**

1. When JoinEUI and DevEUI are both configured, only packets that meet both conditions are forwarded.
2. When a third-party network server assigns filter conditions to the gateway, the gateway prioritizes to the network server settings.

## Advanced

This section is used to configure beacon, keepalive, and expert packet forwarder settings.

1. On the left bar, select **Packet Forward** page.



2. On the top bar, select **Advanced** tab.
3. Configure the advanced parameters as required.

**Beacon Setting**

Beacon Period ☒ 0 ☐ 128

Beacon Time Offset/s

**Intervals Setting**

Keep Alive Interval/s

Stat Interval/s

Push Timeout/ms

**Expert Options** ⓘ

Enable ☐

| Parameter             | Description                                                                                                                                                                                         |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Beacon Setting</b> |                                                                                                                                                                                                     |
| Beacon Period         | The interval at which the gateway sends beacons for Class B device time synchronization. A value of 0 means that the gateway does not send beacons. Select 128 when the end device type is Class B. |

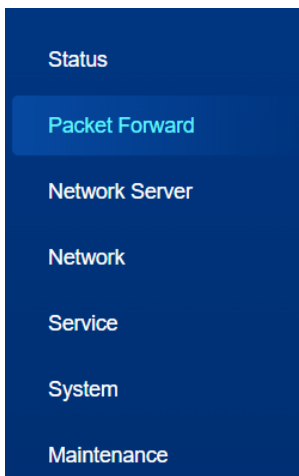
| Parameter                | Description                                                                                                                                                                                                                                                                       |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Intervals Setting</b> |                                                                                                                                                                                                                                                                                   |
| Keep Alive Interval      | The interval at which the gateway sends keepalive packets to the network server to keep the connection active.                                                                                                                                                                    |
| Start Interval           | The interval at which the gateway updates the network server with gateway statistics.                                                                                                                                                                                             |
| Push Timeout             | The timeout for waiting for a response from the server after the gateway sends data.                                                                                                                                                                                              |
| <b>Expert Options</b>    |                                                                                                                                                                                                                                                                                   |
| Enable                   | When enabled, the gateway supports a customized configuration file for the packet forwarder. <b>The customized configuration overrides the packet forward settings in the web GUI.</b> Click <b>Example</b> to open the reference page for the correct configuration file format. |

- Click **Save & Apply** to save the settings.

## Traffic

This section is used to view the latest traffic received from end devices or the network server. The gateway displays up to 30 traffic records.

- On the left bar, select **Packet Forward** page.



- On the top bar, select **Traffic** tab.
- View the traffic records.

| General   | Radios                      | Packet Filters | Advanced | Traffic |      |      |                                               | Refresh |
|-----------|-----------------------------|----------------|----------|---------|------|------|-----------------------------------------------|---------|
| Direction | Time                        | Frequency      | Datarate | Channel | RSSI | SNR  | Data                                          |         |
| Down      | 0000-00-00T00:00:00.000000Z | 924.500000     | SF9BW500 | 0       |      |      | YFkFtQcgLjpSNk7N                              |         |
| Up        | 0000-00-00T00:00:00.000000Z | 905.900000     | SF9BW125 | 2       | -79  | 12.5 | gFkFtQcAOUIARue9gBop                          |         |
| Up        | 0000-00-00T00:00:00.000000Z | 905.700000     | SF7BW125 | 1       | -100 | -6.2 | gA4VTwaAlgVBduyah/6Vuf9naiaKDnw02QgLEhmyT...  |         |
| Down      | 0000-00-00T00:00:00.000000Z | 925.700000     | SF9BW500 | 0       |      |      | YFkFtQeLToFA2jijLjKjwU=                       |         |
| Up        | 0000-00-00T00:00:00.000000Z | 906.300000     | SF9BW125 | 4       | -86  | 9.5  | gFkFtQcAOEJVdKD3HlwPoBpTknq7vqERDIXAw+S...    |         |
| Down      | 0000-00-00T00:00:00.000000Z | 927.500000     | SF9BW500 | 0       |      |      | YCiGqwYgFDZ0vS4o                              |         |
| Up        | 0000-00-00T00:00:00.000000Z | 906.900000     | SF9BW125 | 7       | -87  | 8.8  | gCiGqwYAIT8A6Zw6Dp4T                          |         |
| Down      | 0000-00-00T00:00:00.000000Z | 926.900000     | SF9BW500 | 0       |      |      | YCxw9wYghDSI1tyY                              |         |
| Up        | 0000-00-00T00:00:00.000000Z | 906.700000     | SF9BW125 | 6       | -84  | 10.8 | gCxx9wYAKEEA3t3W7vm0                          |         |
| Down      | 0000-00-00T00:00:00.000000Z | 923.900000     | SF9BW500 | 0       |      |      | YCiGqwalEzYFA2jijKuvPL4=                      |         |
| Down      | 0000-00-00T00:00:00.000000Z | 923.300000     | SF9BW500 | 0       |      |      | YHuXywelbTYFA2jijN6k6GQ=                      |         |
| Up        | 0000-00-00T00:00:00.000000Z | 905.700000     | SF9BW125 | 1       | -82  | 9.2  | gCiGqwYAlD9VdnlRNlq1oEJjdDorjUa5Lny+JaW38S... |         |

| Parameter    | Description                                                                                                                               |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Refresh/Stop | <b>Refresh:</b> Click to refresh the page and update the latest data automatically.<br><b>Stop:</b> Click to stop automatic page updates. |
| Direction    | The transmission direction of the packet.                                                                                                 |
| Time         | The time when the packet is received.                                                                                                     |
| Frequency    | The frequency used to receive or send the packet.                                                                                         |
| Datarate     | The data rate of the packet.                                                                                                              |
| Channel      | The frequency channel used to receive or send the packet.                                                                                 |
| RSSI         | The received signal strength of the packet.                                                                                               |
| SNR          | The signal-to-noise ratio of the packet.                                                                                                  |
| Data         | The encrypted data of the packet.                                                                                                         |

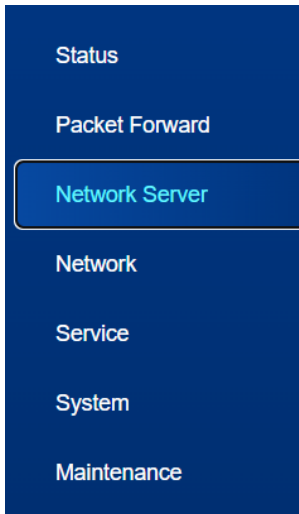
## Network Server

The gateway can work as a LoRaWAN<sup>®</sup> network server when the packet forwarder type is set to **Embedded NS**. This chapter describes how to use the gateway embedded network server.

### General

This section is used to configure the global channel plan settings for the network server.

1. On the left bar, select **Network Server** page.



2. On the top bar, select **General** tab.
3. Configure the global channel plan parameters as required.

Global Channel Plan Setting

Channel Plan

• If you want to modify Channel Plan, please go to [Packet forwarder]-[Radio] .

Channel

Additional Channels

| Frequency(MHz) | Min Datarate | Max Datarate |
|----------------|--------------|--------------|
| +              |              |              |

| Parameter    | Description                                                                                                                                                                                                                                                           |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Channel Plan | Display the current channel plan. This can be changed in <b>Packet Forward &gt; Radio</b> page.                                                                                                                                                                       |
| Channel      | <p>Allow end devices to communicate via specific frequency channels by entering the channel indexes. Examples:</p> <p>1,40: Enable Channel 1 and 40</p> <p>1-40: Enable Channel 1-40</p> <p>1-40, 60: Enable Channel 1-40 and 60</p> <p>Null: Enable all channels</p> |

| Parameter                | Description                                                                                                                                                             |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Addition-<br>al Channels | Click plus icon to add channels not defined by the LoRaWAN <sup>®</sup> Regional Parameters. This parameter only works with channel plans other than US915/AU915/CN470. |

4. Click **Save & Apply** to save the settings.

## Devices

This section is used to add and manage LoRaWAN<sup>®</sup> end devices. The gateway supports up to 20 devices.

### Prerequisites:

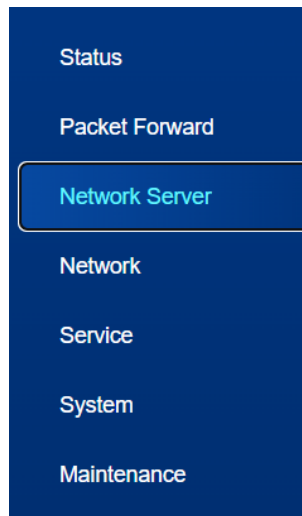
- The end device class type is Class A or Class C.
- Obtain the device information from the vendor.

| <div> Add Batch Import Delete <div>DeviceEUI</div> </div> |            |           |         |           |             |           |                          |                |
|-----------------------------------------------------------|------------|-----------|---------|-----------|-------------|-----------|--------------------------|----------------|
| <input type="checkbox"/>                                  | DeviceName | DeviceEUI | Class   | Join Type | Application | Activated | Create Time              | Last Seen      |
| <input type="checkbox"/>                                  | 50         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 49 seconds ago |
| <input type="checkbox"/>                                  | 49         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 34 seconds ago |
| <input type="checkbox"/>                                  | 48         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 44 seconds ago |
| <input type="checkbox"/>                                  | 47         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 1 mins ago     |
| <input type="checkbox"/>                                  | 46         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 38 seconds ago |
| <input type="checkbox"/>                                  | 45         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 26 seconds ago |
| <input type="checkbox"/>                                  | 44         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 1 mins ago     |
| <input type="checkbox"/>                                  | 43         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 1 seconds ago  |
| <input type="checkbox"/>                                  | 42         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 53 seconds ago |
| <input type="checkbox"/>                                  | 41         | 24e124    | Class C | OTAA      |             | ✓         | 2026-08-07 10:39:29+0100 | 33 seconds ago |

The gateway supports adding a device individually or batch importing devices. Please select one method to add devices.

### Add a Single Device

1. On the left bar, select **Network Server** page.



2. On the top bar, select **Device** tab.
3. Click **Add** and configure the device related parameters.

Add Devices
×

\* DeviceName

Description

\* DeviceEUI

\* Class

Class A

\* Join Type

OTAA

\* Appkey

\* DevAddr

\* NwkSkey

\* AppSkey

▼ Advanced Settings

\* RX1 Datarate Offset

0

\* RX2 Datarate

DR8 (SF12, 500kHz)

RX2 Channel Frequency/Hz

923300000

Device Channel

Range 0-63, separate multiple val

\* Uplink Frame-counter

0

\* Downlink Frame-counter

0

\* FPort

1

Cancel

Add Next

Add

| Parameter   | Description                                                           |
|-------------|-----------------------------------------------------------------------|
| Device Name | Define a unique name for the device.                                  |
| Description | For noting this device.                                               |
| Device EUI  | The unique 16-digit hexadecimal EUI of the device.                    |
| Class       | Select the device class type from <b>Class A</b> and <b>Class C</b> . |
| Join Type   | Select the device join type from <b>OTAA</b> and <b>ABP</b> .         |

| Parameter              | Description                                                                                                                                                                                                                                                                                                                             |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| App Key                | When join type is OTAA, set the 32-digit hexadecimal Application Key value.                                                                                                                                                                                                                                                             |
| DevAddr                | When the join type is ABP, set the 8-digit hexadecimal Device Address.                                                                                                                                                                                                                                                                  |
| NwkSKey                | When the join type is ABP, set the 32-digit hexadecimal Network Session Key value.                                                                                                                                                                                                                                                      |
| AppSKey                | When the join type is ABP, set the 32-digit alphanumeric Application Session Key value.                                                                                                                                                                                                                                                 |
| Advanced Settings      | <b>RX1 Datarate Offset:</b> The offset used to calculate the RX1 data rate based on the uplink data rate.                                                                                                                                                                                                                               |
|                        | <b>RX2 Datarate:</b> The data rate of RX2 window.                                                                                                                                                                                                                                                                                       |
|                        | <b>RX2 Channel Frequency:</b> The frequency of RX2 window.                                                                                                                                                                                                                                                                              |
|                        | <b>Device Channel:</b> Allow the device to communicate via specific frequency channels by entering the channel indexes. This parameter only works with CN470/US915/AU915 channel plans.<br>Examples:<br>1,40: Enable Channel 1 and 40<br>1-40: Enable Channel 1-40<br>1-40, 60: Enable Channel 1-40 and 60<br>Null: Enable all channels |
|                        | <b>Class C ACK Timeout:</b> The time to wait for a downlink response from class C devices. If no response is received within this time, the gateway will retransmit the downlink command.                                                                                                                                               |
| Uplink Frame-counter   | When the join type is ABP, set the uplink frame-counter.                                                                                                                                                                                                                                                                                |
| Downlink Frame-counter | When the join type is ABP, set the downlink frame-counter.                                                                                                                                                                                                                                                                              |
| FPort                  | FPort (Frame Port) is a single-byte field in the MAC payload that identifies the type or destination of the data. For Mile-sight end devices with default settings, the FPort is 85.                                                                                                                                                    |

| Parameter                   | Description                                  |
|-----------------------------|----------------------------------------------|
| Frame-counter<br>Validation | Enable or disable to prevent replay attacks. |

- Click **Add** to complete the addition, or click **Add Next** to add a new device.
- Check if the device status is activated. If not, navigate to **Network Server > Packets** to check for communication between the device and the gateway.

### Batch Import Devices

- On the left bar, select **Network Server** page.

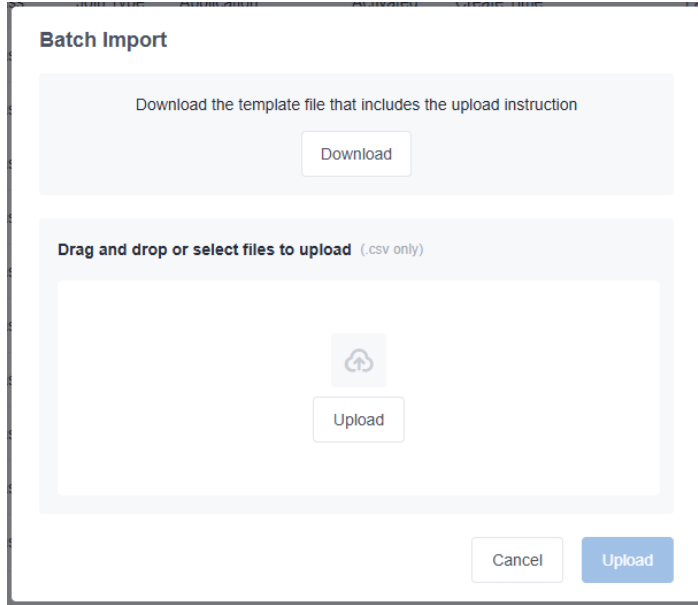


- On the top bar, select **Device** tab.
- Click **Batch Import**.
- In the pop-up window, download the template file and add the device information to the template file.



**Note:**

When editing template files, do not delete the table headers or the instructions at the top.



The image shows a 'Batch Import' dialog box. At the top, it says 'Batch Import'. Below this, there is a section with the text 'Download the template file that includes the upload instruction' and a 'Download' button. The next section is titled 'Drag and drop or select files to upload (.csv only)' and contains a large rectangular area with a cloud icon and an 'Upload' button. At the bottom right of the dialog, there are 'Cancel' and 'Upload' buttons.

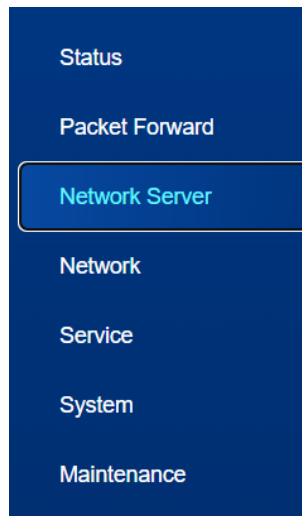
5. Select the device file to upload or drag the file to the target box.
6. Click **Upload**. If upload failed, an error message will pop-up; if upload successfully, the devices will be added to the **Devices** page.

## Application

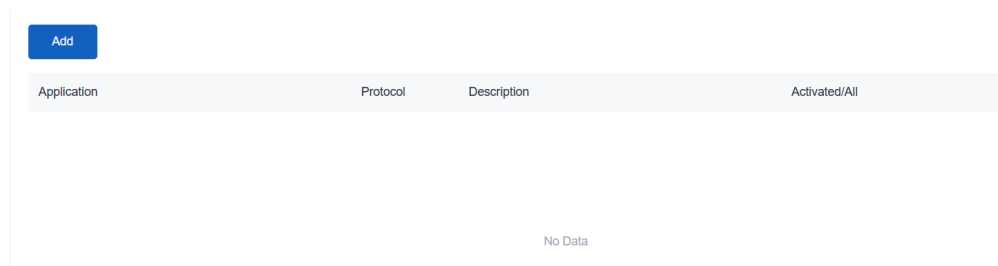
This section is used to add and manage applications. An application is a collection of devices with the same purpose/of the same type. Users can add a series of devices to the same application that need to send data to the same server. The gateway supports adding up to three applications, and each application can only connect to one server.

### Add an Application

1. On the left bar, select **Network Server** page.



2. On the top bar, select **Application** tab.
3. Click **Add** to add a new application.



4. Configure the application basic info, then click **Next**.

← Add Application

1

2

Basic Information

Add Device

Application

Description

Protocol

MQTT

| Parameter   | Description                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------|
| Application | Define a unique name for the application.                                                                          |
| Description | For noting this application.                                                                                       |
| Protocol    | Select the transmission protocol to connect to the remote server from <b>MQTT</b> , <b>HTTP</b> and <b>HTTPS</b> . |

5. Select the devices to add to this application, or click plus icon in the top right to add a new device. Then click **Save**.

← Add Application

Basic Information Add Device

No Device Selected 49

| Device Name                            | Description | Device EUI       | Join Type | Class | Activated |
|----------------------------------------|-------------|------------------|-----------|-------|-----------|
| <input checked="" type="checkbox"/> 50 |             | 24e1244060574a64 | Class C   | OTAA  | ✓         |
| <input type="checkbox"/> 49            |             | 24e1244060573876 | Class C   | OTAA  | ✓         |
| <input type="checkbox"/> 48            |             | 24e1244060578c9c | Class C   | OTAA  | ✓         |
| <input type="checkbox"/> 47            |             | 24e124406057d96d | Class C   | OTAA  | ✓         |
| <input type="checkbox"/> 46            |             | 24e124406057bd03 | Class C   | OTAA  | ✓         |
| <input type="checkbox"/> 45            |             | 24e124406057ab94 | Class C   | OTAA  | ✓         |

Save Previous Cancel

6. Navigate **Device** page to add or delete devices, or navigate to **HTTP/HTTPS/MQTT** page to configure server info. For details, refer to the following content.

## Manage Device in an Application

1. Select the desired application, click .
2. Under **Device** tab, click **Add** to add devices to this application, or select target devices and click **Delete** to remove them from the application.

← test

Device MQTT

Add Delete

DeviceEUI

| DeviceName                  | DeviceEUI        | Class   | Join Type | Application | Activated |
|-----------------------------|------------------|---------|-----------|-------------|-----------|
| <input type="checkbox"/> 50 | 24e1244060574a64 | Class C | OTAA      | test        | ✓         |

Total: 1

< 1 > 10 / page Go To Page

## Configure MQTT/HTTP/HTTPS Settings

1. Select the desired application, click .
2. Under **MQTT/HTTP/HTTPS** tab, configure the server parameters.

### HTTP/HTTPS

| Parameter | Description                           |
|-----------|---------------------------------------|
| Name      | Define a unique name for this server. |

| Parameter    | Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable       | Enable or disable to forward data to a HTTP(s) server.                                                                                                                                                                                                                                                                                                                                                                             |
| HTTP Headers | Click plus icon to add an HTTP header name and value.                                                                                                                                                                                                                                                                                                                                                                              |
| Data Topic   | <p>Set the URL to send different types of data. For more details, refer to MQTT&amp;HTTP Application Guide.</p> <p><b>Uplink Data:</b> Device data uplinks.</p> <p><b>Join Notification:</b> Device join request packets.</p> <p><b>ACK Notification:</b> ACK notification after sending confirmed downlink commands to LoRaWAN<sup>®</sup> devices.</p> <p><b>Gateway Info:</b> Gateway basic information and network status.</p> |

## MQTT

| Parameter            | Description                                                                                                                            |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Name                 | Define a unique name for this server.                                                                                                  |
| Enable               | Enable or disable to set up the communication with a MQTT broker.                                                                      |
| <b>General</b>       |                                                                                                                                        |
| Broker Address       | The IP address or domain name of the MQTT broker.                                                                                      |
| Broker Port          | The service port of the MQTT broker.                                                                                                   |
| Client ID            | The unique identifier of the gateway.                                                                                                  |
| Keep Alive Interval  | The interval to send heartbeat packets regularly to keep alive.                                                                        |
| Data Re-transmission | When enabled, it supports storing up to 100 packets when the network is disconnected and re-transmits the data after network recovery. |
| Auto Re-connect      | If the connection is lost, the attempt to reconnect will be made automatically.                                                        |

| Parameter               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <b>Reconnect Period:</b> The interval to reconnect the server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Clean Session           | When enabled, the connection will create a temporary session, and all information will be lost when the client is disconnected from the broker; when disabled, the connection will create a persistent session that will remain and save offline messages until the session logs out over time.                                                                                                                                                                                                                                                                                                                                                              |
| User Credentials        | <p>Enable or disable to authenticate with username and password.</p> <p><b>Username:</b> The username for authentication.</p> <p><b>Password:</b> The password for authentication.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| TLS                     | <p>Enable or disable TLS authentication.</p> <p><b>Mode:</b> Select the certificate mode as <b>CA Signed Server Certificate</b> to use preloaded certificates, or <b>Self Signed Certificates</b> to import the custom CA certificates(.crt or .pem), client Certificates(.crt) and client key(.key) for verification.</p> <p><b>SSL Security:</b> After enabled, the gateway will verify the certificate's validity.</p> <div>  <b>Tip:</b><br/>         If MQTT broker type is HiveMQ, enable TLS and set the mode as <b>CA signed Server Certificate</b>.       </div> |
| Last Will and Testament | Enable or disable sending a will message. The last will message will be sent automatically when the MQTT client is disconnected abnormally. It is typically used to send device status information or notify other devices or proxy servers of the device's offline status.                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | <p><b>Last-Will Topic:</b> The topic to receive last will messages.</p> <p><b>Last-Will QoS:</b> QoS0, QoS1 and QoS2 are optional.</p> <p><b>Last-Will Retain:</b> Enable or disable to set last will message as retain message.</p> <p><b>Last-Will Payload:</b> The content of the last will message.</p>                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Data Topic</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Data Type         | <p>The data type to communicate with MQTT broker. For more details, refer to MQTT&amp;HTTP Application Guide.</p> <p><b>Uplink Data:</b> Receive device uplink packets.</p> <p><b>Downlink Data:</b> Send downlink commands to devices.</p> <p><b>Join Notification:</b> Receive device join request packets.</p> <p><b>ACK Notification:</b> Receive ACK packets after sending confirmed downlink commands to devices.</p> <p><b>Gateway Info:</b> Receive gateway basic information and network status.</p> <p><b>Request data:</b> Send request commands to enquire or configure the gateway.</p> <p><b>Response data:</b> Receive the replies after sending request to Request data topic.</p> |
| Topic             | Topic name of the data type used for publishing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Period            | Display the report condition of the uplink data. Among them, Gateway Info supports configuring the report period.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Retain            | Enable or disable to set the latest message of this topic as retain message.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| QoS               | <p>QoS0, QoS1 or QoS2 is optional.</p> <p>QoS 0 –Only Once</p> <p>This is the fastest method and requires only one message. It is also the most</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Parameter | Description                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | <p>unreliable transfer mode.</p> <p>QoS 1 –At Least Once</p> <p>This level guarantees that the message will be delivered at least once, but may be delivered more than once.</p> <p>QoS 2 –Exactly Once</p> <p>QoS 2 is the highest level of service in MQTT. This level guarantees that each message is received only once by the intended recipients. QoS 2 is the safest and slowest quality of service level.</p> |

3. Click **Save & Apply** to save the settings.

## Packets

This section is used to view communication packets between the connected devices and the gateway.

The gateway supports displaying 500 packets.

| <a href="#">Clear Data</a>                                                                                                                                                                                       |                  |           |          |          |      |       |       |                          |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------|----------|----------|------|-------|-------|--------------------------|--|
| DeviceEUI                                                                                                                                                                                                        | Gateway ID       | Frequency | DataRate | RSSI/SNR | Size | Cnt   | Type  | Time                     |  |
| 24e1244060572ac5                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 926300000 | SF9BW500 | -/-      | 0    | 15678 | DnUnc | 2026-08-13 04:04:37+0100 |  |
| 24e1244060572ac5                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 906500000 | SF9BW125 | -81/7.8  | 21   | 16448 | UpCnf | 2026-08-13 04:04:37+0100 |  |
| 24e1244060571869                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 925100000 | SF9BW500 | -/-      | 0    | 15476 | DnUnc | 2026-08-13 04:04:36+0100 |  |
| 24e1244060571869                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 906100000 | SF9BW125 | -87/8.5  | 21   | 16579 | UpCnf | 2026-08-13 04:04:36+0100 |  |
| 24e1244060572667                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 923300000 | SF9BW500 | -/-      | 0    | 14492 | DnUnc | 2026-08-13 04:04:34+0100 |  |
| 24e1244060572667                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 905500000 | SF9BW125 | -73/11.8 | 0    | 15863 | UpCnf | 2026-08-13 04:04:34+0100 |  |
| 24e124406057c3b8                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 926300000 | SF9BW500 | -/-      | 0    | 14902 | DnUnc | 2026-08-13 04:04:33+0100 |  |
| 24e124406057c3b8                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 906500000 | SF9BW125 | -79/9.2  | 0    | 16459 | UpCnf | 2026-08-13 04:04:33+0100 |  |
| 24e124406057c3b8                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 926900000 | SF9BW500 | -/-      | 0    | 14901 | DnUnc | 2026-08-13 04:04:32+0100 |  |
| 24e124406057c3b8                                                                                                                                                                                                 | c0ba1fff0e027cb5 | 906700000 | SF9BW125 | -78/13.8 | 20   | 16458 | UpCnf | 2026-08-13 04:04:32+0100 |  |
| <div>  Total: 500         <div>           &lt; 1 2 3 4 5 6 7 ... 50 &gt;         </div> <div>           10 / page         </div> <div>           Go To         </div> <div>           Page         </div> </div> |                  |           |          |          |      |       |       |                          |  |

| Parameter  | Description                                  |
|------------|----------------------------------------------|
| Refresh    | Update the latest data packet records.       |
| Clear Data | Clears all data packet records on this page. |
| Device EUI | The device EUI of the packet.                |
| Gateway ID | The ID of the gateway that sends the packet. |

| Parameter                                                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency                                                                           | The frequency used to receive or send the packet.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Data Rate                                                                           | The data rate of the packet.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| RSSI/SNR                                                                            | The received signal strength and signal-to-noise ratio.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Size                                                                                | The size of the packet.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Fcnt                                                                                | The frame counter of the packet.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Type                                                                                | <p>Display the data type.</p> <ul style="list-style-type: none"> <li>• <b>JnAcc</b> - Join Accept Packet</li> <li>• <b>JnReq</b> - Join Request Packet</li> <li>• <b>UpUnc</b> - Uplink Unconfirmed Packet</li> <li>• <b>UpCnf</b> - Uplink Confirmed Packet; ACK response from the network is requested.</li> <li>• <b>DnUnc</b> - Downlink Unconfirmed Packet</li> <li>• <b>DnCnf</b> - Downlink Confirmed Packet; ACK response from the end device is requested.</li> </ul> |
| Time                                                                                | The time when the packet was received.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  | Opens the packet details.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Detail <span>×</span> |                                            |
|-----------------------|--------------------------------------------|
| DevAddr               | 07128624                                   |
| GwEUI                 | c0ba1ffffe027cb5                           |
| AppEUI                | 24e124c0002a0001                           |
| DeviceEUI             | 24e1244060572ac5                           |
| Class Type            | Class C                                    |
| Immediately           | -                                          |
| Timestamp             | 1631740125                                 |
| Type                  | UpCnf                                      |
| Adr                   | false                                      |
| AdrAckReq             | false                                      |
| Ack                   | false                                      |
| Fcnt                  | 16448                                      |
| Port                  | 85                                         |
| Modulation            | LORA                                       |
| Bandwidth             | 125                                        |
| SpreadFactor          | 9                                          |
| Bitrate               | 0                                          |
| CodeRate              | 4/5                                        |
| SNR                   | 7.8                                        |
| RSSI                  | -81                                        |
| Power                 | -                                          |
| Payload(b64)          | AccIAiYCA6QGBAAFEAYABwAl/2cB               |
| Payload(hex)          | 01c70802260203a406040005100600070008ff6701 |
| MIC                   | 892238e6                                   |

| Parameter   | Description                                                |
|-------------|------------------------------------------------------------|
| DevAddr     | The device address of the device that sends the packet.    |
| GwEUI       | The ID of the gateway that sends the packet.               |
| App EUI     | The App EUI of the device that sends the packet.           |
| Device EUI  | The device EUI of the packet.                              |
| Class Type  | The class type of the device that sends the packet.        |
| Immediately | Indicates whether the downlink packet is sent immediately. |

| Parameter     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Timestamp     | The time when the packet is received after the packet forwarder starts running. Unit: ms.                                                                                                                                                                                                                                                                                                                                                                               |
| Type          | Display the data type. <ul style="list-style-type: none"> <li>• <b>JnAcc</b> - Join Accept Packet</li> <li>• <b>JnReq</b> - Join Request Packet</li> <li>• <b>UpUnc</b> - Uplink Unconfirmed Packet</li> <li>• <b>UpCnf</b> - Uplink Confirmed Packet; ACK response from the network is requested.</li> <li>• <b>DnUnc</b> - Downlink Unconfirmed Packet</li> <li>• <b>DnCnf</b> - Downlink Confirmed Packet; ACK response from the end device is requested.</li> </ul> |
| Adr           | Indicates whether the device enables ADR.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| AdrAckReq     | Nodes periodically transmit ADRACKReq to validate that the network is receiving uplink messages. True means the network should respond within ADR_ACK_DELAY. False means ADR is disabled or the network does not respond within ADR_ACK_DELAY.                                                                                                                                                                                                                          |
| Ack           | Indicates whether the packet is an ACK packet.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Fcnt          | The frame counter of the packet.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Port          | The FPort used to transmit the packet. MAC commands use port 0; application data uses ports 1-233.                                                                                                                                                                                                                                                                                                                                                                      |
| Modulation    | LORA means the physical layer uses LoRa modulation.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Bandwidth     | The bandwidth of the frequency channel.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Spread Factor | The spreading factor of the packet.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Bitrate       | The bitrate of the frequency channel.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| CodeRate      | The code rate of the frequency channel.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| SNR           | The signal-to-noise ratio of the packet.                                                                                                                                                                                                                                                                                                                                                                                                                                |
| RSSI          | The received signal strength of the packet.                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Power         | The TX power of the device.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Payload (b64) | The payload in Base64 format.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Payload (hex) | The payload in hexadecimal format.                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter | Description                                                                                             |
|-----------|---------------------------------------------------------------------------------------------------------|
| MIC       | The cryptographic message integrity code computed over MHDR, FHDR, FPort, and the encrypted FRMPayload. |

#### Related information

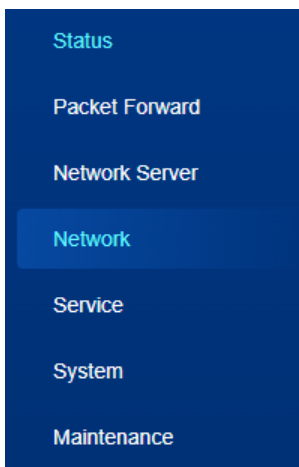
[Packet Forward](#)

## Network

### Link Backup

The gateway supports setting the priority of the available network links and using ping detection to determine whether a link is available. This chapter is used to configure the primary and secondary network links and the ping detection settings.

1. On the left bar, select **Network** page.



2. On the top bar, select **Link Backup** tab.
3. Configure the link backup parameters as required.

| Main Link

Main Link

Cellular

Enable Ping Detection 



Primary Server (IPv4)

8.8.8.8

Secondary Server (IPv4)

223.5.5.5

Interval/s

300

Retry Interval/s

5

Timeout/s

3

Max Ping Retries

3

### Secondary link

|                                                                                                         |                                     |
|---------------------------------------------------------------------------------------------------------|-------------------------------------|
| Secondary link                                                                                          | WAN                                 |
| Enable Ping Detection  | <input checked="" type="checkbox"/> |
| Primary Server (IPv4)                                                                                   | 8.8.8.8                             |
| Secondary Server (IPv4)                                                                                 | 223.5.5.5                           |
| Interval/s                                                                                              | 300                                 |
| Retry Interval/s                                                                                        | 5                                   |
| Timeout/s                                                                                               | 3                                   |
| Max Ping Retries                                                                                        | 3                                   |

### More

|                                                                                                      |                                     |
|------------------------------------------------------------------------------------------------------|-------------------------------------|
| Revert to Main Link                                                                                  | <input checked="" type="checkbox"/> |
| Revert Interval/s                                                                                    | 300                                 |
| Emergency Reboot  | <input type="checkbox"/>            |

| Parameter             | Description                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main Link             | Select from <b>WAN</b> , <b>Cellular</b> and <b>WLAN</b> .                                                                                                                                                                                                                                                                                        |
| Secondary Link        | Select from <b>WAN</b> , <b>Cellular</b> , <b>WLAN</b> , or <b>None</b> , depending on the main link.                                                                                                                                                                                                                                             |
| Enable Ping Detection | <p>When enabled, the gateway periodically sends ICMP packets to the corresponding servers to detect the connection.</p> <div>  <b>Note:</b><br/> It is suggested to disable this option if the gateway is connected to a private, non-Internet network. </div> |

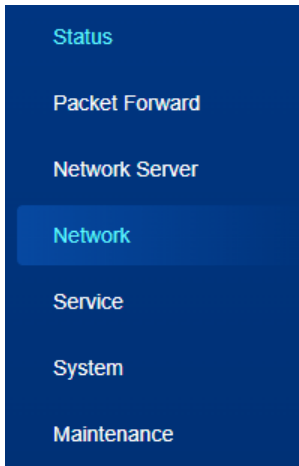
| Parameter               | Description                                                                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Server (IPv4)   | The IPv4 server address that the gateway pings to determine whether the connection is still available.                                           |
| Secondary Server (IPv4) | The IPv4 server address that the gateway tries to ping if the primary server is unavailable.                                                     |
| Interval                | The time interval between two ping attempts.                                                                                                     |
| Retry Interval          | The interval to retry the ping if the previous ping reaches the timeout and does not reach the max retry times.                                  |
| Timeout                 | The maximum time that the gateway waits for a ping response. If no response is received within this time, the ping request is considered failed. |
| Max Ping Retries        | The number of times that the gateway retries sending a ping request before determining that the connection has failed.                           |
| <b>More</b>             |                                                                                                                                                  |
| Revert to Main Link     | When the main link connection recovers, revert to the main link.                                                                                 |
| Revert interval         | Specify the maximum time to wait before switching back to the main link. A value of 0 disables this function.                                    |
| Emergency Reboot        | Enable the gateway to reboot if no network link is available.                                                                                    |

- Click **Save & Apply** to save the settings.

## WAN

The gateway supports connecting the Ethernet port to a router to obtain network access. This chapter describes how to configure the Ethernet WAN connection.

1. On the left bar, select **Network** page.



2. On the top bar, select **WAN** tab.
3. Configure the WAN parameters as required.

|                      |                |
|----------------------|----------------|
| Connection Type      | Static IP ▼    |
| IP Address           | 192.168.40.96  |
| Netmask              | 255.255.255.0  |
| Gateway              | 192.168.40.1   |
| Primary DNS Server   | 192.168.40.179 |
| Secondary DNS Server | 223.5.5.5      |

| Parameter          | Description                                                                                                                                                                                                                                                                                                    |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connection Type    | <p>Select the connection type as required. It's <b>DHCP Client</b> by default.</p> <p><b>Static IP:</b> Assign a static IP address, netmask, and gateway to the Ethernet WAN port.</p> <p><b>DHCP Client:</b> Configure the Ethernet WAN interface as a DHCP client to obtain an IP address automatically.</p> |
| Primary DNS Server | Set the primary IPv4 DNS server.                                                                                                                                                                                                                                                                               |

| Parameter            | Description                                                |
|----------------------|------------------------------------------------------------|
| Secondary DNS Server | Set the secondary IPv4 DNS server.                         |
| <b>Static IP</b>     |                                                            |
| IP Address           | Set the IPv4 address of the Ethernet port.                 |
| Netmask              | Set the netmask for the Ethernet port.                     |
| Gateway              | Set the gateway for the IPv4 address of the Ethernet port. |
| <b>DHCP</b>          |                                                            |
| Use Peer DNS         | Obtain DNS from the DHCP server.                           |

- Click **Save & Apply** to save the settings.
- Navigate to **Status > WAN** page to check if the Ethernet status is **Connected**.
- Configure [Link Backup](#) settings to select WAN interface as network link.

---

#### Related information

[Status](#)

[Tools](#)

## Cellular

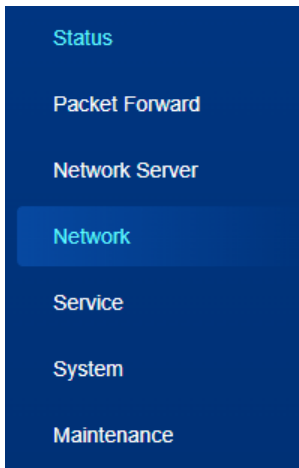
This chapter describes how to configure the settings to register to cellular network.

### Prerequisites

- The gateway is equipped with cellular capabilities.
- The supported frequencies of the SIM card matches the device model.
- Ensure the SIM card has sufficient balance and works properly in other devices.
- Ensure the device has installed the SIM card.
- Gather SIM information from the cellular operator.

## Basic Settings

1. On the left bar, select **Network** page.



2. On the top bar, select **Cellular** tab.
3. Configure the cellular settings as required.

|                      |                          |                                     |
|----------------------|--------------------------|-------------------------------------|
| Protocol             | IPv4                     | ▼                                   |
| APN                  | ctnet-1.apn              |                                     |
| Username             | user                     |                                     |
| Password             | ....                     |                                     |
| Authentication Type  | CHAP                     | ▼                                   |
| PIN Code             |                          |                                     |
| Enable IMS           | <input type="checkbox"/> |                                     |
| Primary DNS Server   |                          |                                     |
| Secondary DNS Server |                          |                                     |
| AT Command           | EG:AT+CGREG?             | <input type="button" value="Send"/> |
| Emergency Reboot     | <input type="checkbox"/> |                                     |

| Parameter | Description                              |
|-----------|------------------------------------------|
| Protocol  | Select <b>IPv4</b> or <b>IPv4/IPv6</b> . |

| Parameter            | Description                                                                                                                                                                                                                         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| APN                  | The Access Point Name for cellular registration and defining which external network to connect. Only letters, digits, "-" and "." are allowed, and the first character must not be "_" or ".". The maximum length is 63 characters. |
| Username             | The username for cellular dial-up connection provided by local ISP.                                                                                                                                                                 |
| Password             | The password for cellular dial-up connection provided by local ISP.                                                                                                                                                                 |
| PIN Code             | A 4-8 characters PIN code to unlock the SIM.                                                                                                                                                                                        |
| Enable IMS           | Enable or disable IMS feature. This parameter is only available for -L08GL model.                                                                                                                                                   |
| Primary DNS Server   | Customize the cellular primary DNS server. If left blank, the device will use operator's settings.                                                                                                                                  |
| Secondary DNS Server | Customize the cellular secondary DNS server. If left blank, the device will use operator's settings.                                                                                                                                |
| AT Command           | Send AT Command to get cellular information or configure advanced settings                                                                                                                                                          |

- Click **Save & Apply** to save the settings.
- Navigate to **Status > Cellular** page to check if the register status is **Ready** and if there is cellular IP address.
- Configure [Link Backup](#) settings to select cellular interface as network link.

#### Related information

[Status](#)

[Tools](#)

## WLAN

The gateway can work Wi-Fi as either access point or client. This chapter describes how to configure Wi-Fi settings.

### Access Point Settings

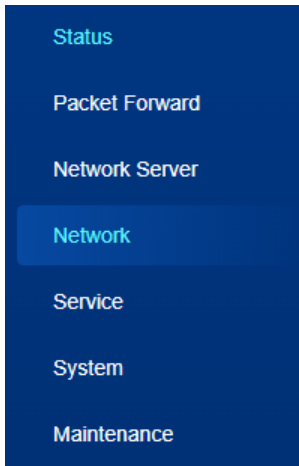
The device can work as an Access Point for device web access.



**Note:**

One gateway only supports 2 devices' WLAN connection to login this device at the same time.

1. On the left bar, select **Network** page.



2. On the top bar, select **WLAN** tab.
3. Enable WLAN feature.
4. Select the interface type as **Access Point** and configure the related parameters.

#### | WLAN

|                 |                                     |
|-----------------|-------------------------------------|
| Enable          | <input checked="" type="checkbox"/> |
| Interface Type  | Access Point                        |
| SSID *          | Gateway_FD87D3                      |
| Encryption Mode | No Encryption                       |

#### | IP Settings

|              |               |
|--------------|---------------|
| Protocol     | Static IP     |
| IP Address * | 192.168.1.1   |
| Netmask *    | 255.255.255.0 |

| Parameter | Description                                                                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SSID      | Define the Service Set Identifier (SSID) to identify this access point. The default value is <b>Gateway_XXXXXX</b> (XXXXXX=last 6 digits of WLAN MAC address). |

| Parameter          | Description                                                                                                                                                      |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BSSID              | Display the MAC address of WLAN interface.                                                                                                                       |
| Encryption Mode    | Select the encryption mode for connection. Options: No Encryption, WPA-PSK.                                                                                      |
| Key                | Set the key to connect to this access point when encryption mode is WPA-PSK. Only ASCII characters without spaces are allowed. The length is 8 to 63 characters. |
| <b>IP Settings</b> |                                                                                                                                                                  |
| Protocol           | It's fixed as Static IP.                                                                                                                                         |
| IP Address         | Set the IP address of this WLAN interface. The default value is <b>192.168.1.1</b> .                                                                             |
| Netmask            | Set the subnet mask of this WLAN interface.                                                                                                                      |

- Click **Save & Apply** to save the settings.
- Connect a smart phone or a computer to the access point. This requires the parameters the same as the access point.

## Client Settings

The device can work as a Client to connect to another Access Point for Internet access.

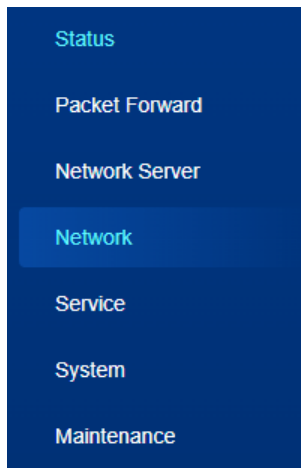
**Prerequisites:** A 2.4 GHz WLAN access point and the gateway is within its coverage area.



### Note:

If you access the device's web GUI via Wi-Fi, you will no longer be able to access it through Wi-Fi after setting the WLAN to client mode. Please use the Ethernet port to access the web GUI, or connect your computer to the same WLAN access point as the device and use the IP address assigned to the device by the AP.

1. On the left bar, select **Network** page.



2. On the top bar, select **WLAN** tab.
3. Enable WLAN feature.
4. Select the interface type as **Client** and configure the related parameters.

#### | WLAN

|                 |                                     |
|-----------------|-------------------------------------|
| Enable          | <input checked="" type="checkbox"/> |
| Interface Type  | Client ▼                            |
| SSID            | <input type="text"/>                |
| BSSID           | <input type="text"/>                |
| Encryption Mode | No Encryption ▼                     |

#### | IP Settings

|                      |                      |
|----------------------|----------------------|
| Protocol *           | Static IP ▼          |
| IP Address *         | <input type="text"/> |
| Netmask *            | 255.255.255.0        |
| Gateway *            | 192.168.1.1          |
| Primary DNS Server   | <input type="text"/> |
| Secondary DNS Server | <input type="text"/> |

| Parameter            | Description                                                                                                                                                       |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SSID                 | Set the Service Set Identifier (SSID) of the WLAN access point.                                                                                                   |
| BSSID                | Set the MAC address of the WLAN access point. Typically, enter either the SSID or the BSSID.                                                                      |
| Encryption Mode      | Select the encryption mode for connection. Options: No Encryption, WPA-PSK, WPA2-PSK, WPA-PSK/WPA2-PSK.                                                           |
| Key                  | Set the key to connect to the WLAN access point when encryption mode is not <b>No Encryption</b> .                                                                |
| <b>IP Setting</b>    |                                                                                                                                                                   |
| Protocol             | Select the mode to get the WLAN IP address.<br><b>DHCP Client:</b> Receive IP address from the access point.<br><b>Static IP:</b> Assign the IP address manually. |
| IP Address           | Set the WLAN interface IP address with the same subnet as the access point.                                                                                       |
| Subnet Mask          | Set the subnet mask of the WLAN interface IP address.                                                                                                             |
| Gateway              | Set the IP address of the connected gateway.                                                                                                                      |
| Primary DNS Server   | The primary DNS server address to send the ICMP packet.                                                                                                           |
| Secondary DNS Server | The secondary DNS server address to send the ICMP packet if the device does not receive the replies from the primary server.                                      |

- Click **Save & Apply** to save the settings.
- After connected, go to **Status** page to check if the status is Connected.
- Configure [Link Backup](#) settings to select WLAN interface as network link.

---

#### Related information

[Status](#)

[Tools](#)

## OpenVPN

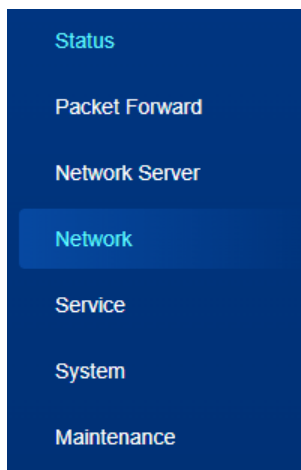
Virtual Private Network (VPN) is a feature to set up encrypted tunnels to ensure data secure transmission, and allow the access between two private networks. This chapter introduces the OpenVPN feature to ensure secure communication.

### Prerequisites

- A working OpenVPN server.
- The gateway has accessed the network to reach the OpenVPN server.
- A OpenVPN client configuration file according to sample: [client.conf](#). The parameters can be referred [here](#).

### Step

1. On the left bar, select **Network** page.



2. On the top bar, select **OpenVPN** tab.
3. Enable OpenVPN and configure the related parameters.

|                     |                                                                                                           |  |
|---------------------|-----------------------------------------------------------------------------------------------------------|--|
| Enable              | <input checked="" type="checkbox"/>                                                                       |  |
| File Configuration  | <input type="text" value="openvpn.ovpn"/> <span>Import</span>   <span>Export</span>   <span>Delete</span> |  |
| Status              | Connected                                                                                                 |  |
| Error Log           | <input type="checkbox"/>                                                                                  |  |
| Device Virtual IP   | 10.10.0.7                                                                                                 |  |
| Server Virtual IP   | 10.10.0.1                                                                                                 |  |
| Connection Duration | 0d, 00h 02m 59s                                                                                           |  |

| Parameter           | Description                                                                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| File Configuration  | Click <b>Import</b> to upload the .ovpn configuration file.                                                                                                    |
| Status              | Display the connection status between the gateway and the OpenVPN server.                                                                                      |
| VPN Global Route    | When enabled, all data traffic will be sent out via this OpenVPN tunnel; otherwise, only the data traffic under the subnet of the VPN tunnel will be sent out. |
| Error Log           | Display the connection and configuration error logs.                                                                                                           |
| Device Virtual IP   | Display the device virtual IP address after VPN connected.                                                                                                     |
| Server Virtual IP   | Display the server virtual IP address after VPN connected.                                                                                                     |
| Connection Duration | Display the connection time after connecting to the VPN server.                                                                                                |

- Click **Save & Apply** to save the settings.
- Check if the Status shows connected and if there are virtual IP addresses. If not, check error logs for troubleshooting.

## Service

### Device Management

This chapter describes how to connect the device to Milesight remote management platform.

#### Prerequisites

##### For Milesight Development Platform

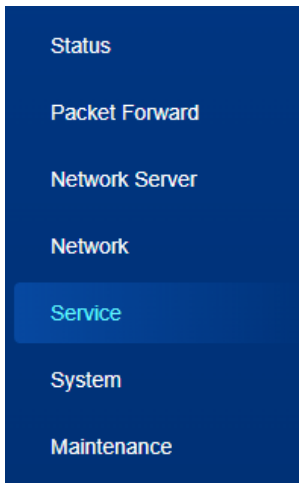
- The device has accessed the Internet network.
- Milesight Development Platform account and enterprise have been created, and device addition is supported.

##### For Milesight DeviceHub Platform

- A DeviceHub platform is deployed.
- The device can access the DeviceHub platform.

## Steps

1. On the left bar, select **Service** page.



2. Configure the platform related parameters.

**Auto Provision**

Enable ☐

**Management Platform**

Enable ☒

Platform Type Milesight Development Platform Connected

Sync Platform LNS ☐

When "Sync Platform LNS" is enabled, the gateway will connect to Milesight Development Platform LNS, and data forwarding to other NS will be disabled.

| Parameter                  | Description                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Auto Provision</b>      |                                                                                                                                                                               |
| Enable                     | Enable to receive the configurations from Milesight Development Platform once after the device is connected to Internet. This will work even Management Platform is disabled. |
| <b>Management Platform</b> |                                                                                                                                                                               |
| Enable                     | Enable the device to be managed by Milesight management platforms.                                                                                                            |
| Platform Type              | <b>Milesight DeviceHub 2.0</b> or <b>Milesight Development Platform</b> is optional.                                                                                          |

| Parameter         | Description                                                                                                                                                                 |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DeviceHub Address | Fill in the DeviceHub server IP address or domain name.                                                                                                                     |
| Sync Platform LNS | After enabled, the gateway will use the platform LNS, and the packet forwarder type will be switched to <b>Milesight Development Platform LNS</b> or <b>DeviceHub LNS</b> . |

3. Click **Save & Apply** to save the settings.
4. Add the device to the platform. For more details, refer to [Milesight Development Platform Guide](#) or [Milesight DeviceHub User Guide](#).
5. Check if connection status changes to **Connected** on the platform and the gateway.

## System

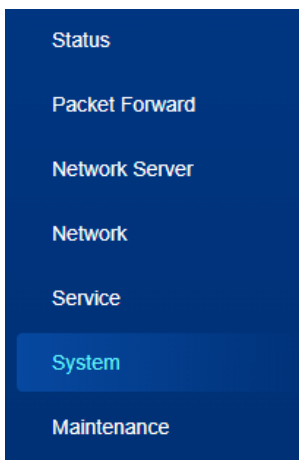
### General

This chapter describes the general access settings and time settings.

#### General

This section is used to change the gateway hostname.

1. On the left bar, select **System** page.



2. On the top bar, select **General** tab.
3. Change the hostname as required.

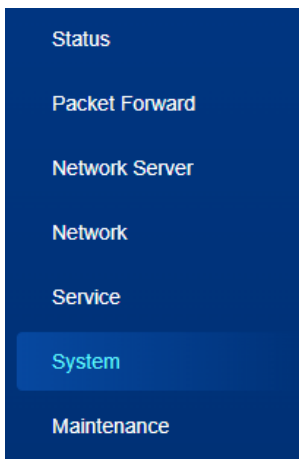
|          |                                      |
|----------|--------------------------------------|
| Hostname | <input type="text" value="Gateway"/> |
|----------|--------------------------------------|

- Click **Save & Apply** to save the settings.

## User

This section is used to change account info.

- On the left bar, select **System** page.



- On the top bar, select **User** tab.
- Change the username and password as required.

|                        |                                    |
|------------------------|------------------------------------|
| Username               | <input type="text" value="admin"/> |
| Old Password *         | <input type="password"/>           |
| New Password *         | <input type="password"/>           |
| Confirm New Password * | <input type="password"/>           |

| Parameter    | Description                                                                                                                                               |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Username     | Enter a new username. Only letters, digits, "-" and "_" are allowed, and the first character must be a letter or "_". Length limitation: 3-31 characters. |
| Old Password | Enter the old password.                                                                                                                                   |

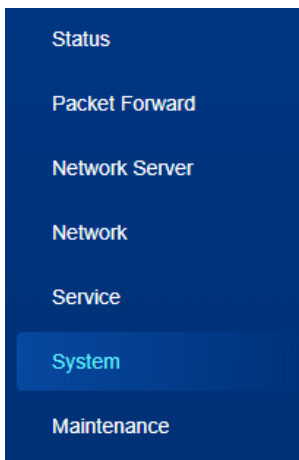
| Parameter            | Description                                                                                                                                                          |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| New Password         | Enter a new password. Only ASCII characters are allowed except spaces. The password must contain at least one letter and one number, and be 8 to 31 characters long. |
| Confirm New Password | Enter the new password again.                                                                                                                                        |

- Click **Save & Apply** to save the settings.
- Log in to the gateway with new account info.

## Time

This page is used to configure the device system time.

- On the left bar, select **System** page.



- On the top bar, select **Time** tab.
- Configure the general parameters as required.

|                    |                        |
|--------------------|------------------------|
| Current Time       | 2026-08-11 12:46:43    |
| Time Zone          | 0 Europe/London ▼      |
| Sync Type          | Sync with NTP Server ▼ |
| NTP Server Address | pool.ntp.org           |

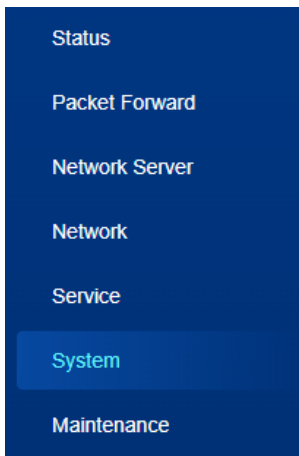
| Parameter                   | Description                                                                                                                      |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Current Time                | Displays the current device time.                                                                                                |
| Timezone                    | Select the time zone of the device.                                                                                              |
| Sync Type                   | Select the time sync source from <b>Sync with Browser</b> and <b>Sync with NTP server</b> .                                      |
| <b>Sync with NTP Server</b> |                                                                                                                                  |
| NTP Server Address          | Set the NTP server address (domain name/IP) to synchronize the time. This requires the gateway to be able to access this server. |
| <b>Sync with Browser</b>    |                                                                                                                                  |
| Browser Time                | Display the browser time.                                                                                                        |

- Click **Save & Apply** to save the settings.

## Access Service

This page is used to configure access parameters.

- On the left bar, select **System** page.



- On the top bar, select **Access Service** tab.
- Configure the parameters for web access.

## | HTTPS / HTTP

Enable



Local Access

HTTPS

Access Port

443

| Parameter    | Description                                                         |
|--------------|---------------------------------------------------------------------|
| Enable       | Enable or disable the web access service.                           |
| Local Access | Select the local access protocol from <b>HTTPS</b> or <b>HTTP</b> . |
| Access Port  | Select the port for local web access.                               |

- Click **Save & Apply** to save the settings.

## Maintenance

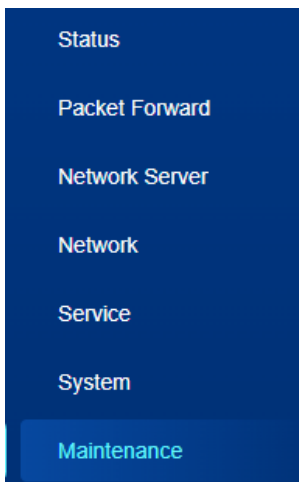
This chapter describes the logs, maintenance tools and features.

### Log

The log files can be used for troubleshooting if any problem.

**Prerequisites:** The device system time is correct.

- On the left bar, select **Maintenance** page.



## 2. Configure the log related parameters.

## | Remote Log Server

Enable ☒

Server Address \*

Port \*

## | Local Log Storage

Log Severity

Log File

Core dump 

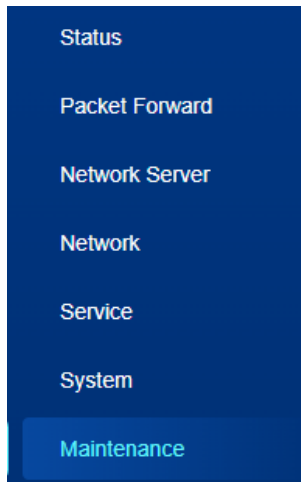
| Parameter                | Description                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Remote Log Server</b> |                                                                                                                                                                                                                                                                                                                                                                                   |
| Enable                   | Enable or disable to send the system log file to a remote server.                                                                                                                                                                                                                                                                                                                 |
| Server Address           | Set the remote log UDP server address (IP/domain name).                                                                                                                                                                                                                                                                                                                           |
| Port                     | Set the remote log server port.                                                                                                                                                                                                                                                                                                                                                   |
| <b>Local Log Storage</b> |                                                                                                                                                                                                                                                                                                                                                                                   |
| Log Severity             | <p>Select the severity to display the logs. To submit logs to technical support, it is recommended to set the log severity to Debug.</p> <div>  <b>Note:</b><br/>           After changing the log severity, please replicate the issue to ensure the logs capture the details.         </div> |
| Log File                 | Download system log file.                                                                                                                                                                                                                                                                                                                                                         |
| Core dump                | Core dump file contains a snapshot of a program's memory at a specific point in time when the program encounters a critical error or crashes, which can be used for debugging and troubleshooting purposes.                                                                                                                                                                       |

3. Click **Save & Apply** to save the settings.
4. Click **Download** to download the log file. You can check the log file directly or send it to Milesight technical support.

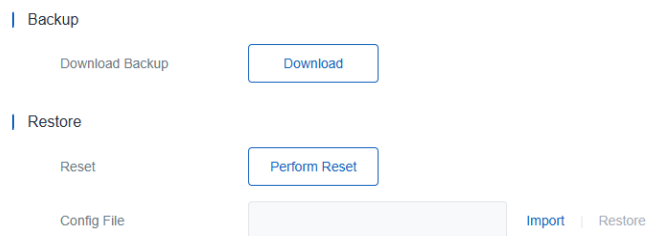
## Backup and Restore

This section is used to backup and restore settings.

1. On the left bar, select **Maintenance** page.



2. On the top bar, select **Backup/Upgrade** tab.
3. Click **Download** to download the configuration file of current device.



4. Open the web GUI of a new gateway with the same model, click **Import** to select the configuration file from the local path.
5. Click **Restore** to import the configurations to a new device.

## Upgrade

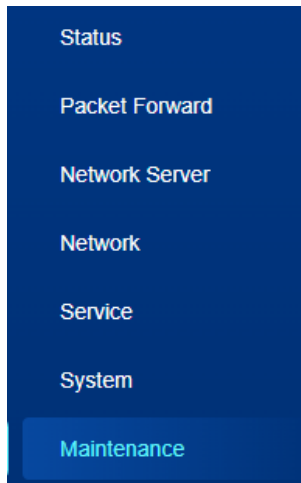
This section is used to upgrade the gateway.

### Prerequisites:

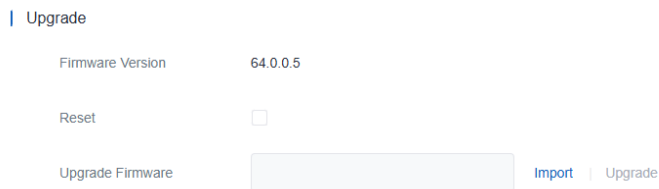
- Download the correct gateway firmware file from Milesight official website. It is recommended to consult technical support before upgrading to ensure a safe and successful upgrade.
- Ensure the network connection is stable enough for remote upgrade.

**Steps:**

1. On the left bar, select **Maintenance** page.



2. On the top bar, select **Backup/Upgrade** tab.
3. Click **Import** to select the firmware file from the local path.



4. Enable **Reset** as required. After enabled, the device will reset factory default settings after upgrade.
5. Click **Upgrade** to upgrade the device.



**CAUTION:**

Any operation on web page is not allowed during firmware upgrade; otherwise, the upgrade will be interrupted, or the device may even become inoperable.

- When the SYS LED of the device turns to steady green, log in to the web GUI to verify that the upgrade was successful.



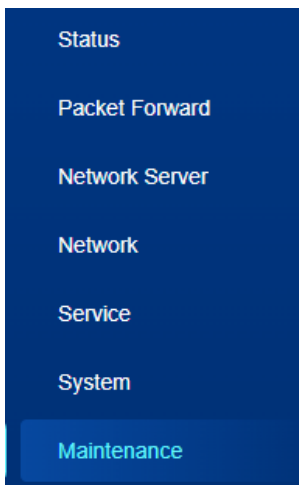
#### Troubleshooting:

If the web GUI displays abnormally after the upgrade, clear your browser cache.

## Factory Reset

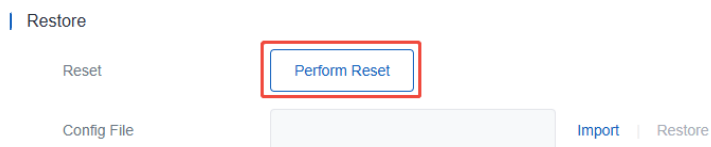
This section is used to reset the device to factory settings.

- On the left bar, select **Maintenance** page.



- On the top bar, select **Backup/Upgrade** tab.

- Click **Perform Reset**.

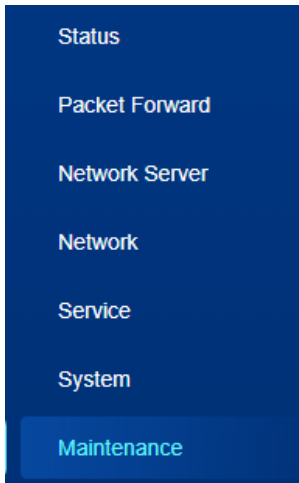


- In the pop-up window, click **Confirm**. The device will reset and reboot.

## Reboot

This section is used to reboot the device.

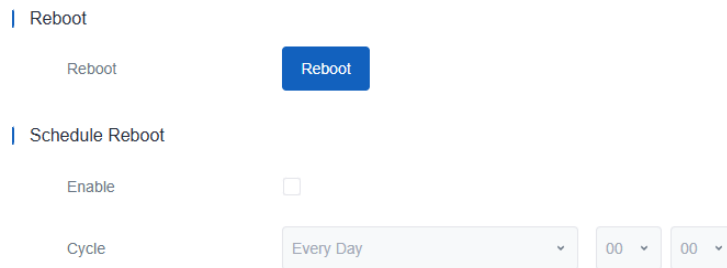
1. On the left bar, select **Maintenance** page.



2. On the top bar, select **Reboot** tab.
3. Select the option to reboot the device.

**Reboot Immediately:** Click **Reboot** to reboot this device.

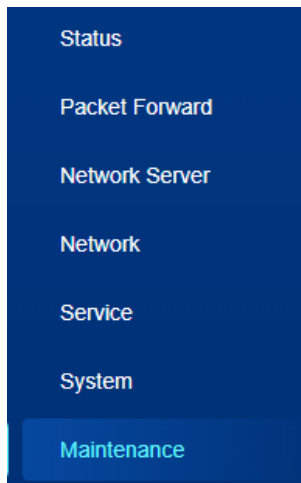
**Reboot on Schedule:** Enable **Schedule Reboot** and configure the rebooting cycle.

A screenshot of the 'Reboot' configuration page. It has two tabs: 'Reboot' and 'Schedule Reboot'. The 'Reboot' tab is active. Under the 'Reboot' tab, there is a 'Reboot' button. Under the 'Schedule Reboot' tab, there is an 'Enable' checkbox which is currently unchecked. Below the checkbox is a 'Cycle' section with a dropdown menu set to 'Every Day' and two time input fields, both set to '00'.

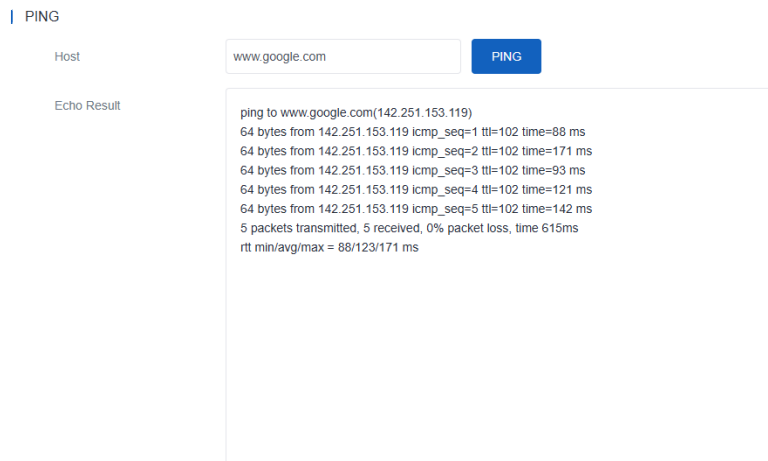
## Tools

This section is used to check network connectivity via ping tool.

1. On the left bar, select **Maintenance** page.



2. On the top bar, select **Tools** tab.
3. Enter an IP address or a domain name.
4. Click **Ping** to check the network connectivity and latency between the device and target hosts.



## Chapter 6. Services

Milesight provides customers with timely and comprehensive technical support services. End-users can contact their local dealer to obtain technical support. Distributors and resellers can contact Milesight directly for technical support.

Technical Support Mailbox: [iot.support@milesight.com](mailto:iot.support@milesight.com)

Online Support Portal: <https://support.milesight-iot.com>

Resource Download Center: <https://www.milesight.com/iot/resources/download-center/>

### **MILESIGHT CHINA**

TEL: +86-592-5085280

FAX: +86-592-5023065

Add: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China