ZenoGate LoRaWAN®
Outdoor Gateway

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Acting as the core hub of a LoRa network, the gateway collects data from various sensor nodes and transmits it to a cloud platform via 4G connectivity or Ethernet. Built with a high-performance processor and an industrial-grade LoRa chipset, it offers reliable and efficient operation in large-scale deployments. Its IP67-rated enclosure ensures durability, making it well-suited for harsh outdoor industrial conditions.

The Zenosmart LoRaWAN® Gateway utilizes the LoRaWAN® protocol and is tailored for low-power, long-range environmental monitoring applications. It is ideal for use in areas such as precision agriculture, urban infrastructure, and facility management.

Applications

- Smart agriculture
- Smart factory
- Smart metering
- Smart building and industrial control
- Environmental monitoring
- Other wireless sensing applications
- Logistics and supply chain management

Gateway Features

- High-performance quadcore processor paired withlarge-capacity memory for industrial-grade operations.
- Powered by the SX1302 chipset, optimized for processing high data volumes with minimal power usage.
- Supports eight configurable channels operating in either half or fullduplex mode.
- Rugged IP66 or IP67rated housing designed for dependable operation in extreme outdoor conditions.
- Flexible installation options support both wall and pole mounting setups.
- Redundant connectivity options include Ethernet, 4G cellular, and WiFi for reliable data transmission.
- Supports secure communications through a variety of VPN protocols, including OpenVPN.
- Centralized remote device management via DeviceHub and the Zenosmart Platform.
- Seamlessly integrates with popular LoRaWAN® network servers such as The Things Stack, ChirpStack, Actility, and AWS.
- Monitors ambient radio noise levels and offers visual insights to guide optimal deployment.
- Features an integrated network server with MQTT(S) and HTTP(S) APIs for straightforward system integration.
- Enables LoRaWAN® data integration into BMS and PLC systems through Modbus protocols.
- Includes an embedded SDK to facilitate userdriven secondary development (up to customer demand).
- Supports 8 simultaneous receive (RX) channels and 1 transmit (TX) channel.

Key Advantages and Application

CortexA8 processor, Linux system – stable and reliable.

Supports LoRaWAN® protocol.

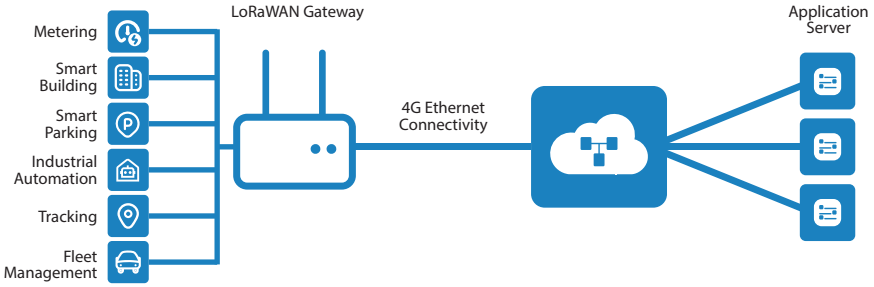
Provides a variety of cloud services and data API interfaces.

Supports multiple ISM bands: CN470, EU868, US915.

4G and Ethernet connectivity, suitable for multiple scenarios.

Ultra-wide distance transmission: up to 15 km in line-of-sight conditions, and up to 2 km in urban environments.

Operating temperature: -40 °C to +70 °C.



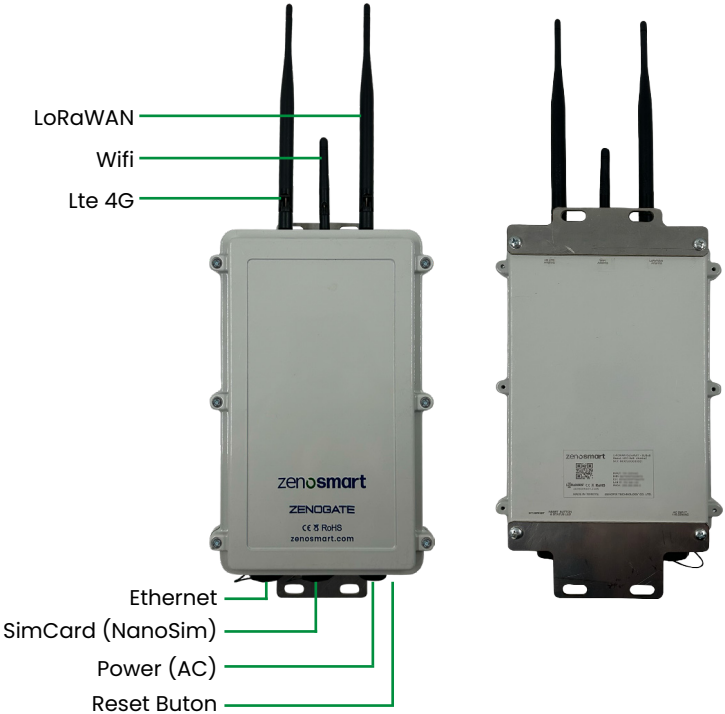
Technical Data

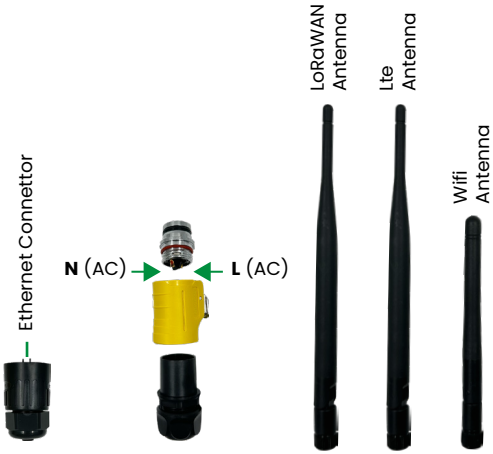
Gateway RF Models	
RF Model	**Region**
LoRa-G-470-E/4G	Asia (China)
LoRa-G-868-E/4G	European, Africa, Asia (India etc.)
LoRa-G-915-E/4G	North America, South America, Oceania,Asia (Japan, Korea, Thailand, etc.)

LoRa RF Parameters			
Channel Plan	470~510 MHz	863~870 MHz	470~510 MHz
Power Output	25 dBm	27 dBm	25 dBm
Sensitivity	140.5 dBm (SF12BW125)	139.5 dBm (SF12BW125)	140.5 dBm (SF12BW125)
Channel	8 (Half/Full-duplex)		
Range	Up to 15 km		

Gateway Model	Model 1
CPU	Quadcore CortexA72 (ARM v8) 64bit SoC @ 1.5 GHz
System	Linux Debian
RAM	DDR3 2 / 4 GB
Memory	16 GB / 32 GB eMMC
Ethernet	1Gbps FE (RJ-45)
WiFi	2.4 GHz IEEE802.11 ac wireless
LTE Bands (Europe/APAC)	B3/B7/B20/GSM900/GSM1800
LTE Bands (AT&T, TMobile)	B2/B4/B12
LTE Bands (Vevrizon)	B4/B13
LTE Speed Category	Cat.1 LTE
LTE Speed	Downlink 10.3 Mb/s, Uplink 5.2 Mb/s

Gateway Model	Model 1
SIM Slot	1 (Mini SIM2FF)
Antenna	1 × LoRa antenna, 1 × 4G antenna x 1x Wifi antenna
Grounding	Reserved 1 screw hole for GND
Power Consumption	Power Max 15w
Power Supply	Power Suply AC 220 V / 0.06 A
IP Rating	IP67
Antenna Connector	2xRP SMA Female 1xSMA Female 1xSMA Female
Connected Device Capacity	Up to 255
UV Resistance	Anti-aging (from rain/sun exposure)
Enclosure Material	Aluminium
Operating Temperature	-40 ℃ to +70 ℃
Operating Humidity	0–100 % RH (noncondensing)
Installation Method	Wall or pole mounting
Device Weight	1500 g


LoRaWAN
Wifi
Lte 4G
zenosmart
ZENOGATE
CE RoHS
zenosmart.com
Ethernet
SimCard (NanoSim)
Power (AC)
Reset Buton


Ethernet Connettor
N (AC)
L (AC)
LoRaWAN Antenna
Lte Antenna
Wifi Antenna

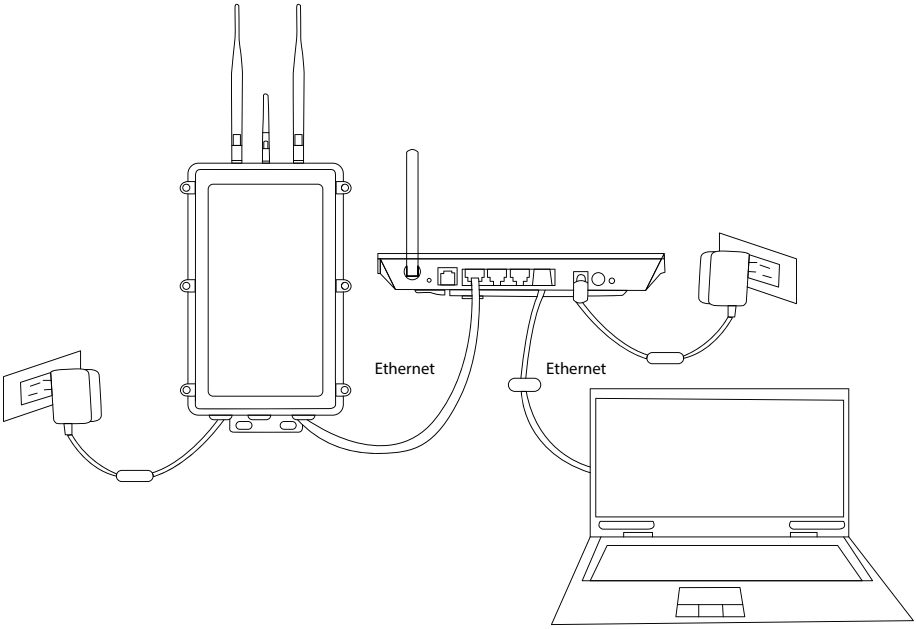
1. Device Connections and Initial Setup

Power on the gateway by attaching the antennas as shown in the images and connecting the AC power supply. If you have connected it to a modem via Ethernet, try accessing the interface by entering zenogate.local in your browser's address bar.

If you cannot access it, follow the steps below:

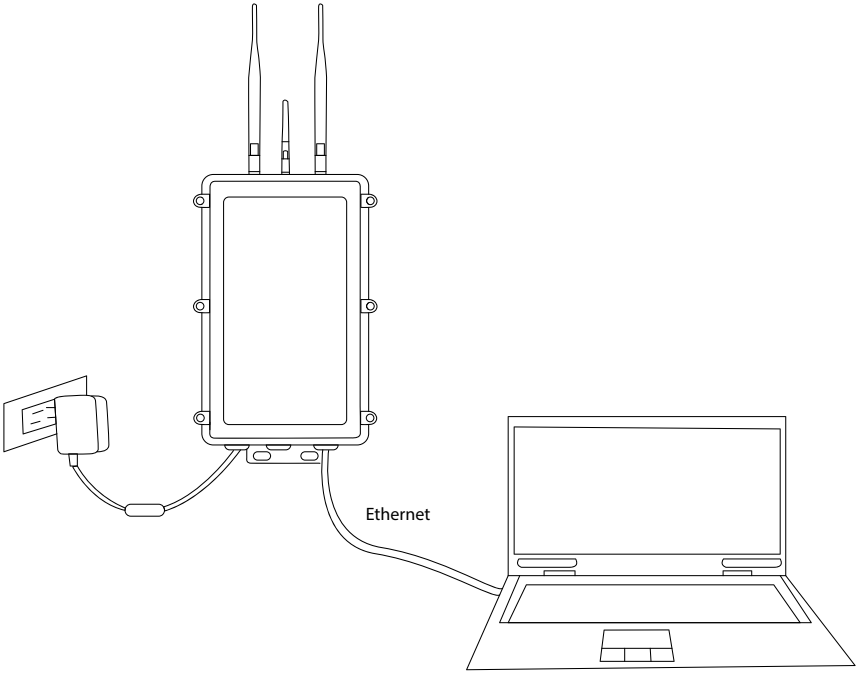
1.1. Finding the IP Address via the Modem Interface

- You can identify the device's IP address using an IP scanner application on your phone or computer.



1.2. If the IP address cannot be found
Press and hold the Gateway's reset button for 10 seconds. When the LED first starts blinking rapidly and then slowly, the device will return to its default IP address.

- IP: 192.168.1.52
- Mask: 255.255.255.0

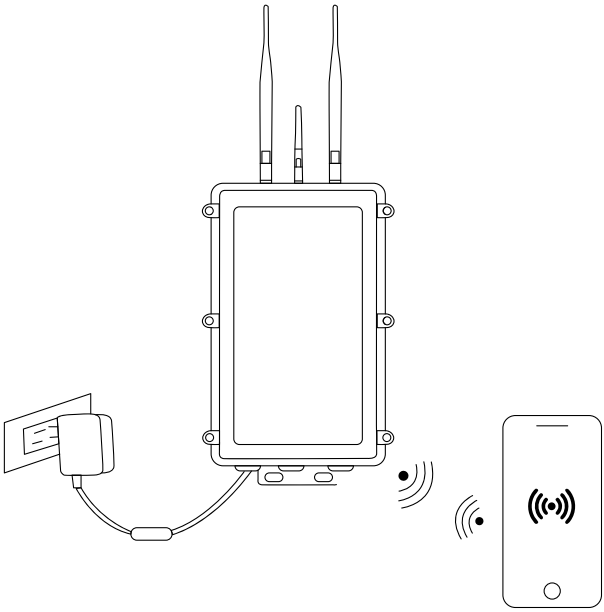


1.3. Quick Access via Mobile Hotspot
When you enable a mobile hotspot on a phone, the device will automatically connect to this network.
Default Wi-Fi Credentials:

- Wi-Fi Name: zenosmart
- Password: zenogate

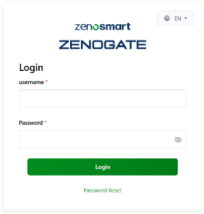
You can view the gateway's IP address using an IP Scanner on your phone and access the interface by entering it into your browser.
Default Login Credentials:

- Username: zenosmart
- Password: zenogate

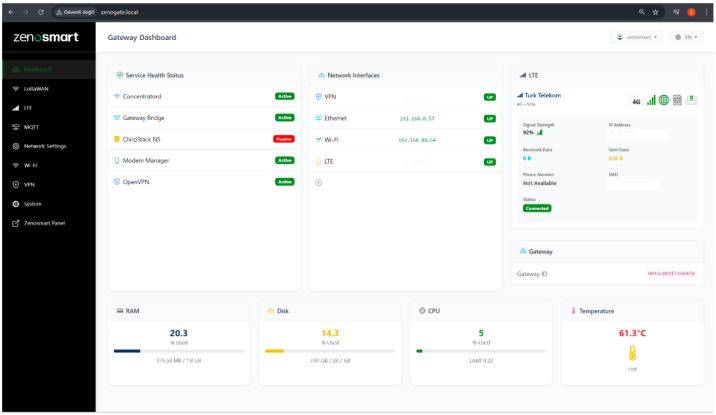


You can access the interface by entering the gateway’s IP address into your browser.
Default Login Credentials:

- Username: zenosmart
- Password: zenogate

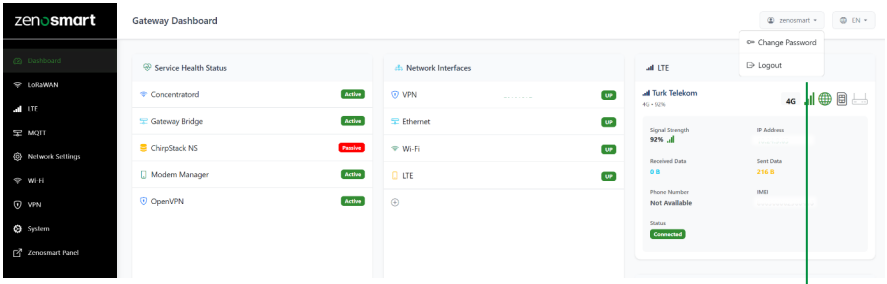


2. Home Page (Dashboard)



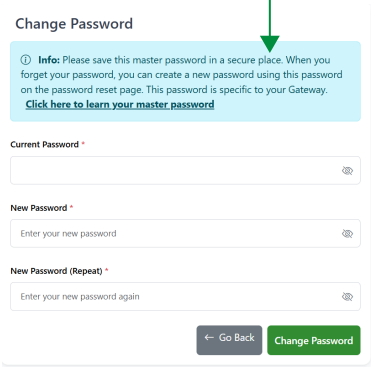
When you log in to the interface, you can view the general status of your device:

- System health status: CPU, RAM, and temperature information
- Network interfaces: Ethernet, LTE, Wi-Fi
- Service status

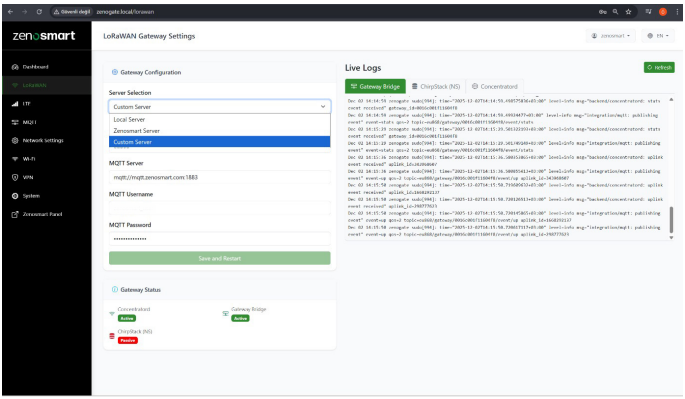


You can also change your user password from this page.

Important: Before changing your password, securely save the device-specific master password provided for your device. This password will be used on the reset screen described in the guide if you forget your username or password.



3. LoRaWAN Settings



In the LoRaWAN section, you can connect to the following server options:

Zenosmart Server

You can use this option to manage the device via panel.zenosmart.com. Through this platform, you can add, view, and manage devices.

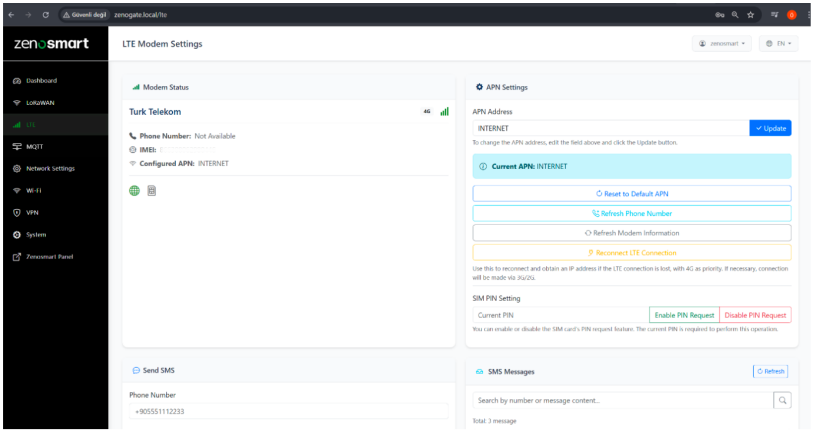
Local Server (Local ChirpStack)

The pre-installed ChirpStack LoRaWAN Network Server within the gateway can be used.

Custom Server

If you wish, you can connect to a custom LoRaWAN server. For more information about using the Zenosmart panel, you can contact the Zenosmart support team.

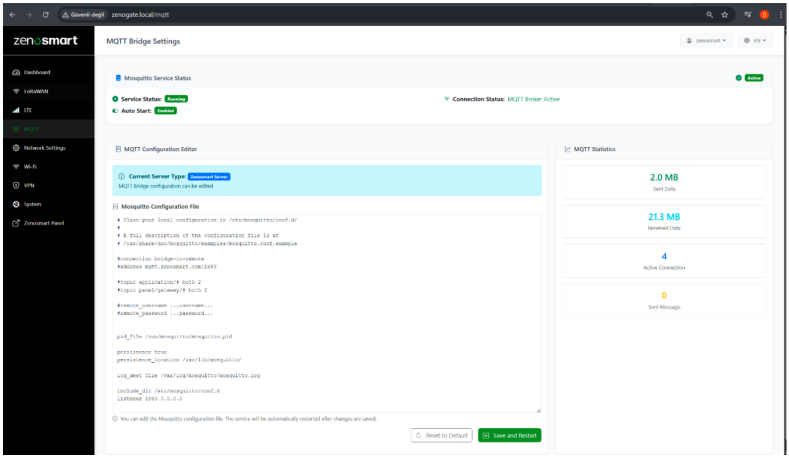
4. LTE (Mobile Operator) Connection



Insert a nano SIM card into the SIM card slot on the gateway. After inserting the SIM card, you can configure the following settings from the LTE management page:

- APN settings
- Mobile data status
- SIM PIN
- Operator information

5. MQTT Bridging (MQTT Bridge)



This section becomes active if Local Server is selected on the LoRaWAN page.

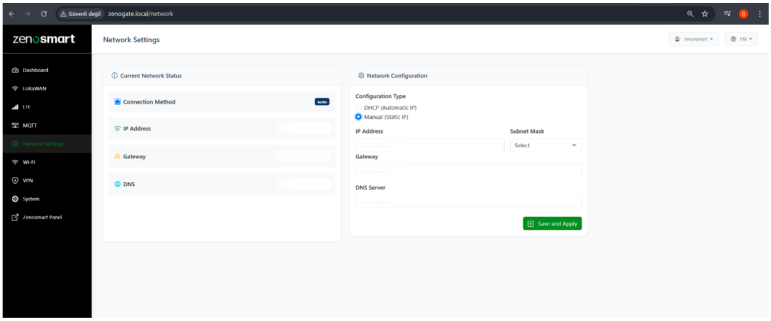
It is possible to bridge LoRa device messages from the MQTT server running on the gateway to another MQTT broker.

For bridging:

•MQTT config file format
•Bridge settings can be configured according to the Mosquitto documentation available online.

This MQTT page is available when Local Server is selected on the LoRaWAN page. Here, you can bridge messages from the LoRa devices on the MQTT server running on the gateway to another MQTT broker. To enable bridging, you can refer to online resources for how to configure the MQTT config file.

6. Network Settings

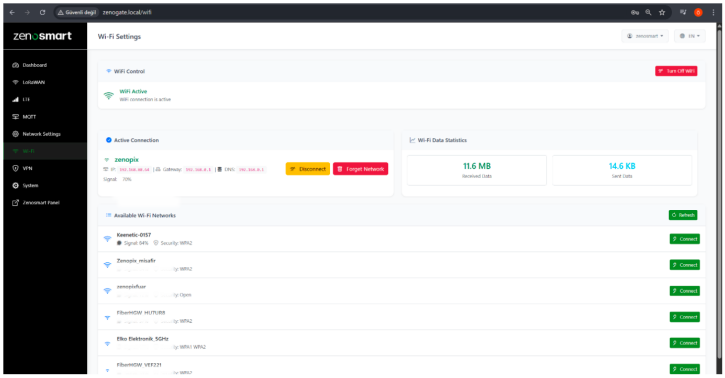


In this section, you can configure the gateway's Ethernet interface.

Default settings:
DHCP Client: Enabled

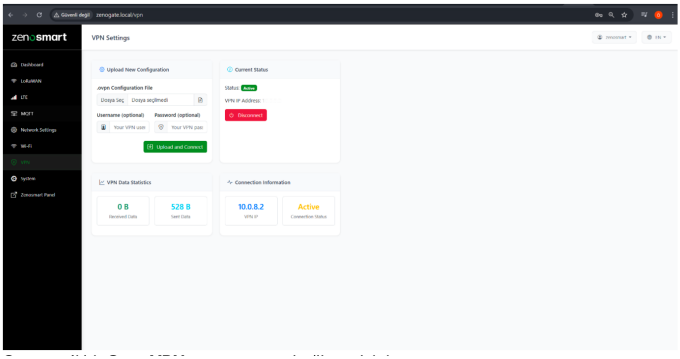
This allows the device to automatically access the internet when connected to any modem. If required, you can also configure a static IP.

7. Wi-Fi Settings



On this page, you can connect the gateway to a Wi-Fi network. Once connected, the device will automatically reconnect to this network on every startup.
Default Wi-Fi Network:
•Wi-Fi Name: zenosmart
Password: zenogate
After connecting to a new Wi-Fi network, do not forget to select "Forget" for the old network.

8. VPN Settings

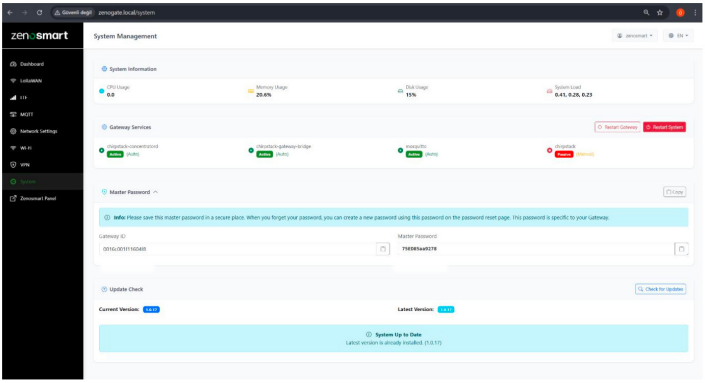


To connect the gateway to an OpenVPN server:

- Upload the .ovpn file
- Username
- Password

Enter the required information. Zenogate will automatically initiate the VPN connection every time it starts up.

9. System Settings



From this section:
• You can update the device firmware,
• Restart the services,
• Restart the gateway.

Also, if the username or password is forgotten, the device-specific master password can be viewed here. Make sure to keep your master password in a secure place.

IP Reset Feature – Instruction Manual

1.About the Feature
The IP Reset feature is used to restore your gateway device's Ethernet IP address to its default values. This feature can be used when the IP address is forgotten, incorrectly configured, or when the device needs to be accessed again via its default IP.

2.Function Operating Principle
2.1. Resetting IP Settings

The system automatically detects the active Ethernet connection (eth0) and restores the IP configuration to its default values. The Ethernet connection is restarted for the settings to take effect.

2.2. Default Network Settings

When the reset process is complete, the device operates with the following IP configuration:

- IP Address: 192.168.1.52/16
- Default Gateway: 192.168.0.1

DNS Server: 192.168.0.1
2.3. Restarting the Connection

After the settings are updated, the connection is temporarily disconnected and then re-established for 2–3 seconds. During this time, there may be a brief interruption in the internet connection.

3. Important Warnings

3.1. Usage Time
Use this feature in the following situations:

- If you do not remember the current IP address
- If you are experiencing issues with network settings
- If you want to access the device via its default IP address
- If you want to reset the Ethernet configuration

3.2. Precautions
- The process cannot be undone; the current IP will be permanently deleted.
- The device may become inaccessible during the reset.
- The device must not be turned off until the process is complete.
- To access the default IP, your computer must be within the same IP range.

Procedure Steps

4.1. Button Press Duration

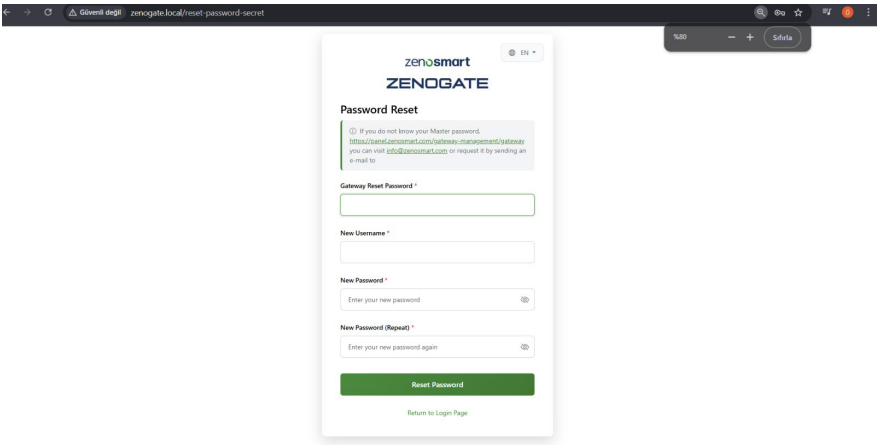
- Press and hold the button for 10 seconds or longer. If released before 10 seconds, the process will be canceled.

4.2. LED Indicators

- During the press-and-hold process: the LED blinks rapidly (preparing).
- If released before 10 seconds: the LED returns to standard mode (canceled).
- If the process is successful: the LED blinks 3 times.
- In case of failure: the LED remains in standard mode.

4.3. Post-Process Connection

- When the process is complete: New IP: 192.168.1.52



If you forget your password, you can reset the username and password of your gateway using its master password. When you first unbox and set up your gateway, you can view this master password through the gateway interface. If you lose your password, you can contact ZenoSmart or, if your gateway is registered on panel.zenosmart.com, you can retrieve it via the website. Please make sure to keep this password secure.

zenosmart | ZENOPIX smart solutions

Zenosmart intelligently enhances energy efficiency and sustainability with innovative, AI-powered, IoT-based solutions, making life easier.

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Çankaya/Ankara/Türkiye