PERCEPT Gateway User Manual

Document Version 1.0

PERCEPT Gateway

User Manual

©2024, IONODES INC
All Rights reserved.

No part of this documentation may be reproduced in any means, electronic or mechanical, for any purpose, except as expressed in the Software License Agreement. IONODES shall not be liable for technical or editorial errors or omissions contained herein. The information in this document is subject to change without notice.

The information in this publication is provided “as is” without warranty of any kind. The entire risk arising out of the use of this information remains with the recipient. In no event shall IONODES be liable for any direct, consequential, incidental, special, punitive, or other damages whatsoever (including without limitation, damages for loss of business profits, business interruption or loss of business information), even if IONODES has been advised of the possibility of such damages and whether in an action or contract or tort, including negligence.

This software and documentation are copyrighted. All other rights, including ownership of the software, are reserved to IONODES Inc. All other brand and product names are trademarks or registered trademarks of the respective owners.

The following words and symbols mark special messages throughout this guide:

Warning: Text set off in this manner indicates that failure to follow directions could result in damage to persons or equipment.

Note: Text set off in this manner indicates special instructions which should be paid attention to.

Table of Contents

1 Important Safety Instructions 5
2 Cleaning instructions 6
3 Handling Notes 6
4 Moisture and Condensation Notes 6
5 Before you begin 7
5.1 About the PERCEPT Gateway 7
5.2 Parts List 8
6 Hardware Installation 9
6.1 Equipment Installation 9
6.2 Air vent locations 10
7 Connections 11
7.1 Front panel 11
7.2 Back panel 12
8 Powering the PERCEPT Gateway for the first time 14
9 PERCEPT Cloud Enrollment Information 17
10 Device Configuration 20
10.1 Network Configuration Basics 20
10.2 Setting Up Initial Network Configuration Locally 21
10.3 Setting Up Initial Network Configuration Remotely 25
10.4 Setting up Time 29
10.5 Setting up Security Policy 29
10.6 Configuring GPS Coordinates 30
10.7 Configuring Cellular Data 31
10.8 Configuring Miscellaneous Network Services 34
10.8.1 HTTP Configuration 34
10.8.2 Discovery 34

10.8.3 RTSP Configuration 35
10.8.4 Multicast 35
12 Security 36
13 Performing a Firmware Update 38
13.1 Batch Firmware Update 39
14 Safe Mode 41
15 Troubleshooting 43
15.1 Common issues & resolutions 43
15.2 Contact IONODES Support 43
Annex A – Statement Limited Warranty 44

1 Important Safety Instructions

Warning: Read and save these instructions. Follow all warnings and instructions specified within this document and/or on the equipment.

Warning: The unit will power on upon connecting a valid power supply source. Please make sure to properly shutdown the device's operating system prior to removing its power source.

The equipment should be installed by qualified personnel only (person having the appropriate technical training and experience necessary for product installation).

When installing the equipment, please make sure that cables are installed so that no accidents can occur. Cables connected to the equipment must not be subject to mechanical strain. Air vents shall not be obstructed.

To reduce the risk of fire, electric shock and/or injury, observe the following:

- Do not position the equipment as such that persons could walk on the cables.
- Do not spill any type of liquid substance on or near the equipment.
- Do not touch the equipment and its connected cables during an electrical storm; there may be a risk of electric shock.
- Do not attempt to connect this equipment to electrical outlets controlled by switches or automatic timers.
- Do not attempt to perform hardware service on this product yourself. Opening the equipment casing may expose you to dangerous voltage or other risks. Refer servicing to IONODES technical service personnel. Never open the device yourself as this will void the warranty.
- The equipment should be situated away from heat sources such as radiators, heat registers, stoves, or other products that produce heat.
- Do not place a heavy object on or step on the product.

Note: Opening the equipment case, damaging, or altering the tamper proof label will void the warranty.

2 Cleaning instructions

- Unplug this product from the wall outlet before cleaning.
- Use a soft dry cloth for cleaning.
- For stubborn dirt, soak the cloth in a weak detergent solution, wring well and wipe. Use a dry cloth to wipe it dry. Do not use any type of solvent, as it may damage the surface of the product.

3 Handling Notes

When shipping the product, the original shipping carton and packing materials should be used. For maximum protection, repack the unit as it was originally packed at our factory.

Do not use volatile liquids, such as insect spray, near the unit. Do not leave rubber or plastic products in contact with the product for long periods of time. They will leave marks on the surface finish.

4 Moisture and Condensation Notes

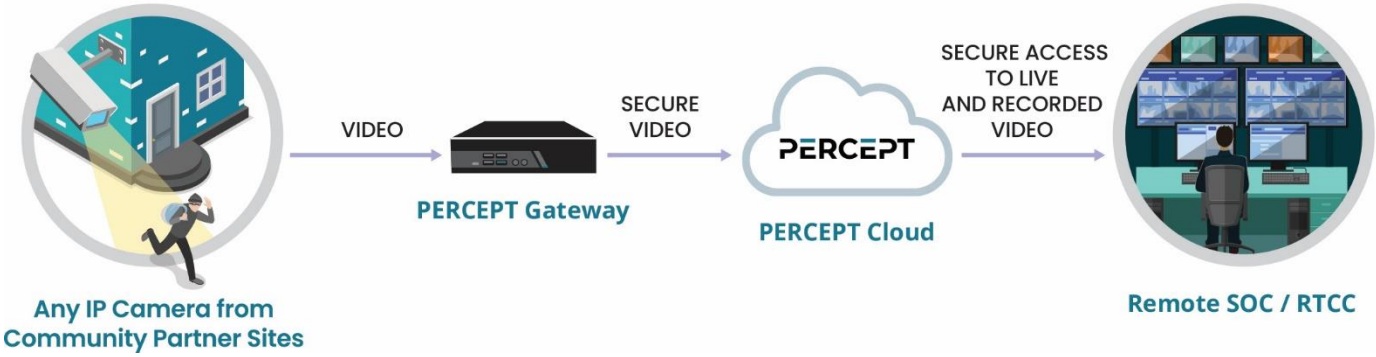
Moisture condensation can damage the product. Read the following notes carefully. Moisture condensation occurs during the following cases:

- Transferring the product directly from a cold place to a warm place.
- Using the product in a room where you just turned on the heater, or a place where the cold wind from an air conditioning unit directly hits the unit.
- Using the product in a humid place.

Warning: Do not use the product when moisture or condensation may occur. If the product is used in such an environment, it may damage discs and internal parts.

5 Before you begin

5.1 About the PERCEPT Gateway



When combined with PERCEPT Cloud, the PERCEPT Gateway provides instant access to live and recorded video from any connected camera, from any remote site. The solution brings together disparate video surveillance systems to provide secure, comprehensive video monitoring and response capabilities—from a single pane of glass.

The PERCEPT Gateway is a small onsite edge appliance that seamlessly connects to local IP cameras in a few short steps, without an onsite IT specialist. A secure and encrypted gateway for live video, the PERCEPT Gateway keeps local recording of all connected cameras for a configurable time.

Secure remote access to PERCEPT Gateways is provided by PERCEPT Cloud, a cloud-based device and video management platform that provides centralized management for any number of remote site gateways and cameras. PERCEPT Cloud offers device management and instant access to live and recorded video stored on every gateway through a simple, powerful web-based interface. No video is stored in the cloud.

The solution includes native support through a Genetec™ Security Center VMS plugin that allows your Genetec systems to securely connect to PERCEPT Cloud to access on-demand, live or recorded video from any camera, from any enrolled PERCEPT Gateway. This native integration allows for centralized live and recorded video monitoring by any remote personnel trained on Genetec™ software.

5.2 Parts List

Qty	Description
1x	IONODES PERCEPT Gateway appliance (GW08 or GW32 model)
1x	Quick Install Sheet
1x	Cellular modem USB dongle with pre-installed and pre-activated SIM card
1x	90-degree angle USB adapter for cellular modem USB dongle
1x	Wi-Fi antenna
1x	20V DC power adapter (150W)
1x	VESA / Wall mounting bracket and screws

Below are additional items which are not included but may be required for your installation:

- Internet access, router and/or a network switch
- Power bar with surge protection
- USB mouse & keyboard
- Monitor with Display Port input

Note: When unpacking, inspect the shipment box and appliance to identify any possible damages from shipping. Make sure all items have been delivered and that no item is missing. Contact your IONODES representative should you find any damages or defects.

Note: The product serial number label helps the IONODES product support team identify your device and its factory configuration if your PERCEPT Gateway or its components require service. It also includes unique ID required to enrol the device in PERCEPT Cloud. The label is attached on the underside of the enclosure and on the box.

6 Hardware Installation

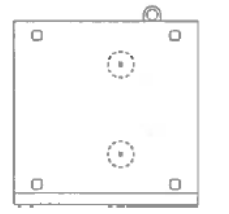
6.1 Equipment Installation

The PERCEPT Gateway can be placed on a flat surface, such as a desktop, or mounted via the supplied mounting bracket. When installing the PERCEPT Gateway, position the unit to allow for cable clearance at the rear of the unit. Make sure that air vents are not obstructed.

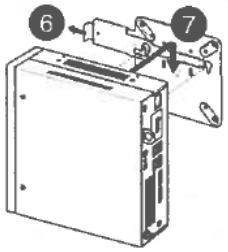
The PERCEPT Gateway can be mounted to various mounting structures via the supplied VESA mounting assembly. VESA mounting screws are shipped with the device.

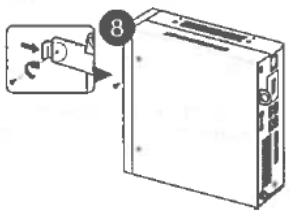
To install your PERCEPT Gateway to a mounting surface:

1. Place your PERCEPT Gateway upside down on a flat and stable surface.
2. Attach the two (2) bundled 12mm screws into the screw holes at the bottom of you PERCEPT Gateway.
3. Remove the screw hole covers at the back of your VESA mount-compatible device, if any.
4. With the arrow on the VESA mounting plate pointing upward, align its screw holes to the screw holes of the desired mounting surface or VESA mount-compatible device.
5. Secure the VESA mounting plate to the desired mounting surface or VESA mount-compatible device using bundled screws.
6. Pull the metal lock on the VESA mounting plate outwards.
7. Position the PERCEPT Gateway and insert the screws attached on the PERCEPT Gateway to the mounting holes on the VESA mounting plate, then gently push the PERCEPT Gateway down to secure it in place.
8. Push the metal lock back towards the PERCEPT Gateway then secure it using a screw.



Bottom view of PERCEPT Gateway





Warning: Do not overtighten the screws as it may cause damage to your PERCEPT Gateway or VESA mount-compatible device.

6.2 Air vent locations

For proper cooling of the device, air vents shall not be obstructed. There's a total of six (6) air vents located on the PERCEPT Gateway, highlighted in the illustration below.

7 Connections

The PERCEPT Gateway offers several connections ports at the front and back.

7.1 Front panel

1. **USB 3.2 Gen2x2 Type-C**

   Not required for typical deployments.

2. **2x USB 3.2 Gen1 Type-A**

   Not required for typical deployments.

3. **2x USB 2.0**

   Can be used with USB keyboard & mouse for configuration via local interface.

4. **Mic in and Audio / Headset jack**

   Not required for typical deployments.

5. **Power ON / OFF**

   Button used to boot up or shut down the device. The button includes a LED indicating when the appliance is powered on.

7.2 Back panel

1. **Wi-Fi Antenna**

   The antenna needs to be installed prior to first use.

2. **DC-in Power**

   Appliance power connector. Connect to the provided 20V DV power adapter.

3. **2x DisplayPort 1.4**

   Not required for typical deployments. May be used in combination with USB keyboard & mouse for configuration via local interface.

4. **1x USB 2.0**

   Not required for typical deployments.

5. 1x USB 3.2 Gen2 Type-A

   Connect LTE modem dongle in this USB port via the provided USB 90° angle adapter (as shown in picture above).

6. 1x USB 2.0

   Not required for typical deployments.

7. 10/100/1000/2500 Mbps, 2.5G LAN

   Connect this network port to your Camera LAN, the LAN on which your IP cameras are located.

8. 10/100/1000 Mbps, 1G LAN

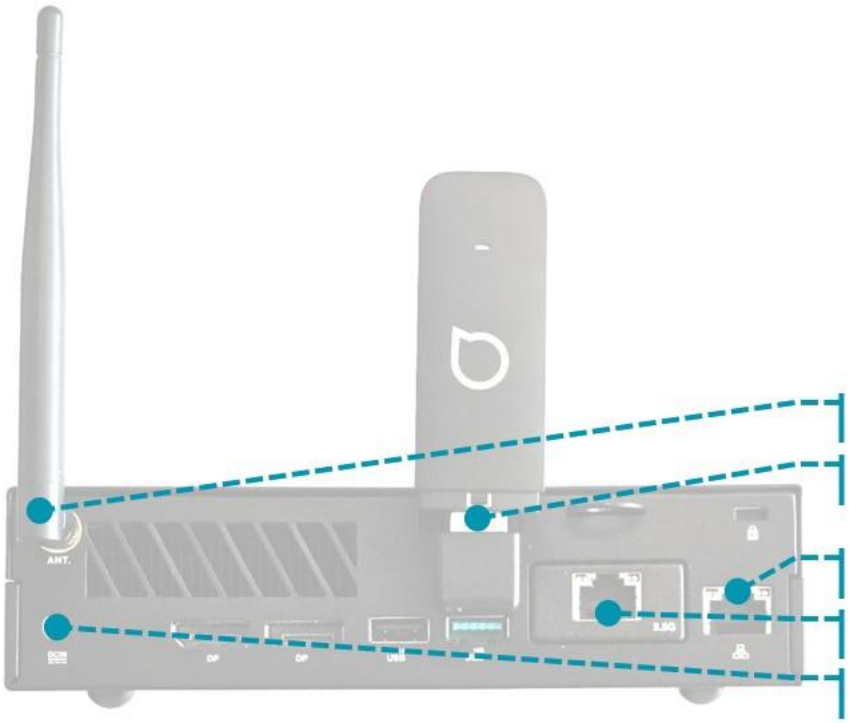
   Connect this network port to your WAN (internet). This is not required if your Camera LAN provides internet access.

9. Kensington Lock

   Use to physically secure the device to any compatible locking system.

8 Powering the PERCEPT Gateway for the first time

Before you can use the PERCEPT Gateway, you need to connect the following:



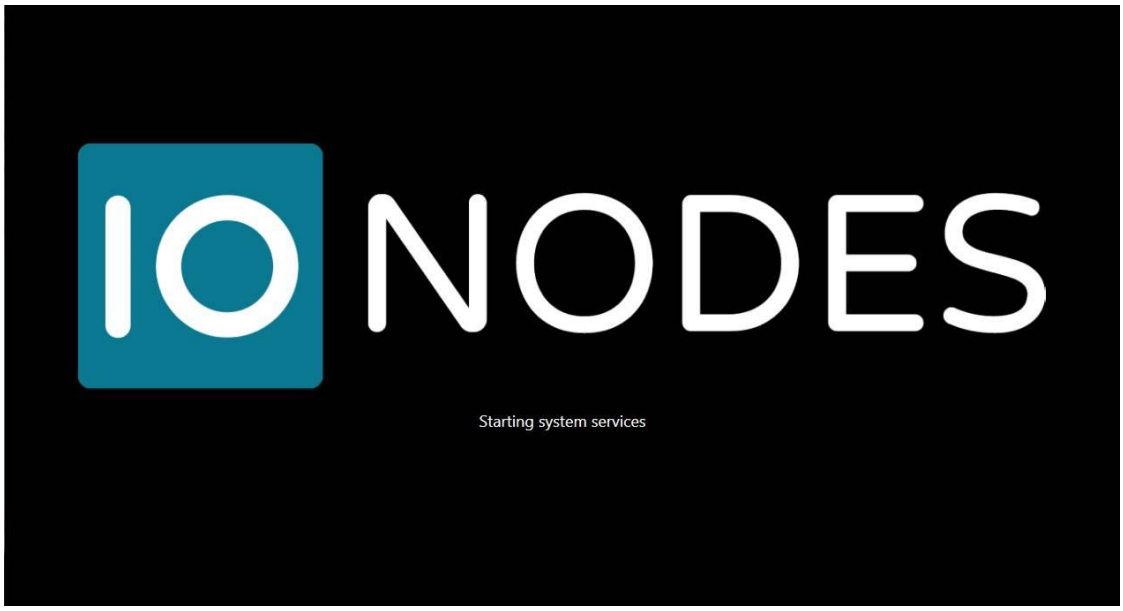
1. Wi-Fi Antenna
2. Cellular modem with 90° USB adapter
3. Wired Internet (WAN)
(optional if camera LAN has internet access)
4. Camera LAN
5. AC/DC Power adapter to DC power input

Note: Connecting a keyboard, mouse and monitor to the PERCEPT Gateway allows you to configure its internet connectivity locally. This is not recommended other than for advanced troubleshooting.

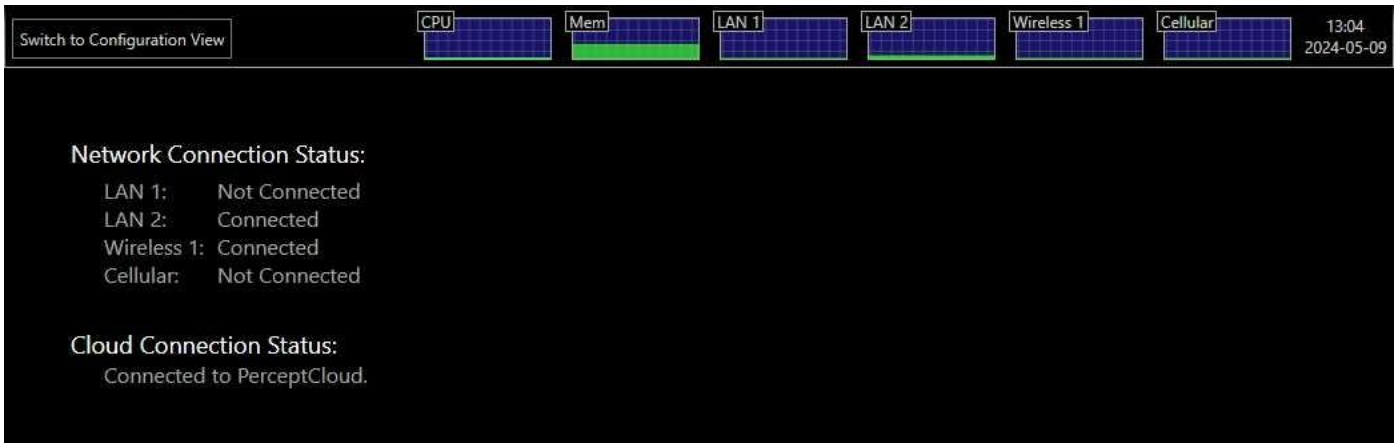
Note: The only layout supported for a directly attached USB keyboard is US QWERTY. This is due to the closed nature of the embedded Operating System, which prevents any changes to its default configuration.

On first power on, once all the required cabling is connected, the appliance will boot automatically. If the appliance was previously shut down using the power button, to turn it back on, you'll need to press the power button. Once the PERCEPT Gateway is powered up and connected to the internet, configuration should be performed using your PERCEPT Cloud account. The subsequent sections describe advanced configurations that most users will not require.

If a display monitor is connected, the image below will appear after a few moments.



When all services are running, the display switches to the status information page. In the example below, LAN2 is connected, Wi-Fi settings are configured, and the device has joined a PERCEPT Cloud organization.



The PERCEPT Gateway's status page shows the following information.

- Switch to Configuration / Gateway View

  This button allows you to switch between the configuration interface and the status information page.

- Performance Graphs

  These graphs show the device's recent resource usage.

  - CPU: shows the main processor's activity
  - Mem: shows the system's RAM utilization
  - LAN 1: shows the traffic on the LAN 1 Ethernet interface
  - LAN 2: shows the traffic on the LAN 2 Ethernet interface
  - Wireless 1: shows the traffic on the Wireless interface
  - Cellular: shows the traffic on the LTE Cellular interface

- Network Connection Status

  Each network interface will show one of the following statuses:

  - Connected: Interface is enabled and connected, with or without internet access.
  - Not Connected: Interface is enabled but there is no cable connected or no valid wireless connection setting.
  - Disabled: Interface is disabled in the PERCEPT Gateway configuration. By default, all network interfaces are enabled.

- Cloud Connection Status

  Cloud Connection will show one of the following statuses:

  - Disabled: PERCEPT Cloud connectivity is disabled in the PERCEPT Gateway configuration.
  - Connecting/Connection lost: The PERCEPT Gateway is attempting to connect to PERCEPT Cloud.
  - Connected: The PERCEPT Gateway is connected to PERCEPT Cloud.

9 PERCEPT Cloud Enrollment Information

The PERCEPT Gateway is designed to integrate with PERCEPT Cloud for management and to share video streams with remote systems. Each PERCEPT Gateway has unique identifier information that allows it to join a specific PERCEPT Cloud organization.

The information required to join a PERCEPT Gateway to PERCEPT Cloud consists of its MAC address and PIN. It is available in human-readable and QR code formats in several locations detailed below.

Product label

A product label can be found on the box and on the underside of the PERCEPT Gateway device. A sample is shown hereby.

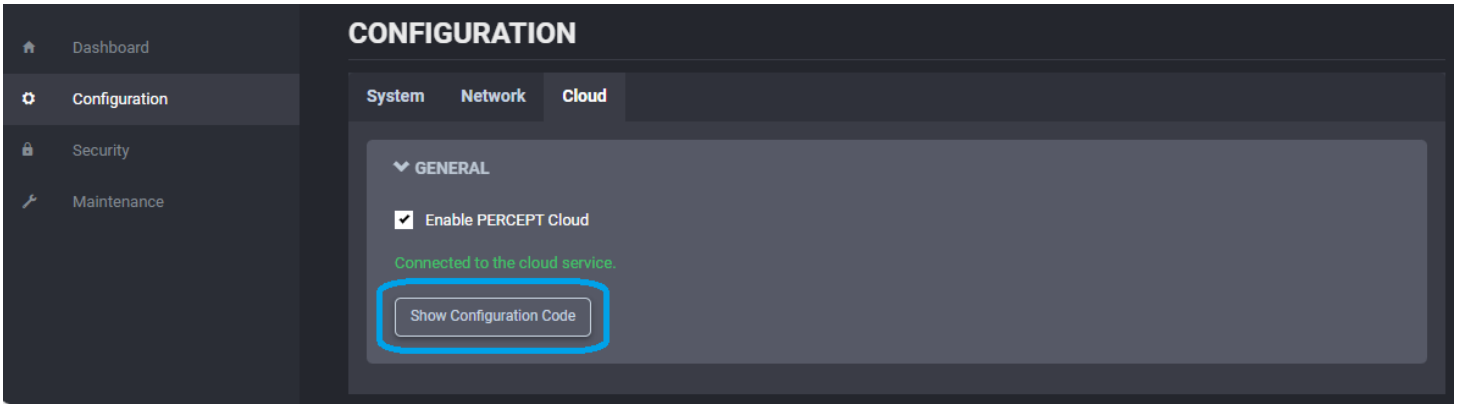
The MAC and PIN are printed on the product label. That same information, in QR code format, is also printed on the label.

Display output

When a monitor is connected to the PERCEPT Gateway, the enrollment QR code will appear on the display if the PERCEPT Gateway can connect with PERCEPT Cloud, but no organization has claimed it.

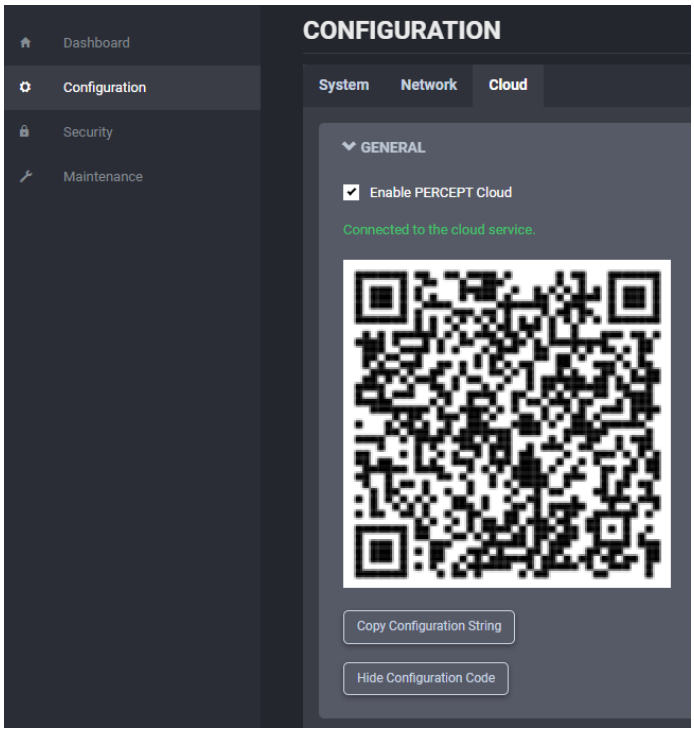
Configuration interface

The device's configuration interface is accessible via the *Switch to Configuration View* button when a monitor, USB keyboard and UB mouse are connected, or with a web browser from a network computer. From that interface, navigate to the *Configuration* page, *Cloud* tab, and click on *Show Configuration Code*.



The MAC and PIN can be copied to the clipboard by clicking on the *Copy Configuration String* button. From the clipboard, it can be pasted in the PERCEPT Cloud device enrollment dialog. This is convenient if the PERCEPT Gateway interface and PERCEPT Cloud are accessed from the same computer.

The QR code is also available from the configuration interface.



10 Device Configuration

Before the PERCEPT Gateway can be used on your video network, it must undergo an initial setup step during which its network configuration is determined. This initial configuration setup is required for the PERCEPT Gateway to communicate with cameras on the network.

Although not recommended, the initial network configuration can be performed directly on the device by connecting a keyboard and a mouse, or it can be performed remotely from a computer or laptop connected to the same network. The recommended approach is to configure the PERCEPT Gateway from PERCEPT Cloud.

10.1 Network Configuration Basics

By default, all network interfaces of the PERCEPT Gateway are configured in DHCP mode (Dynamic Host Configuration Protocol). In DHCP mode, when the device connects to a network, it scans that network for a DHCP server. If a DHCP server responds, the device requests that the DHCP server provide a unique network address and associated settings. The device then uses the DHCP-provided network configuration to communicate with computers and cameras on the network.

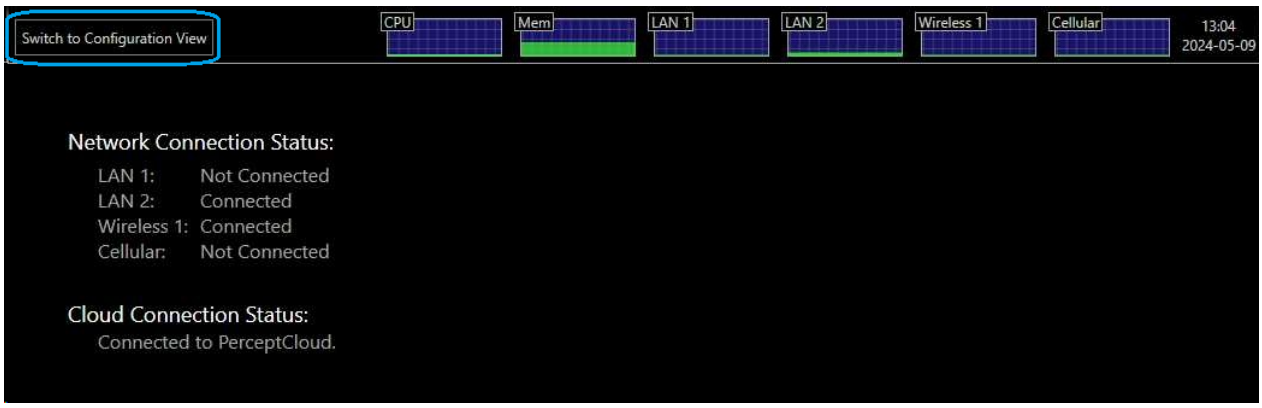
If no DHCP server responds, the device switches to APIPA mode (Automatic Private IP Addressing). In this mode, the device automatically assigns itself a unique network address in the range 169.254.0.1 to 169.254.255.254 with subnet mask 255.255.0.0. APIPA mode ensures that devices in the APIPA network address range can communicate with one another.

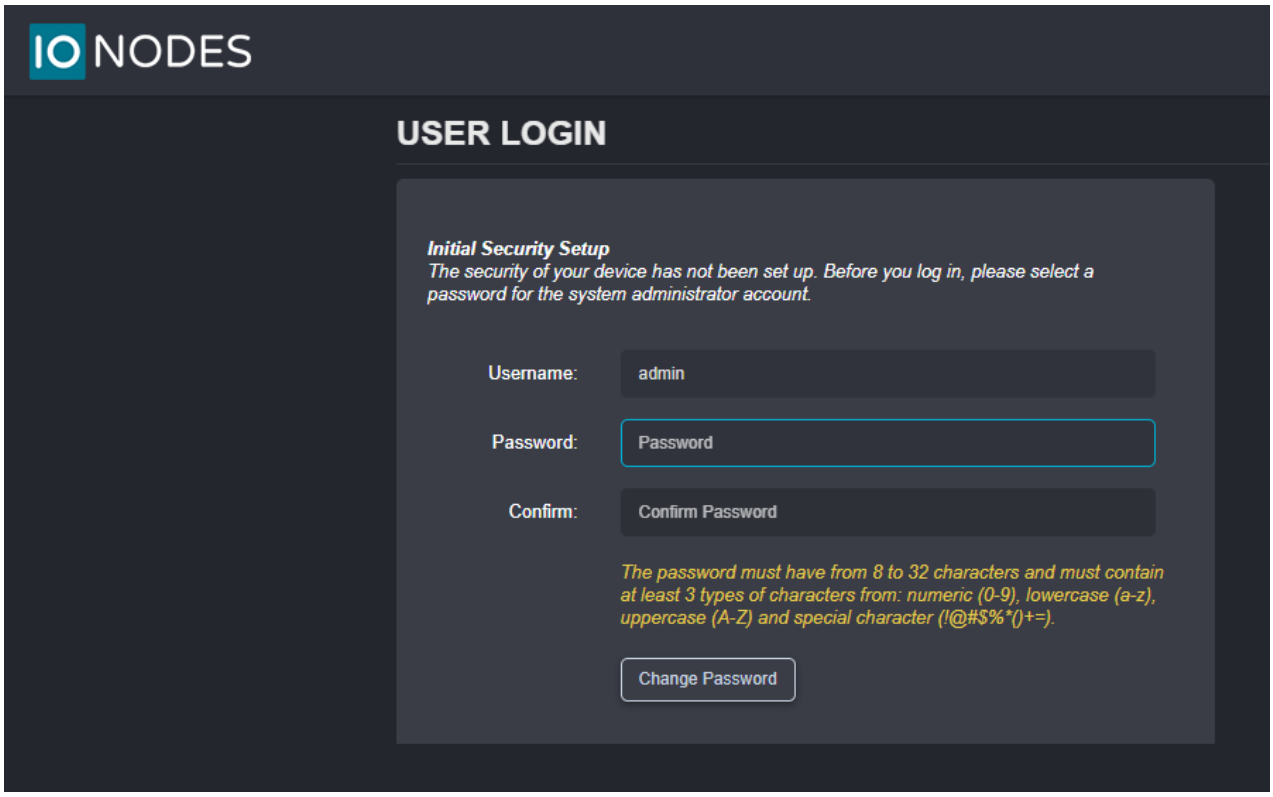
If computers and cameras on your network are not configured in APIPA mode, the PERCEPT Gateway will not be able to communicate with them while in APIPA mode. In such a case, the network configuration of the device must be set manually.

When the network configuration is set manually, the PERCEPT Gateway skips the steps above and takes the user-provided configuration. It is then the responsibility of the user to ensure that the network configuration in the PERCEPT Gateway is compatible with the cameras on the network.

10.2 Setting Up Initial Network Configuration Locally

The configuration interface of the PERCEPT Gateway can be accessed on the device itself, by clicking on the *Switch to Configuration View* button (using a connected USB keyboard & mouse).

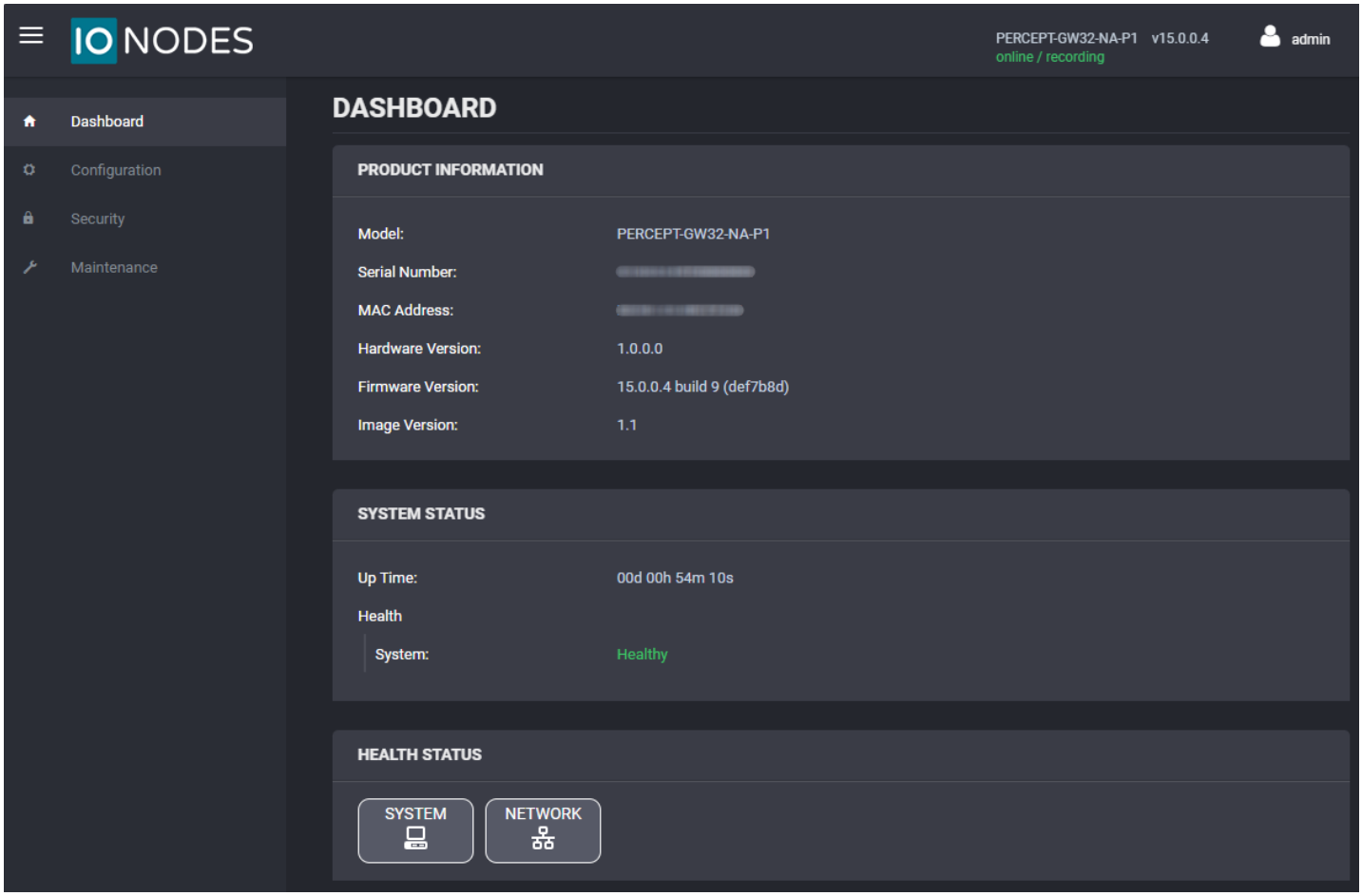




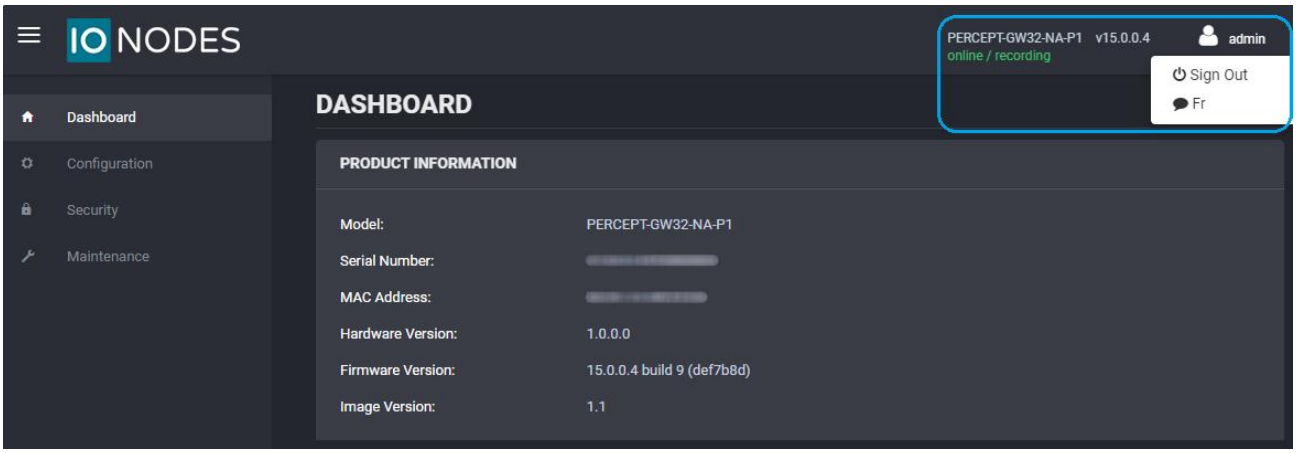
Upon first login, the user is prompted to select a password for the administrator account. The password must have from 8 to 32 characters and must contain at least 3 different types of characters from the following

accepted types: numeric (0-9), lowercase (a-z), uppercase (A-Z) and special character (!@#$%*()+=). Please note that the same screen will also be displayed when doing the initial setup remotely, over the LAN.

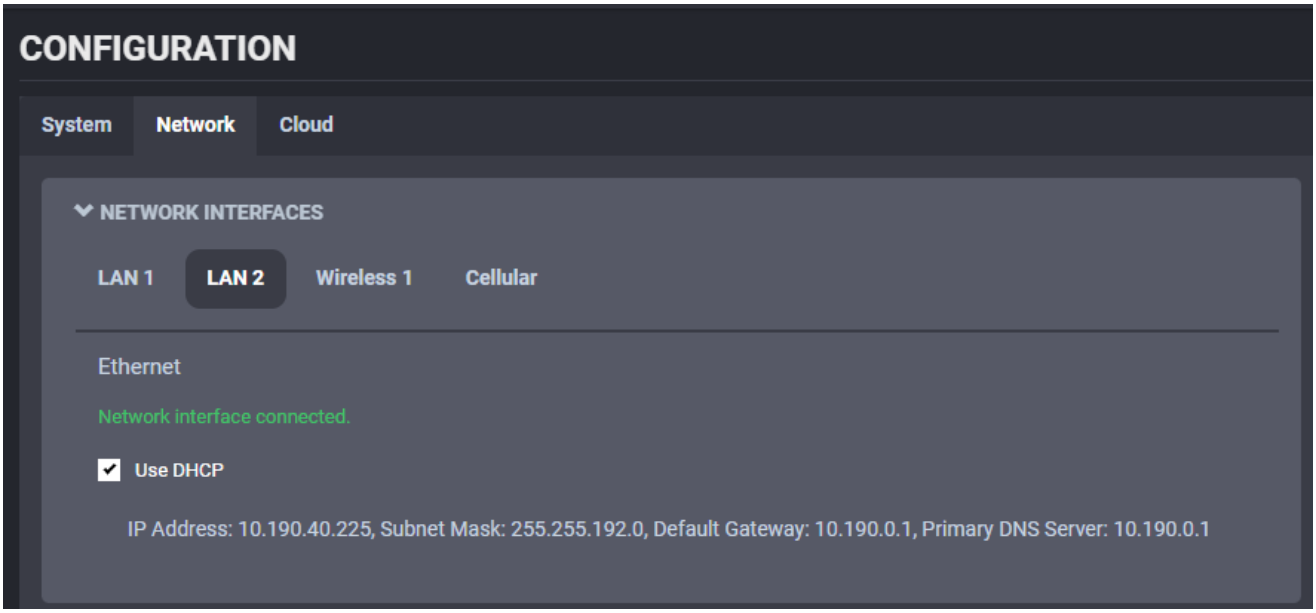
The following *Dashboard* screen will then display:



You may now also select to change your web interface language from English to French if you so choose by clicking on the user icon and selecting *Fr*.



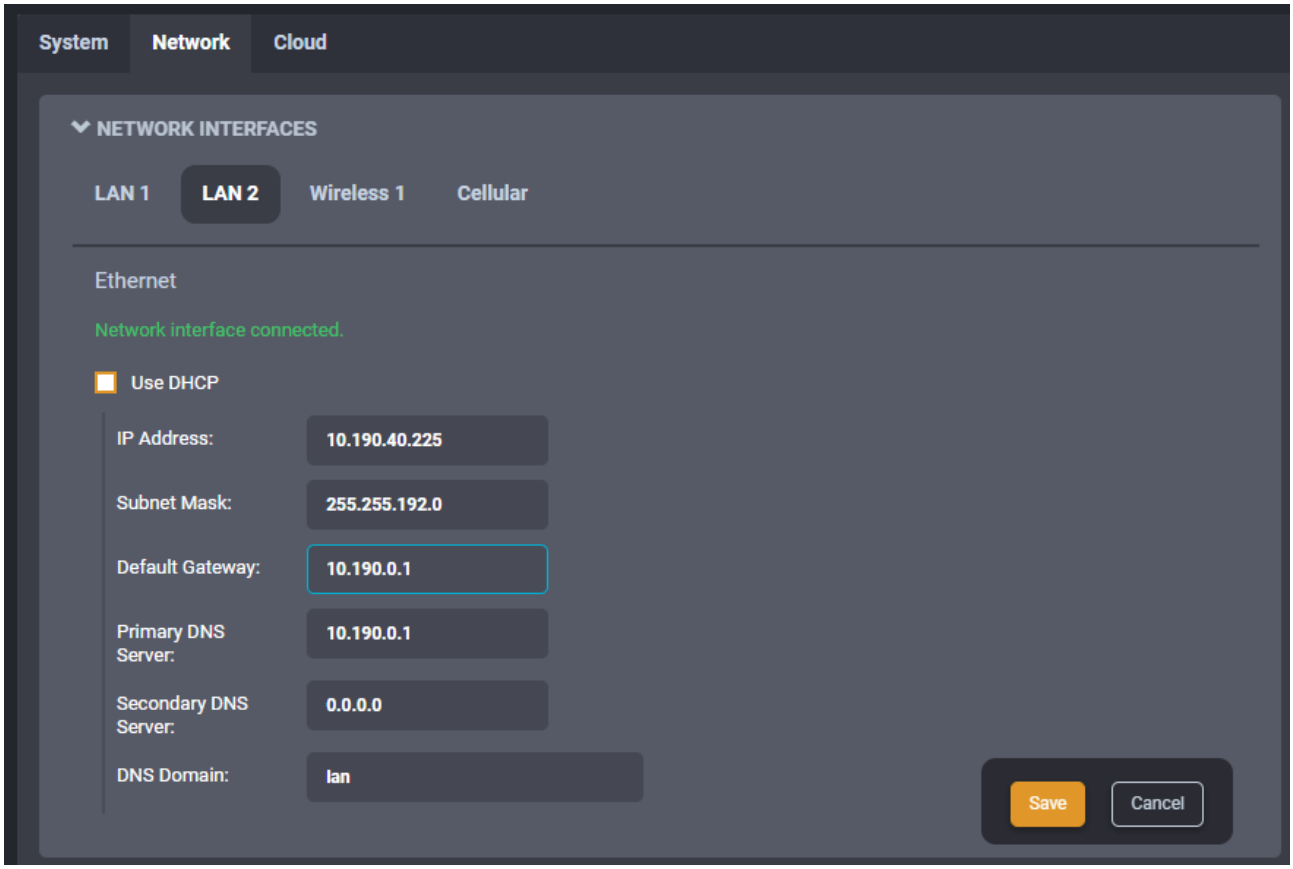
In the left pane, select ***Configuration***. The configuration interface will then be displayed on the right side. Select the ***Network*** tab to display the network configuration.



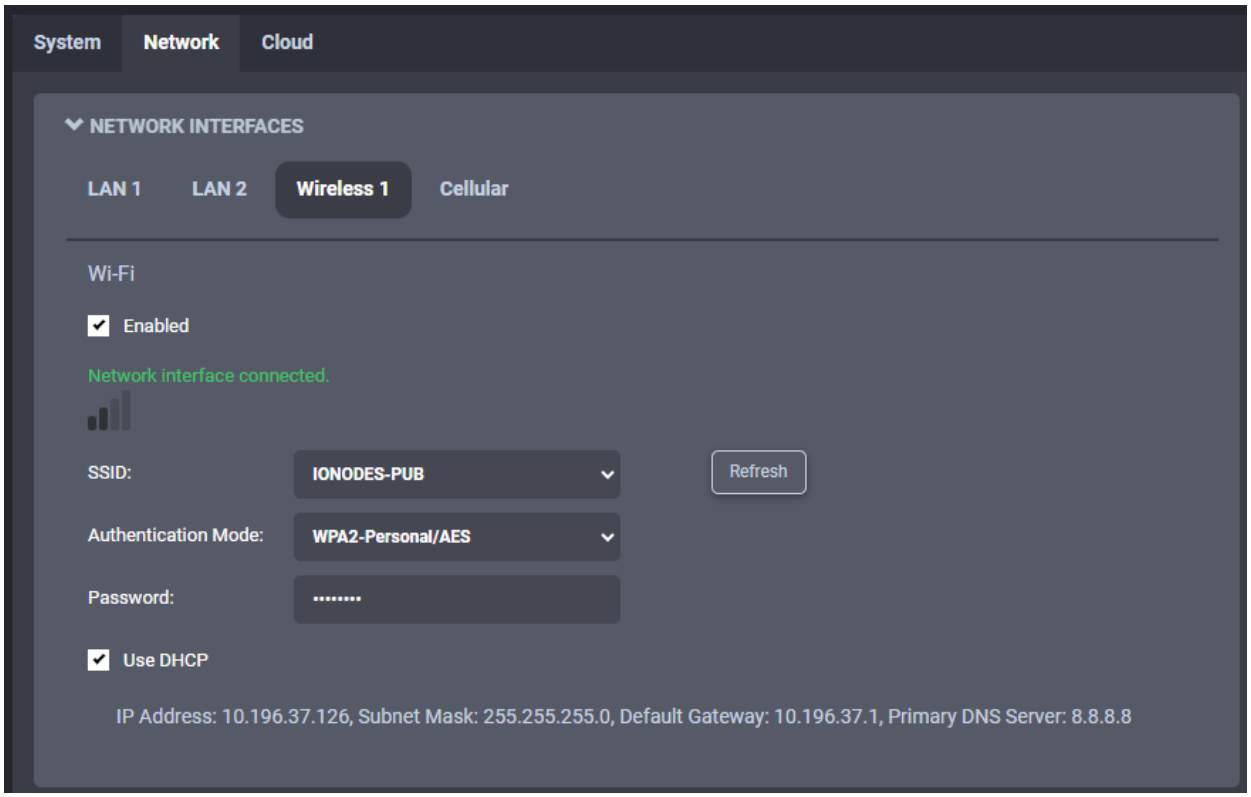
Ethernet network configuration is shown in sections ***LAN 1*** and ***LAN 2***. The first information displayed is the connection status of the Ethernet cable. By default, the PERCEPT Gateway is configured in DHCP mode. If a DHCP server is present on the network, the network configuration provided by the DHCP server is displayed. In that case, nothing needs to be done; the device is ready to communicate with other devices on your network.

If the IP address shown is in the range 169.254.*.*, this means that the device could not obtain its network configuration from a DHCP server. In that case, the network configuration must likely be set manually.

To set the network configuration manually, uncheck ***Use DHCP***. You can then enter static network settings. If you are unsure what values to enter, ask your network administrator to provide configuration settings compatible with your network. At a minimum, a valid ***IP address*** and ***Subnet mask*** must be entered. Once this is done, click on ***Save*** at the bottom to apply the configuration changes.



The PERCEPT Gateway is also equipped with a Wireless network adapter. In addition to the DHCP / Static IP selection and settings, the ***Wireless 1*** interface requires the network's ***SSID***, ***Authentication Mode*** and ***Password***. Unlike the LAN interfaces, the ***Wireless 1*** interface can be disabled.



The **Cellular** interface has no configurable parameter. The SIM card and network settings are automatically detected, and the cellular network enables itself when all other interfaces fail to access PERCEPT Cloud.

10.3 Setting Up Initial Network Configuration Remotely

Initial device network configuration can also be done via the ION Configuration Tool (ICT), a tool provided by IONODES which can be found on the IONODES web site at www.ionodes.com.

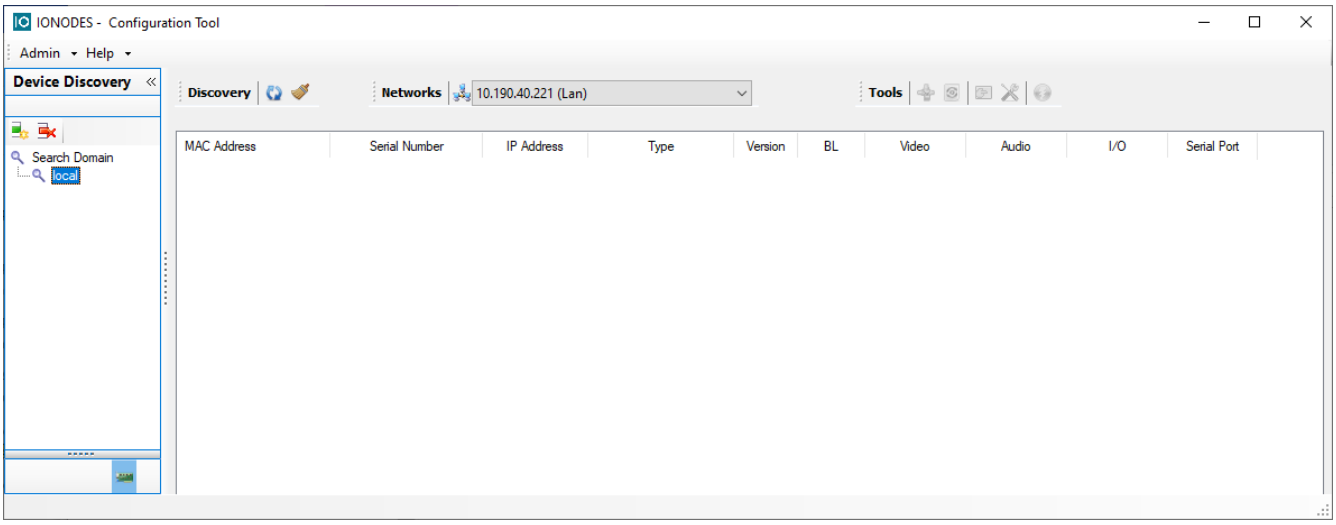
The ICT plays several roles:

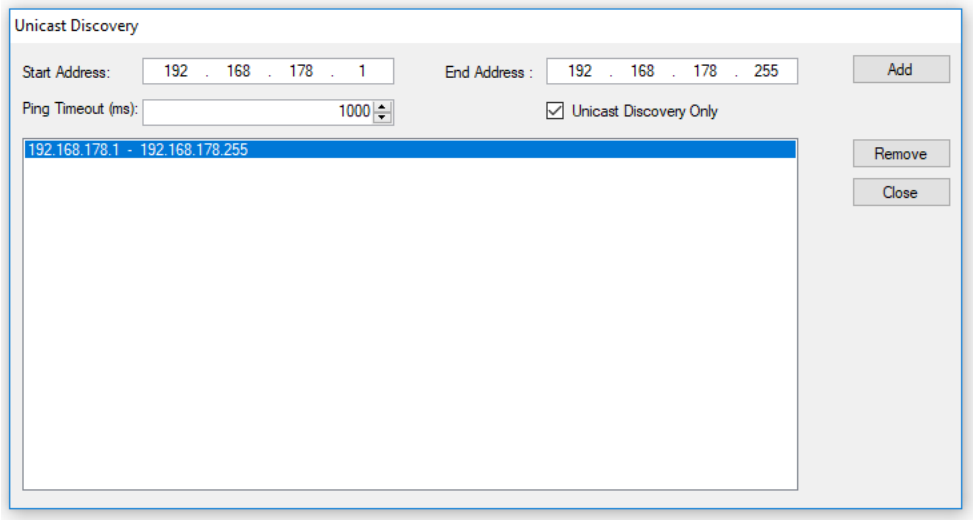
1. Discovery of all PERCEPT Gateway and other IONODES devices on the network
2. Remote configuration of the IP address and subnet mask
3. Applying batch firmware upgrade of all common IONODES devices
4. Accessing a device's web-based management interface

Once your device is installed on your network and powered up, launch the ICT from any computer located on the same network as the device.

The ICT supports two methods for discovering a device on the network. The first method doesn't require any configuration and uses the Bonjour discovery protocol. To be able to discover a device via Bonjour, the network must support multicast.

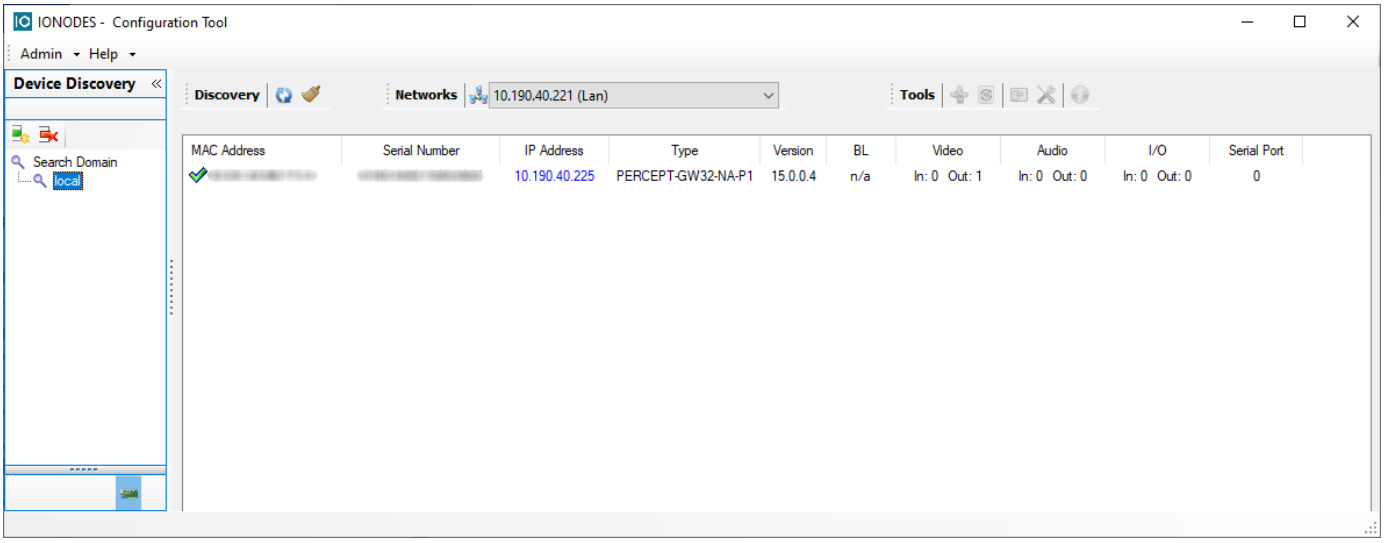
If multicast is not supported, you can use the second method: Unicast Discovery. Unicast Discovery can be configured by using the ***Unicast Discovery*** menu option under the Admin menu list.





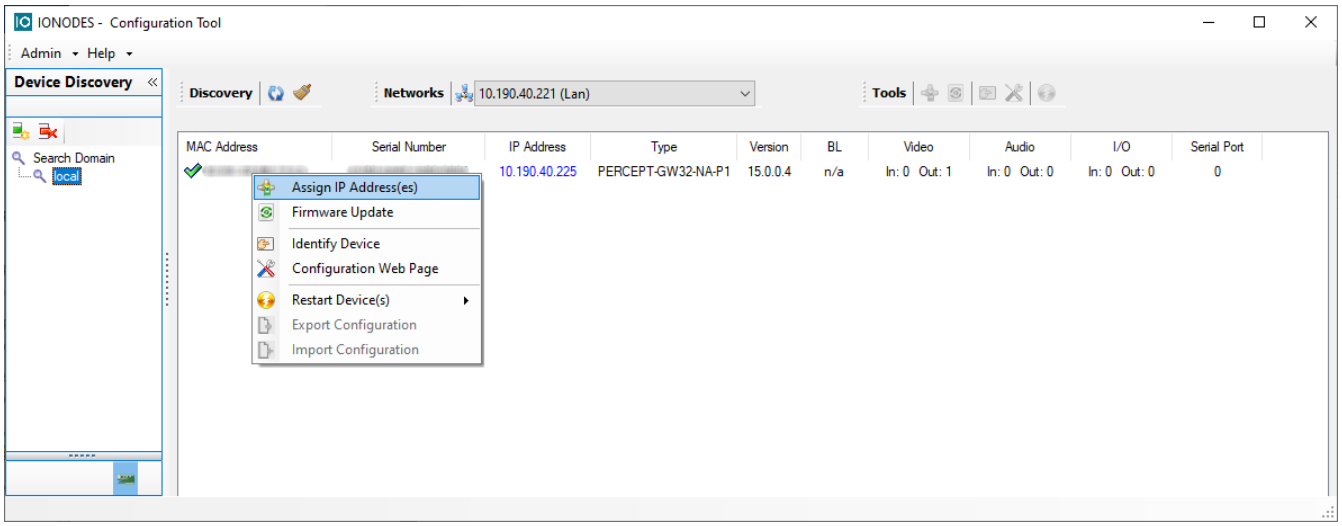
To configure Unicast Discovery, add one or more IP address ranges. Unicast Discovery will attempt to reach a device at a specific IP address in the configured ranges. Discovery can be a long process if the range of IP addresses is large. To accelerate the discovery, add several small ranges of IP addresses.

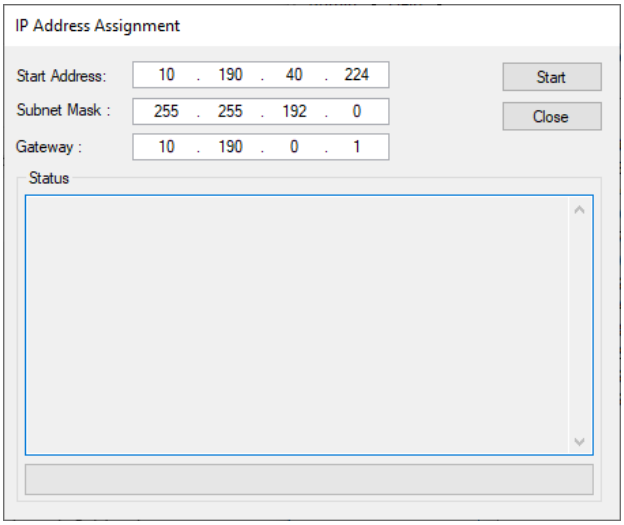
The ping timeout option can be increased on high-latency networks. The ICT will display as many devices as it discovers on the network. On a computer equipped with multiple network adapters, use the ***Networks*** drop-down menu in the top-center portion of the window to select on which adapter to perform the scan.



The ICT displays the current IP address of each detected device. If the device is configured in DHCP mode, its IP address appears in blue.

If a PERCEPT Gateway did not receive an IP address from a DHCP server, it will appear in the ICT device list with an APIPA address (169.254.*.*). Right-click on the device's MAC address and select ***Assign IP address*** from the context menu to apply the desired TCP/IP settings to the device.

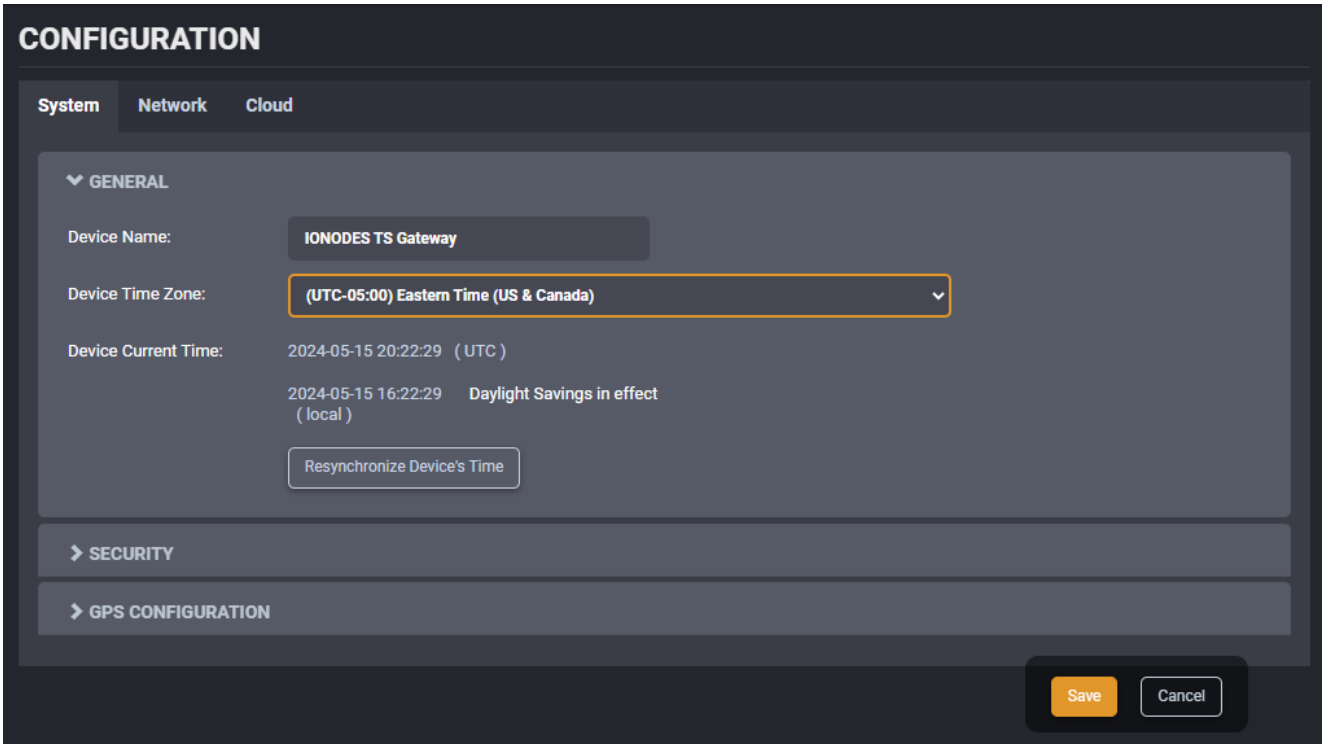




Once the network settings are set, the web-based configuration interface of the PERCEPT Gateway can be launched from the ICT or directly in your web browser by typing the device's IP address in the address bar.

10.4 Setting up Time

In the *Configuration* page, select the *System* tab and expand the first section, *General*.

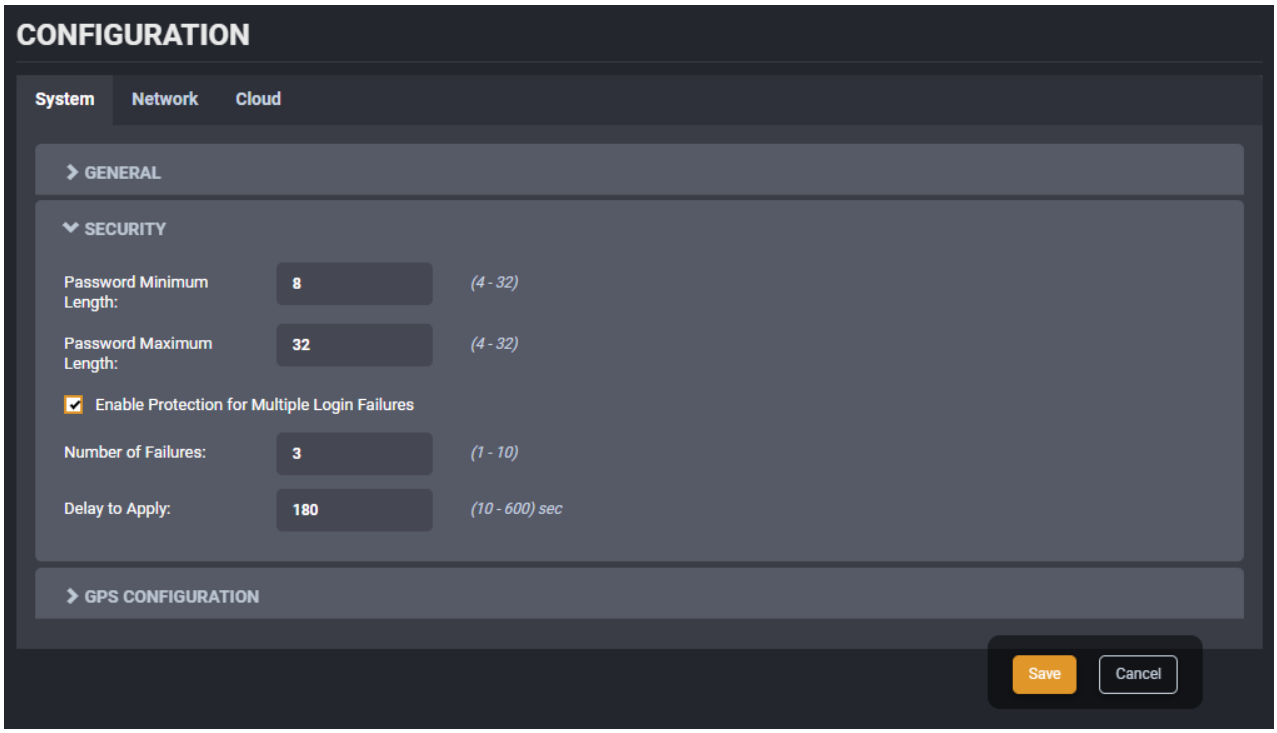


To set the time zone in the device, select the appropriate value from the list in *Device Time Zone* and then click on *Resynchronize Device's Time*. Click the *Save* button to apply the changes.

10.5 Setting up Security Policy

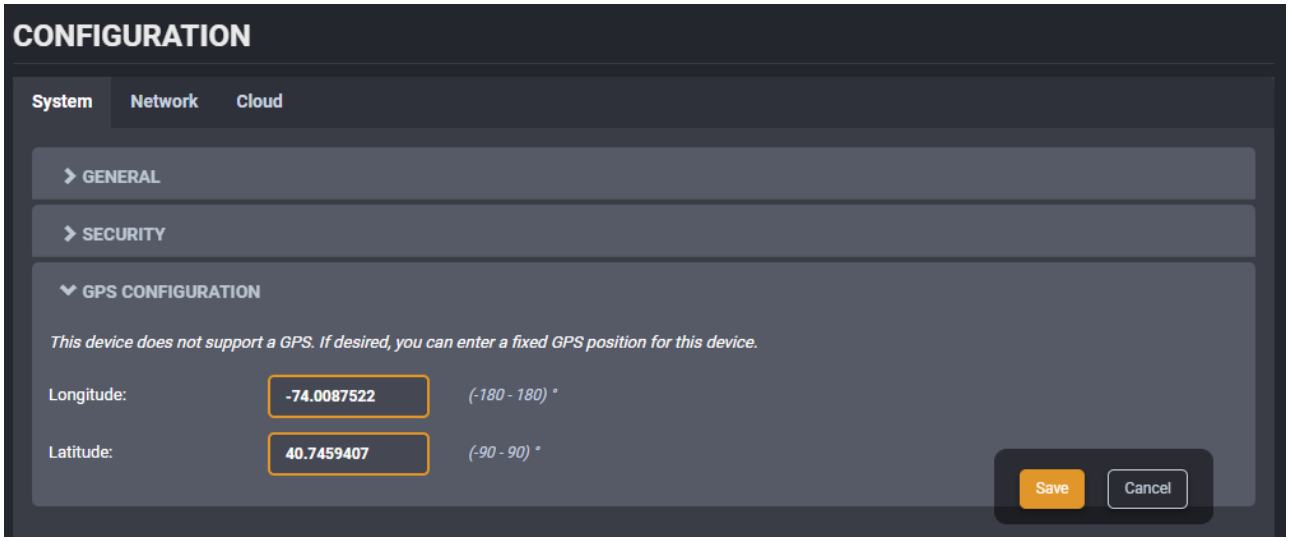
In the *Configuration* page, select the *System* tab and go down to the section *Security*.

Here the user can define the minimum & maximum length of the password for all user accounts. By checking the *Enable Protection for Multiple Login Failures* box, the device is instructed to block all login attempts after *X* failed ones, until the timeout of *Y* seconds runs out (*X* and *Y* are user-configurable).



10.6 Configuring GPS Coordinates

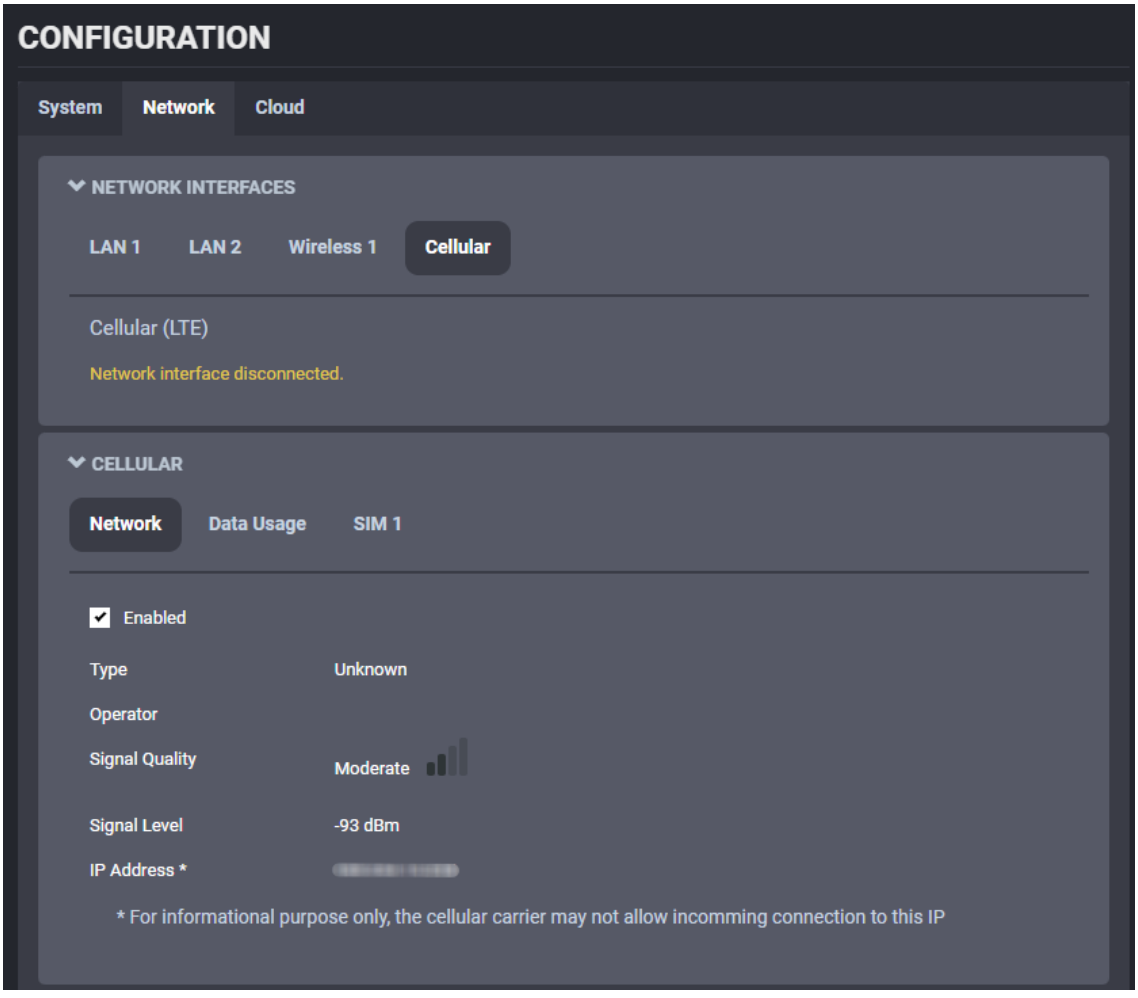
The PERCEPT Gateway can share its location with PERCEPT Cloud, allowing it to display devices and cameras on a map. Location is manually entered. In the *Configuration* page, select the *System* tab and go down to the section *GPS Configuration*. Enter the device's *Longitude* and *Latitude*.



10.7 Configuring Cellular Data

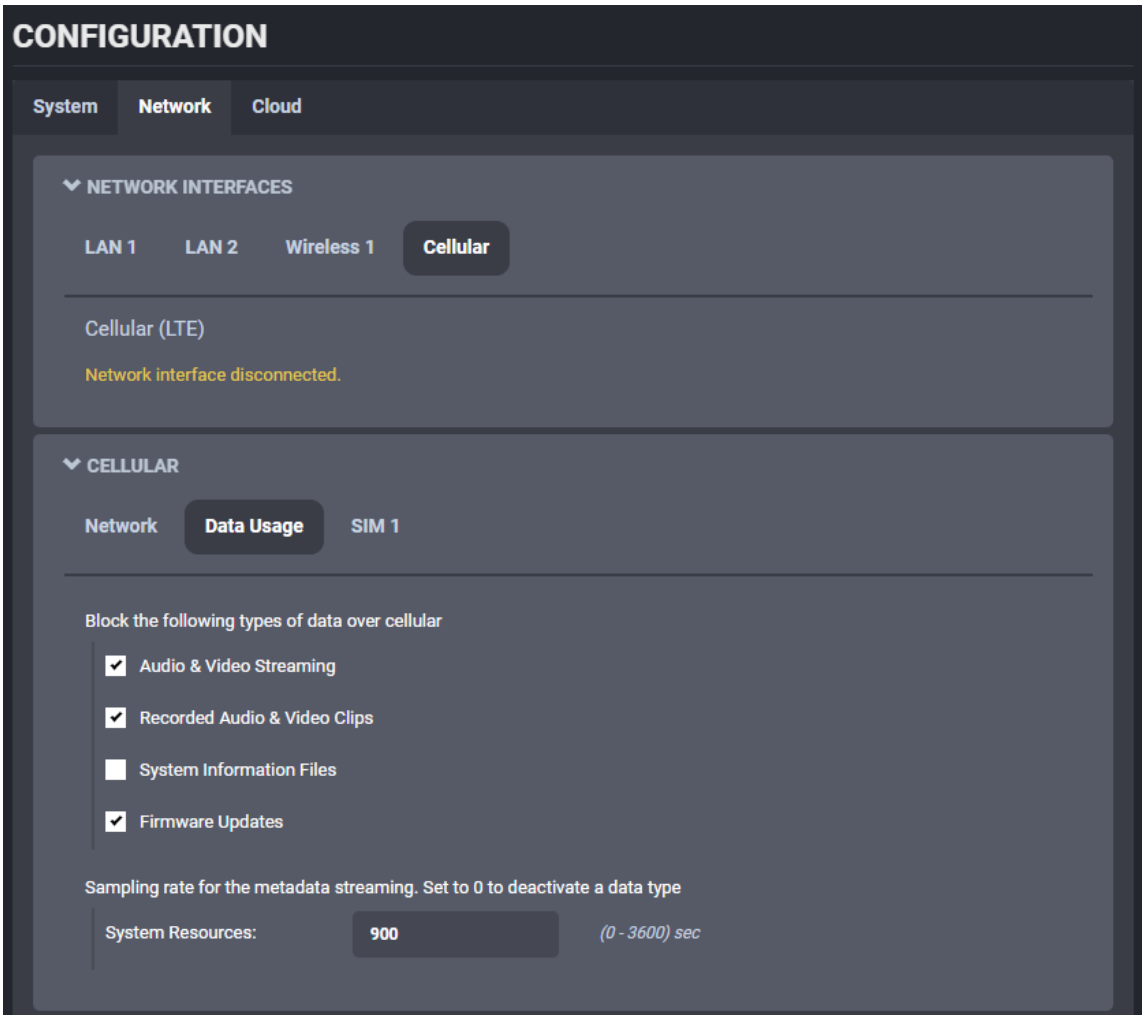
In the *Configuration* page, select the *Network* tab and go down to the section *Cellular*. The following subtabs provide access to cellular configuration.

- Network - The connection can be disabled if needed. Various health checkpoints are displayed to monitor the quality and status of the cellular link, including its associated IP address.



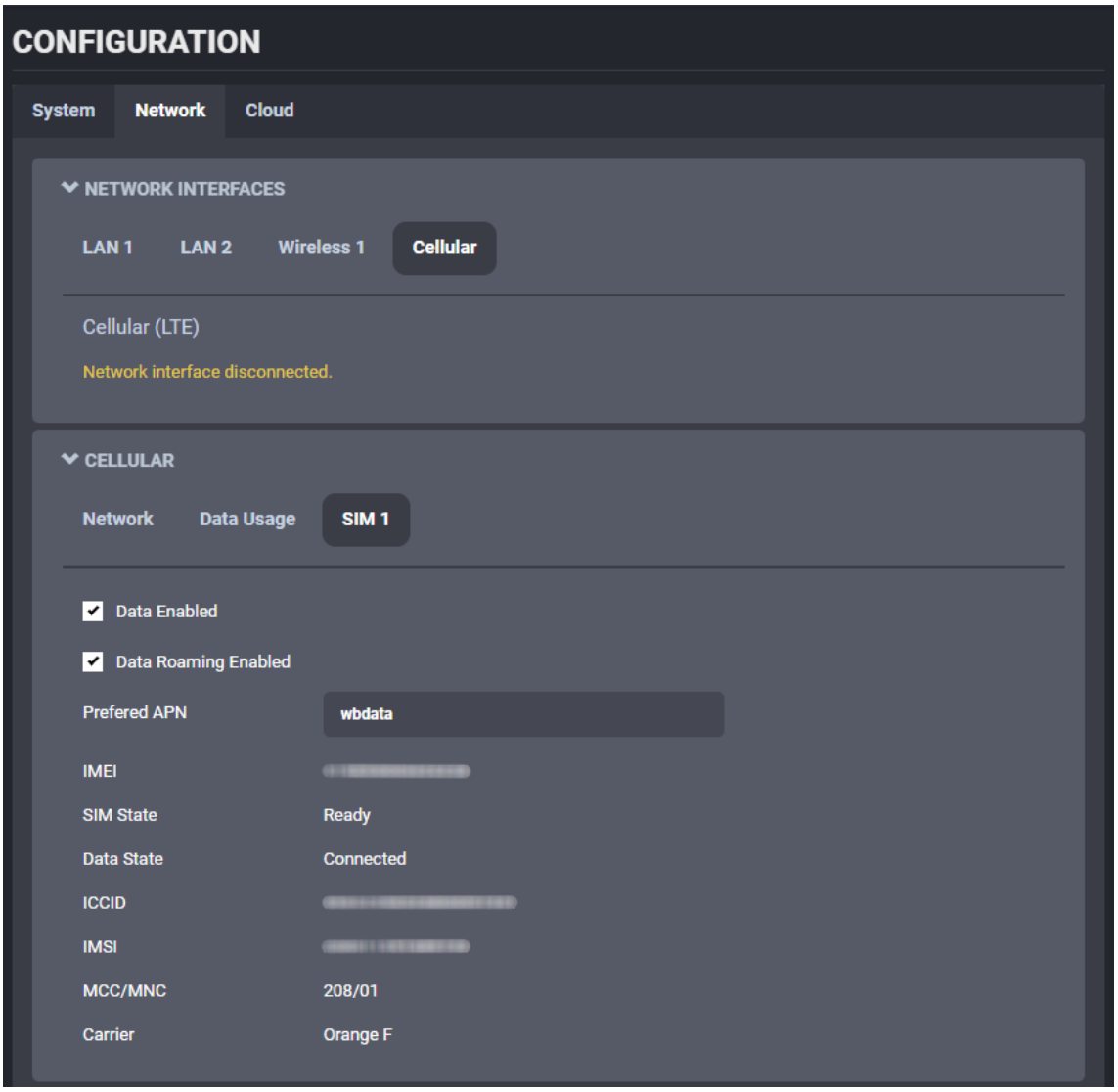
- Data Usage - Configure the type of data that is allowed over the cellular network, such as live audio & video, recorded clips, system information files or firmware updates. Note that checkboxes indicate

blocked data types. For metadata streaming (GPS or system health / resources usage) the frequency of the updates is also user configurable.



- SIM 1 – Provides information on the SIM card installed in your PERCEPT Gateway. You can enable or disable mobile data if needed, as well as add or select the APN provided by your network operator if

using your own SIM card. Different status points such as SIM presence and Data connectivity are provided for monitoring.

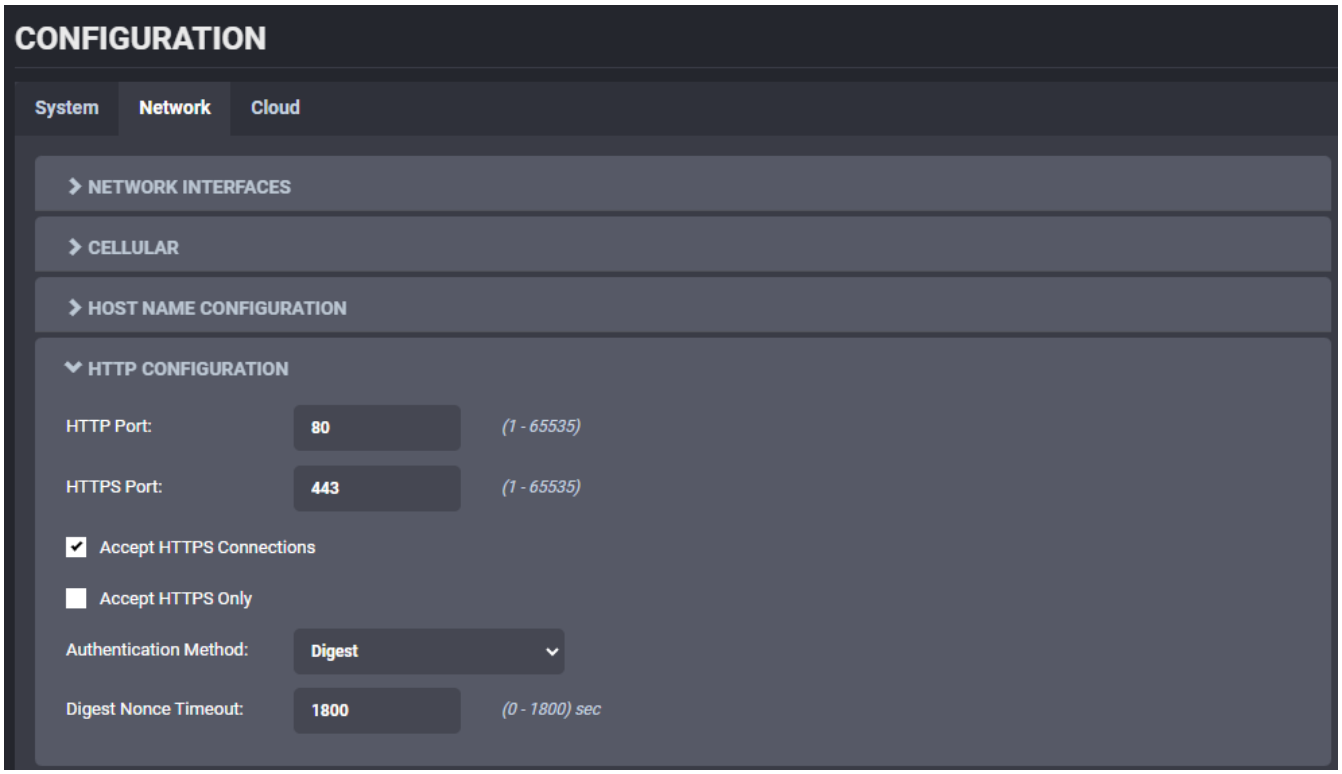


10.8 Configuring Miscellaneous Network Services

The PERCEPT Gateway hosts a variety of network services with configurable parameters. In the ***Configuration*** page, select the ***Network*** tab.

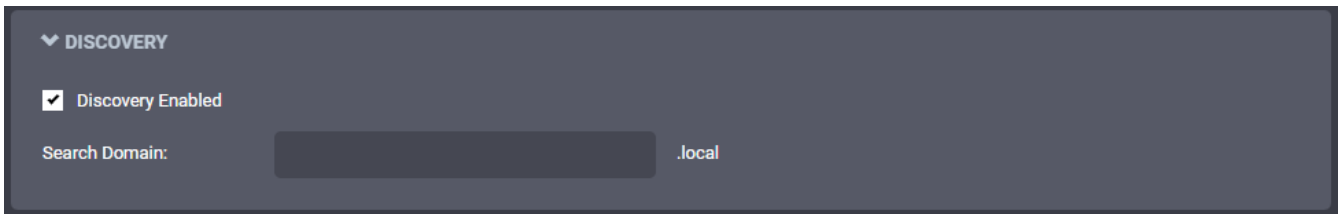
10.8.1 HTTP Configuration

This section details the parameters of the HTTP web server that hosts the configuration page and the command-and-control interface. You can configure HTTP/HTTPS ports and authentication methods.



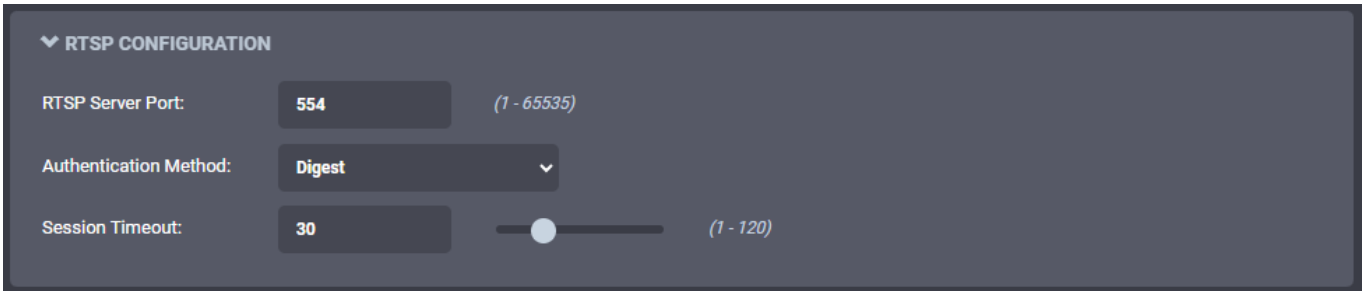
10.8.2 Discovery

When discovery is enabled, the PERCEPT Gateway broadcasts discovery messages over the Bonjour protocol. This makes it discoverable by IONODES' ICT utility (shown in section 10.3).



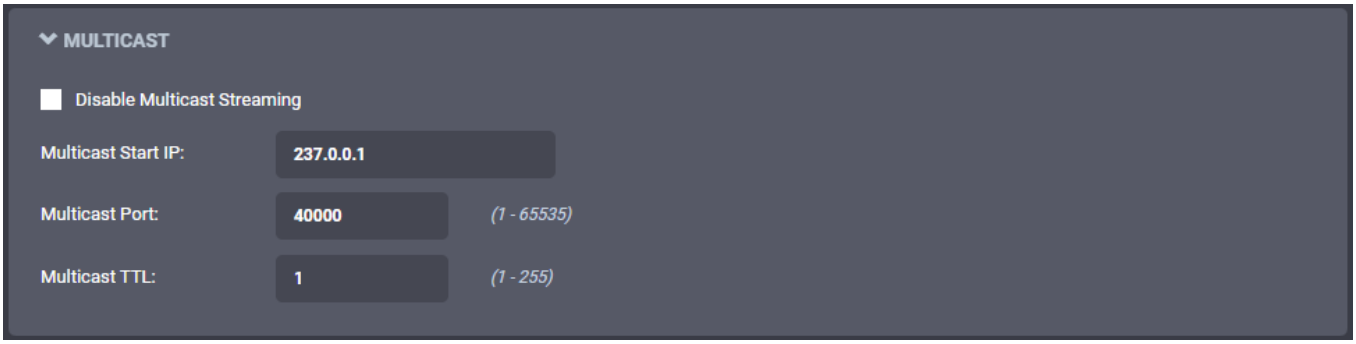
10.8.3 RTSP Configuration

The PERCEPT Gateway hosts an RTSP server that can restream connected cameras on the local network. If the number of connected client applications on the network exceeds the number of individual streams supported by cameras, additional applications can access camera streams from the PERCEPT Gateway's RTSP server. Configurable parameters of this RTSP server are accessible in this section: port, authentication method and session timeout.



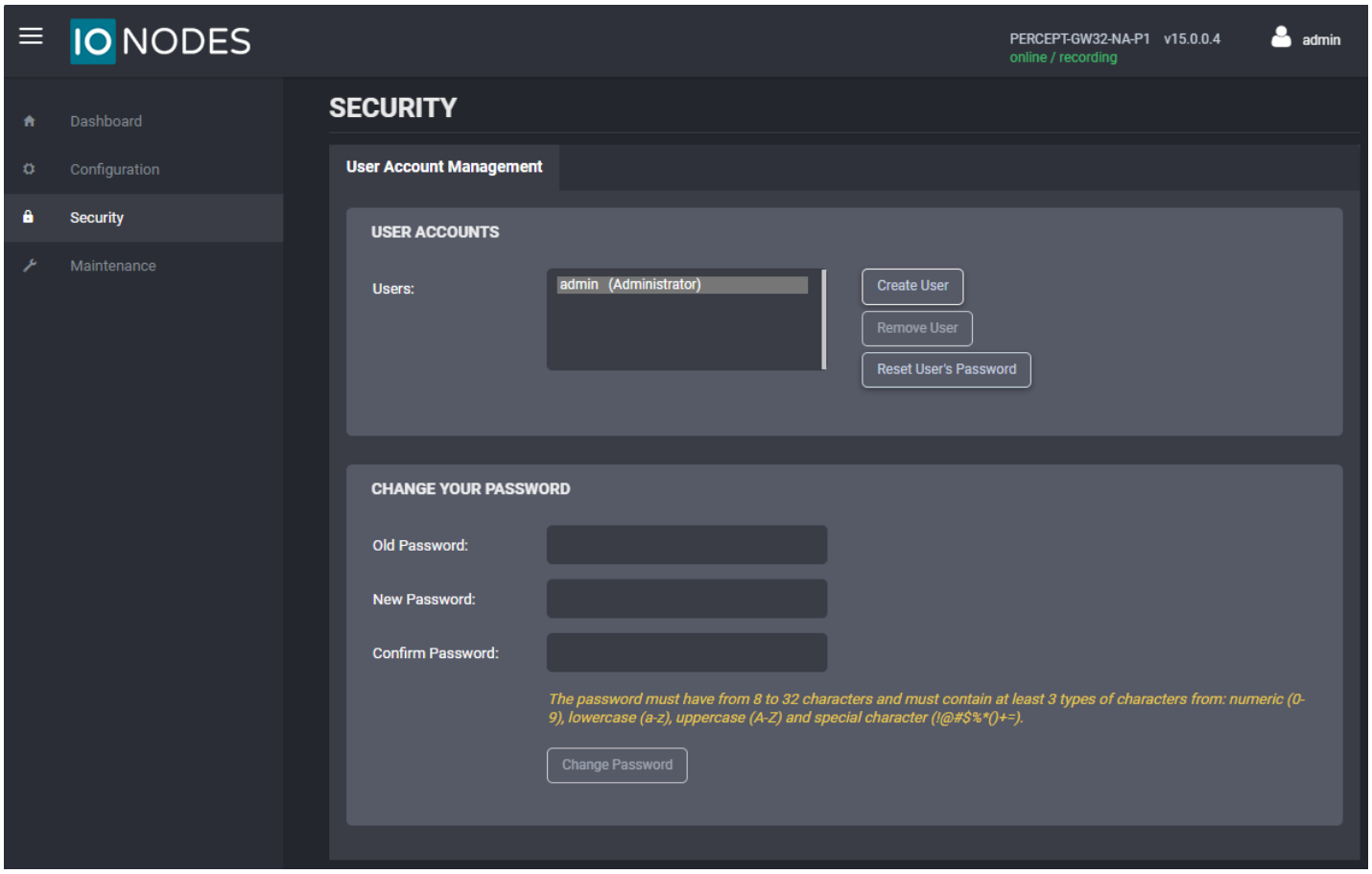
10.8.4 Multicast

The RTSP server can stream locally over UDP Multicast. This subsection allows setting Multicast start IP, port and time-to-live.

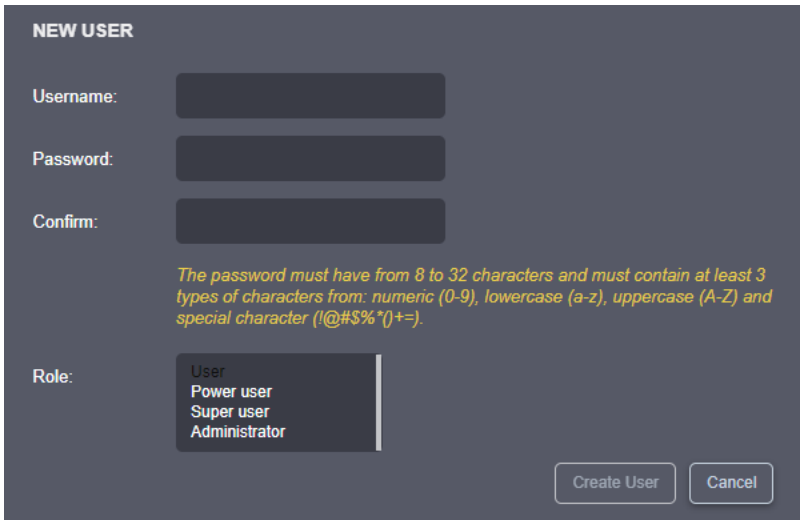


12 Security

This section allows management of user accounts on the device (create account/ remove account/ reset user's password). If the current logged in user has any other role aside from Administrator, this section will only show the option to change its own password (only administrators can manage other user accounts).



Clicking on the ***Create User*** button will open the dialog window shown below.



Each new user account must have a role assigned to it. There are 4 types of user role available to choose from: Administrator, Superuser, Poweruser and User. The table below summarizes permissions for each role.

Role	Description
User	• can access System Dashboard (Product Info/System Status/Resources usage) • can change his own password
Poweruser	*in addition to the User role: • can change all configuration settings • can access the Maintenance section, but cannot perform a firmware update or reset the device to factory default settings
Superuser	*in addition to the Poweruser role: • can access all functionality from the Maintenance section
Administrator	*in addition to the Superuser role: • can create or modify all user accounts

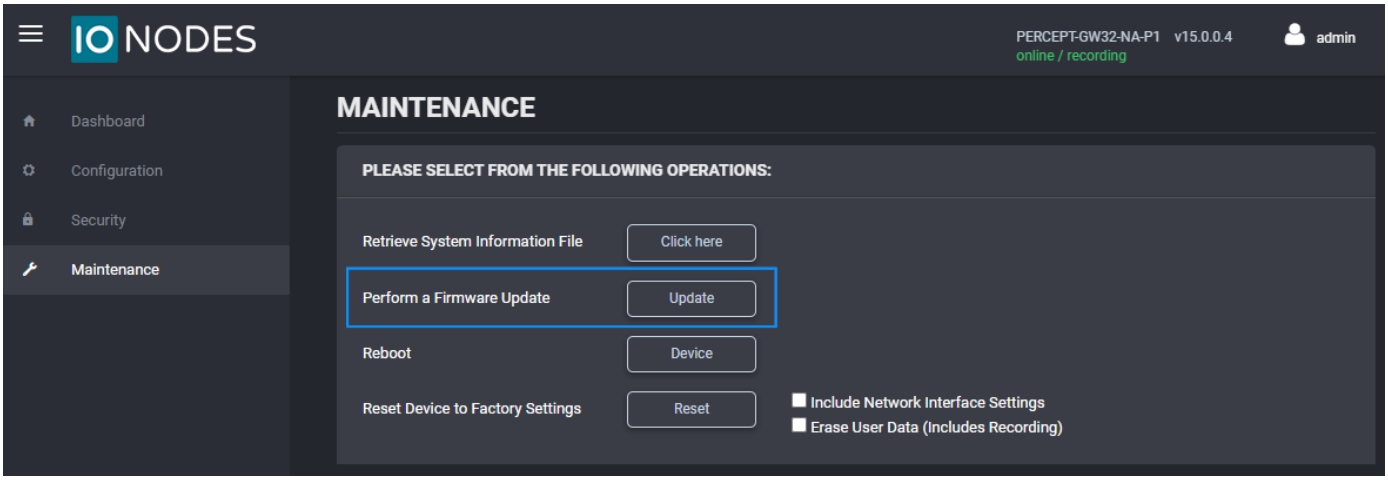
The built-in administrator account cannot be deleted. Upon first access to the web interface the user will be asked to change the password for the administrator account. The new password for the administrator account, will be required to have a minimum length of 8 characters and use at least 3 different character types based on the following: upper case letters, lower case letters, numbers, and symbols/special characters, such as -~ ` ! @ $ ^ *) _ -+ { [ ] | : ; ' ? , . / .

Note: There is no way to recover the password of the built-in administrator account if lost. In this case you'll need to reset the device to factory default settings by following the procedure explained in chapter 14 of this document.

13 Performing a Firmware Update

This section describes how to update your PERCEPT Gateway's firmware from the web interface.

1. Switch to configuration view on the device OR navigate to your device's web interface from another computer.
2. Login with *Superuser* or *Administrator* account's credentials.
3. Click on the ***Maintenance*** tab.
4. Click on the ***Update*** button. You will be asked for the firmware update file; please select the **.iof** file downloaded from the IONODES web site.

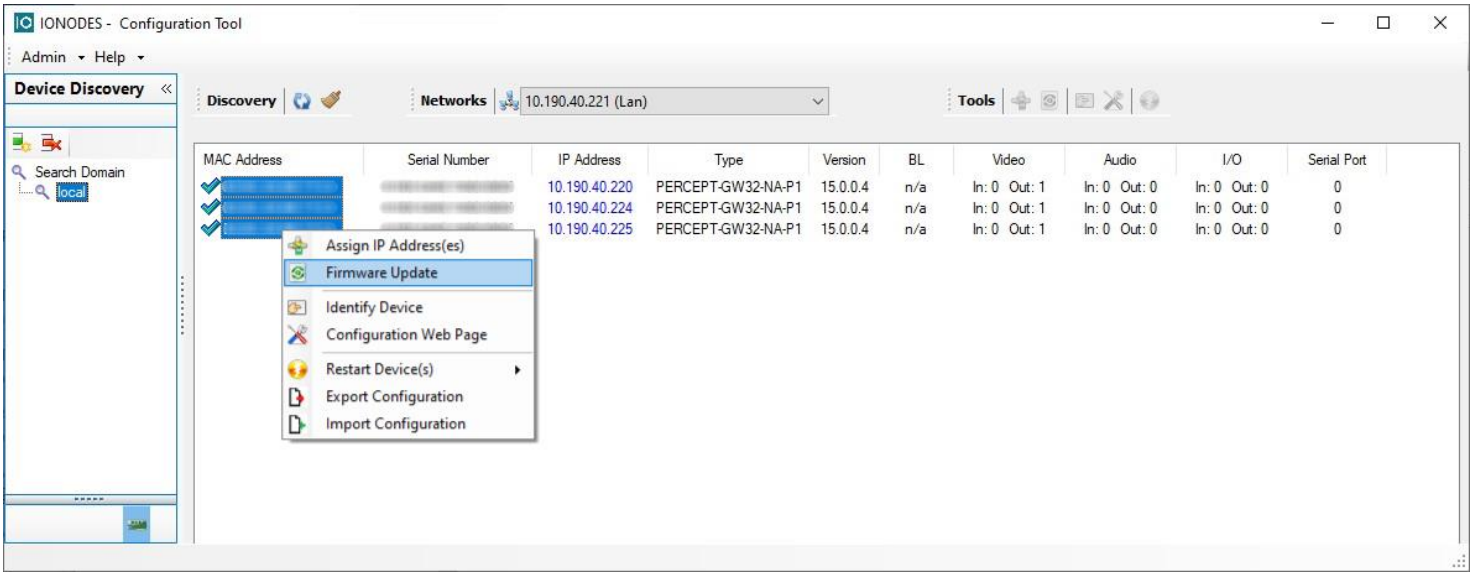


5. You will see the following messages indicating the status of the update:
    - Firmware upload in progress… (100%)
    - Firmware uploaded. Saving to internal storage… (0%)
    - Validating and decompressing firmware… (0%)
    - Firmware ready for installation. Rebooting device… (0%)
        - Web page will disconnect, and the device will reboot.
        - Once the device has rebooted, return to the configuration view. If you are performing the firmware update remotely, the web interface automatically reconnects.
    - Testing firmware stability… (##%)
        - Takes 120 seconds.
    - Firmware update completed. (100%)

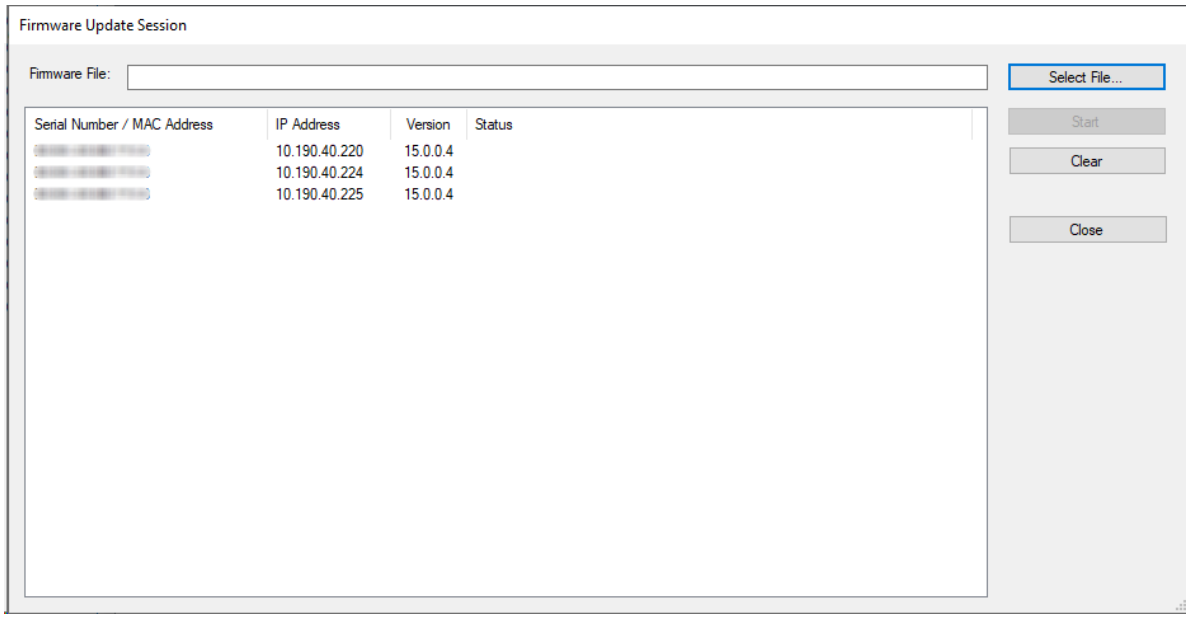
13.1 Batch Firmware Update

This section describes how to perform a batch update of multiple devices to newer firmware versions from the ION Configuration Tool (ICT). The batch firmware update works by starting a firmware update session. Only one session at a time is allowed and up to 20 devices can be selected by session.

From the ICT, select one or more PERCEPT Gateway devices. Using the right mouse button on a selected device' MAC Address, choose the ***Firmware Update*** menu option.



To start a firmware update session, choose the ".iof" file corresponding to the new firmware by clicking to the ***Select File...*** button. Once selected, click the ***Start*** button.



Once started, the ***Firmware Update Session*** window shows the progress of the firmware update. This window can be closed at any moment without losing the current session.

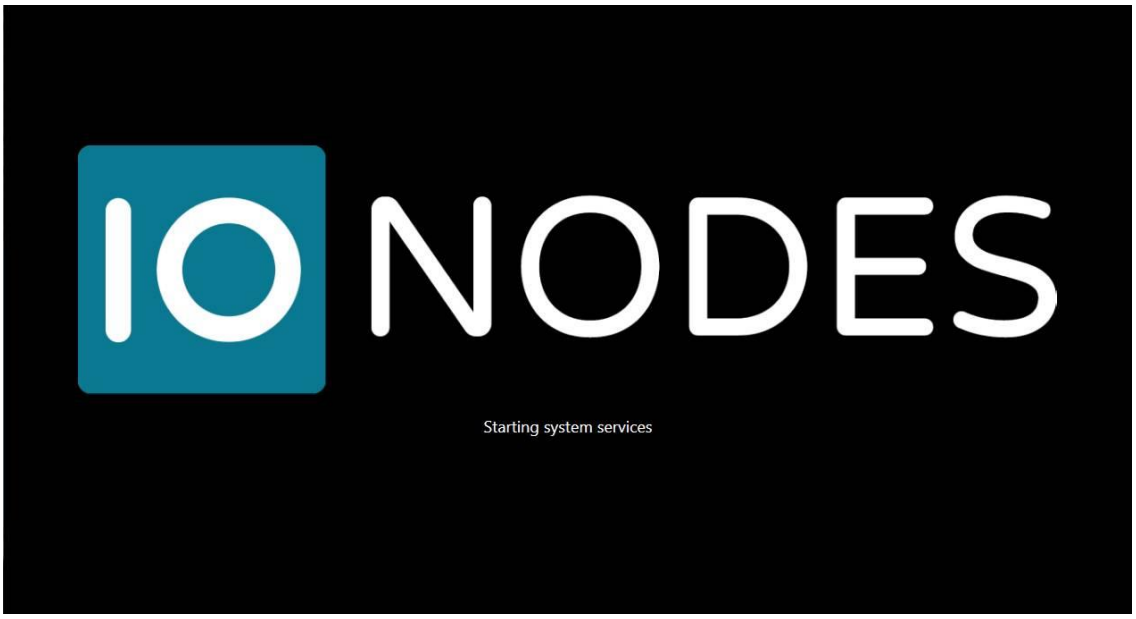
If closed, the progress of the current session can be followed by reopening the ***Firmware Update Session*** window by clicking the button from the ***Tools*** toolbar.

Once done, clear the current session from the ***Firmware Update Session*** window and restart a new session if needed.

14 Safe Mode

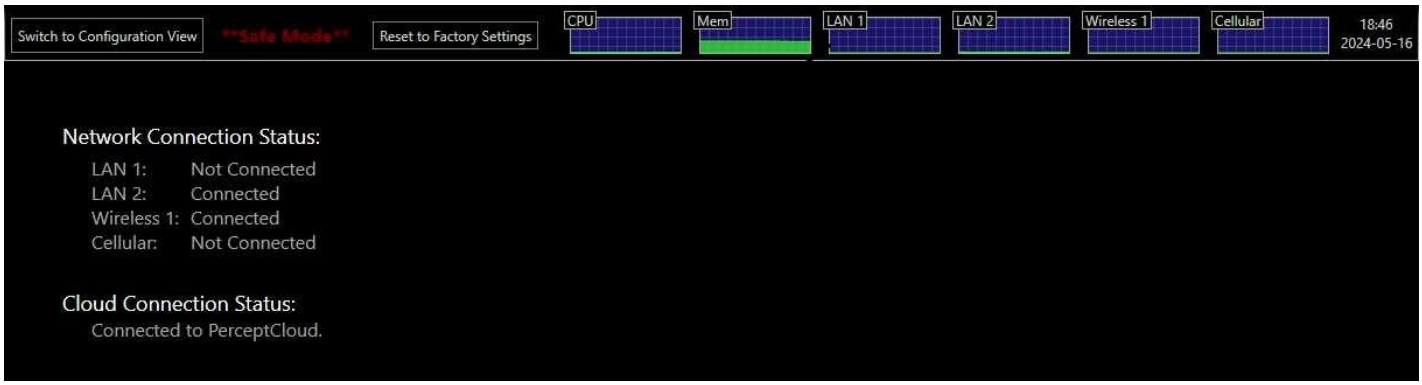
If the PERCEPT Gateway's administrator credentials are lost, and it is not enrolled in an accessible PERCEPT Cloud organization, the device can be reset to factory settings when started in Safe Mode.

Safe mode is enabled during boot-up of the device. It requires a keyboard, mouse and monitor connected to the device. While the PERCEPT Gateway is booting up, wait for it to reach the step shown below:

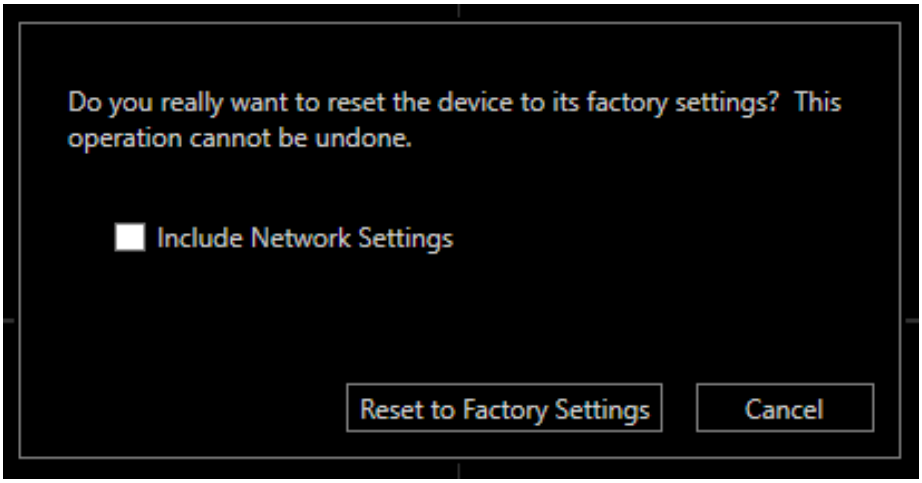


While it starts its system services, press and hold both the LEFT SHIFT key and RIGHT SHIFT key on the keyboard. When the device detects the key combination, it acknowledges the switch to safe mode operation by changing caption to ***Safe Mode enabled.** Starting system services*.

Note: It takes only a few seconds for the PERCEPT Gateway to start its system services and safe mode can be enabled only during that time. If the device finishes booting up before you press the key combination, you can simply shut down and restart the device and try again.



After clicking on the ***Reset to Factory Settings*** in the top banner, a pop-up window will appear asking for confirmation and whether to include or not the network settings.



After confirming by clicking ***Reset to Factory Settings*** in this pop-up window, the unit will reboot and reload factory settings.

15 Troubleshooting

15.1 Common issues & resolutions

Symptoms	Possible cause	Resolution
The PERCEPT Gateway does not power up	The power adapter is not connected to mains power or the PERCEPT Gateway is connected via an incompatible power adapter	Connect the PERCEPT Gateway to a power outlet via the supplied power adapter. The device will boot immediately when power is supplied, except if it was shut down via the power button. In that case, press the button to power it up.
The PERCEPT Gateway does not connect with PERCEPT Cloud	There is no internet access via any on the network interfaces	Ensure the network has internet access. For wired internet, verify the Ethernet cable is not damaged. For Wi-Fi, ensure the wireless adapter is connected to the correct SSID. The PERCEPT Gateway enables cellular if internet is inaccessible through other interfaces for a few minutes. Rebooting the PERCEPT Gateway skips over this delay in changing which network adapter it uses to connect to the internet.

15.2 Contact IONODES Support

For more information, please contact our technical support team:

- Call: 450-696-1060 or 1-844-696-1060 (North America Toll Free)
- Send an email to: support@ionodes.com

Annex A – Statement Limited Warranty

Please visit https://www.ionodes.com/limited-hardware-warranty/ for the latest warranty information.