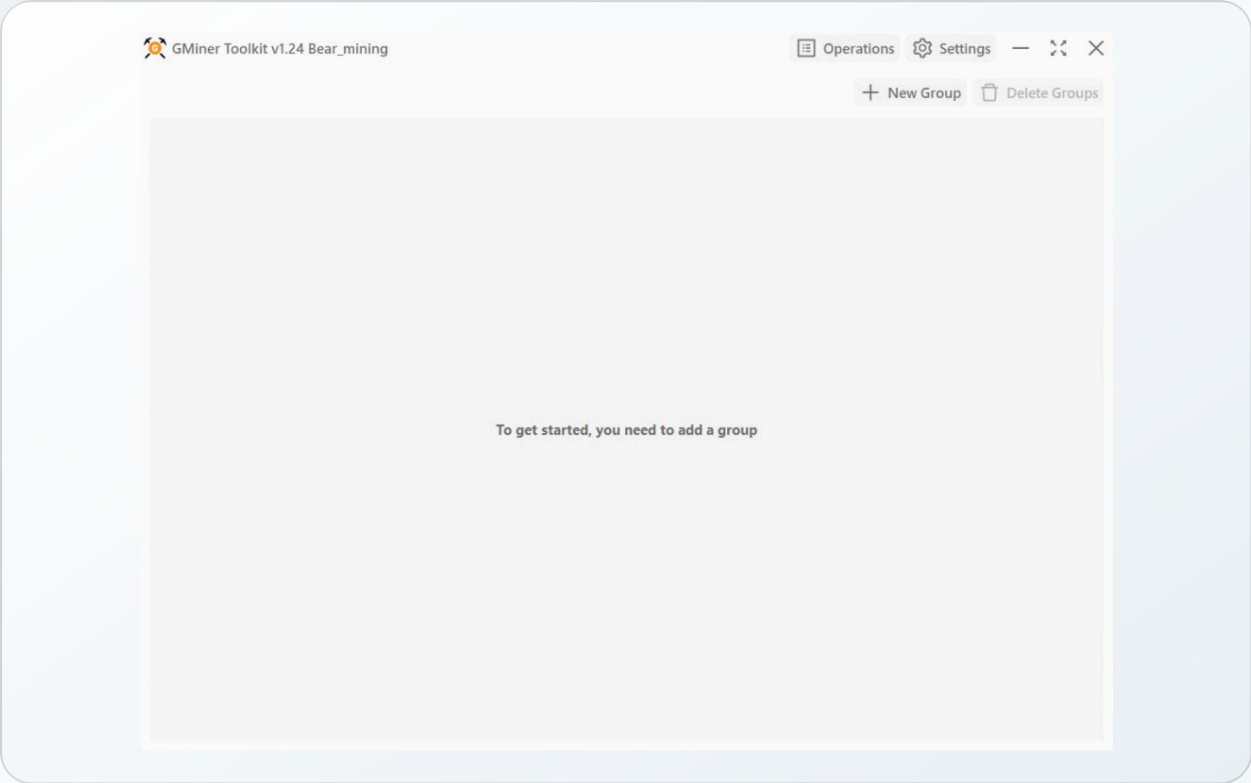
Official BEAR MINING instructions for GMiner Firmware

User's Guide.
2026



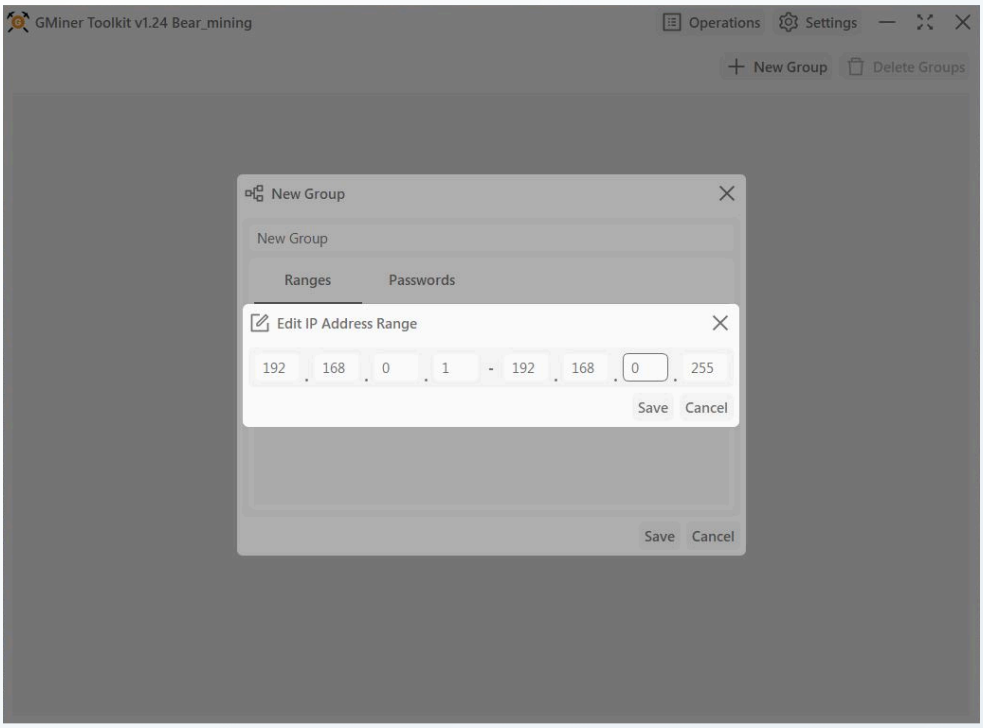
Download **GMiner Toolkit**

Make sure your hardware is included in the **list of supported GMiner devices**

If a third-party custom firmware is installed on the device, such as VNISH, MSK Miner, Luxor, or Hive, restore the original Bitmain firmware before installing the GMiner ASIC firmware. If the device is already running Bitmain firmware, you can start **GMiner Toolkit** right away.

GMiner Toolkit runs on **Windows 32/64 bit** and on **Arch/Ubuntu Desktop** using **Wine** or **PortProton**.

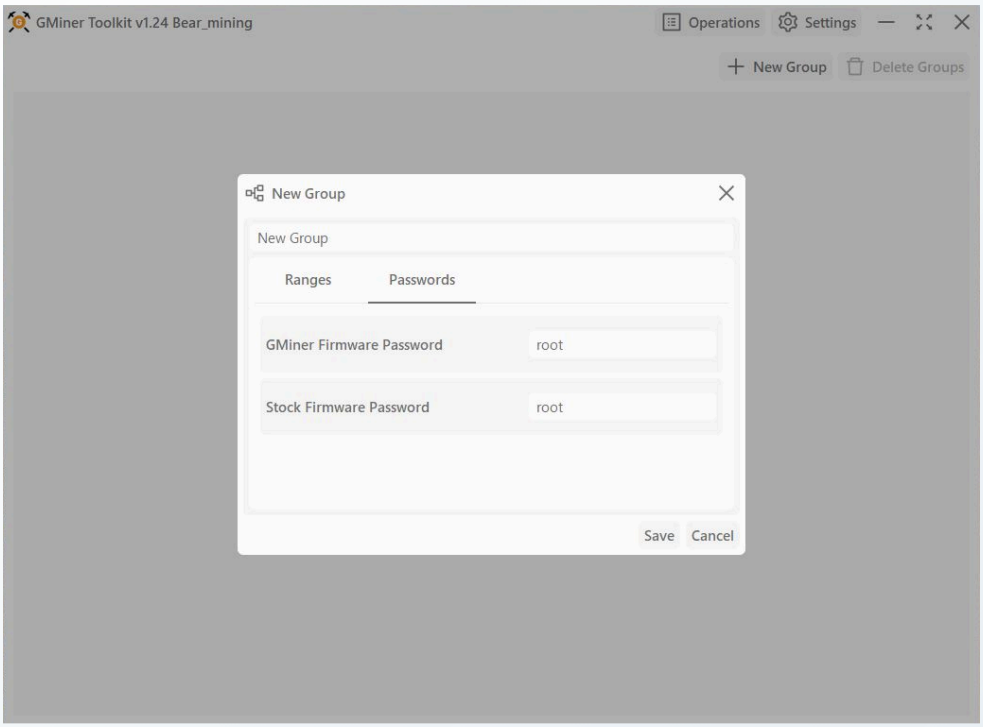
After launching **GMiner Toolkit**, add your hardware with the **+New Group** button. The number of groups is unlimited and can match the number of devices and IP addresses.



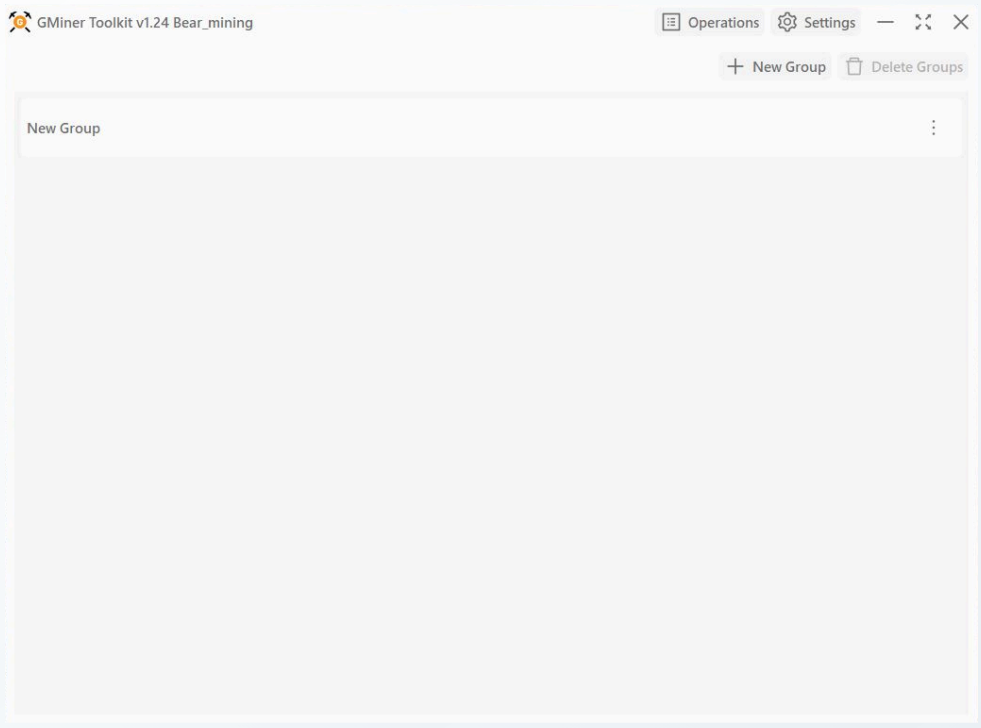
In the window that appears, enter a group name, for example **New Group**, and add IP address ranges for scanning.

The range can be edited by clicking the IP address list. Pool IP addresses may differ depending on the network settings: for example, a TP-Link router uses the 192.168.0.1 network, while a D-Link router uses 192.168.1.1.

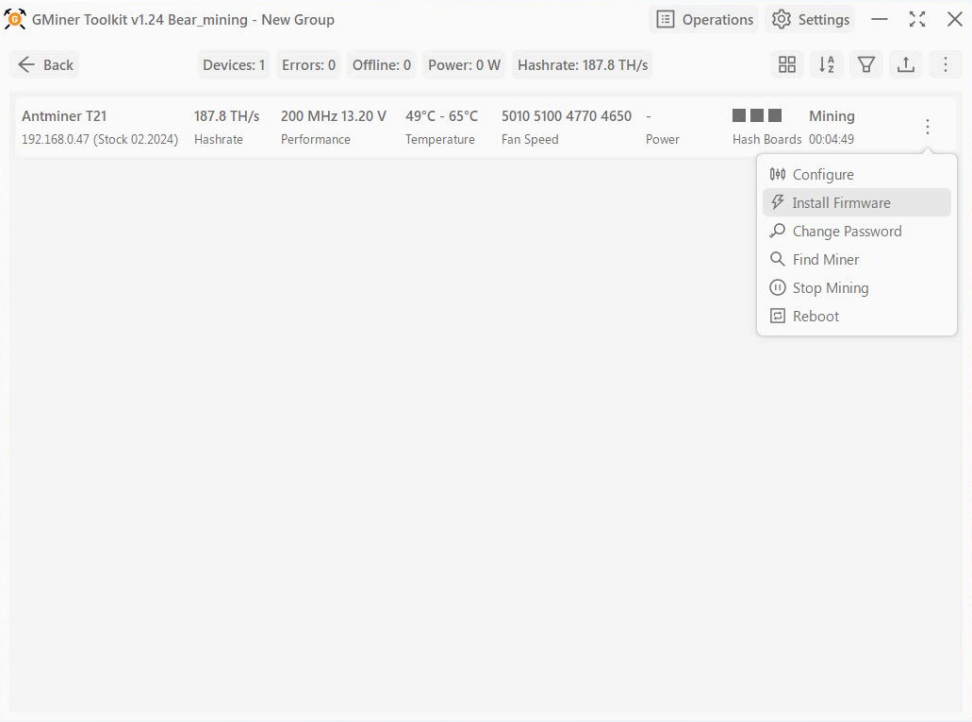
*you can find the required range in your router's network settings.



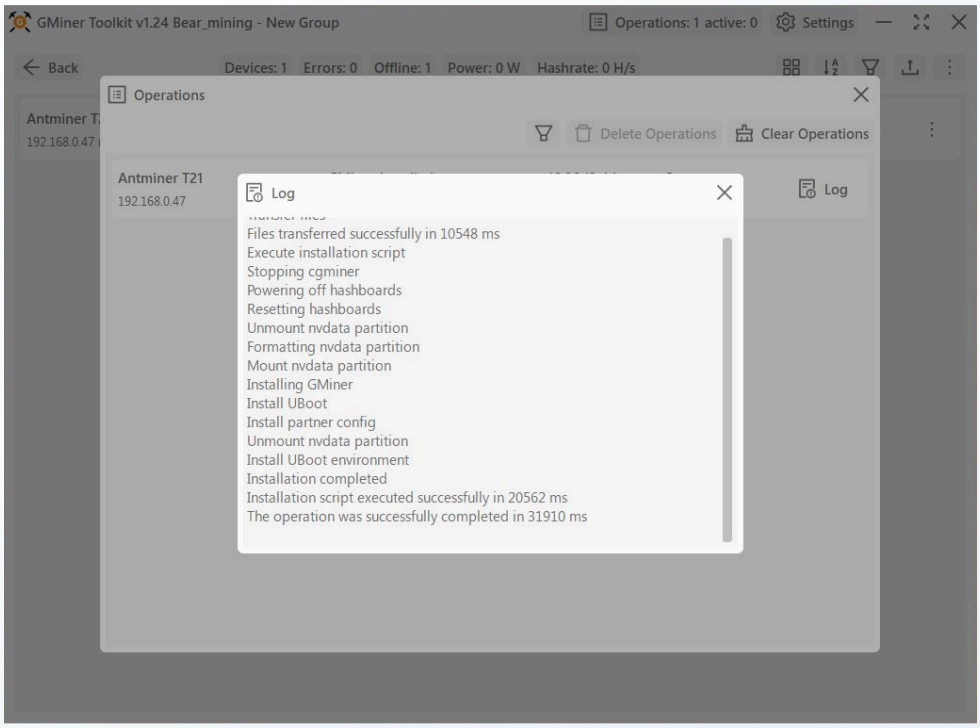
Set the password for logging in to the web interface. The default password is **root**



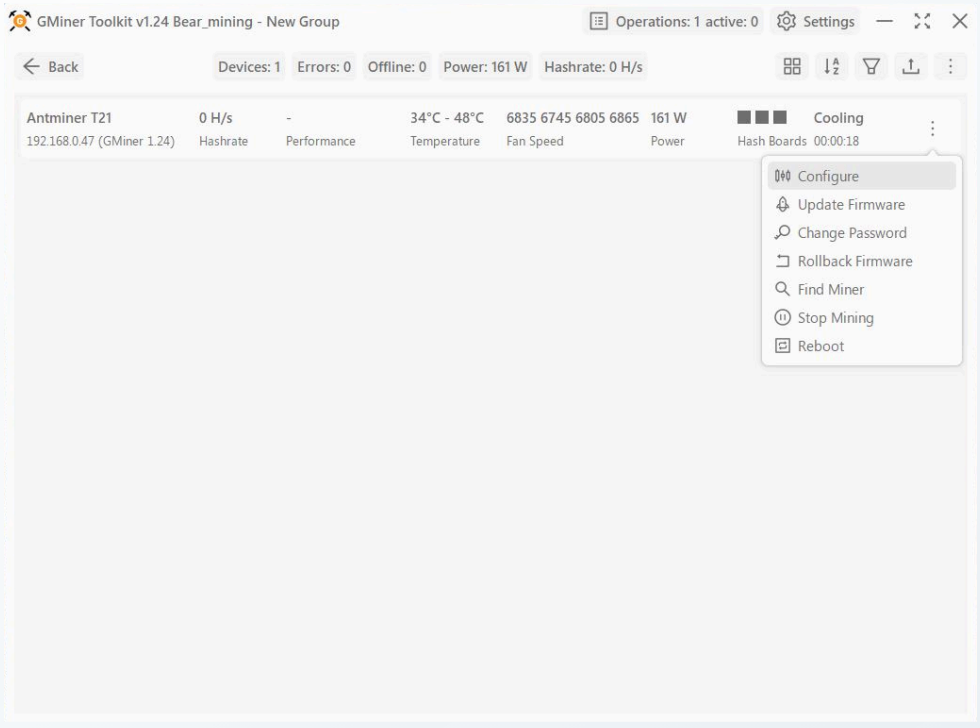
Double-click the group name with the left mouse button to start scanning the specified IP address range.



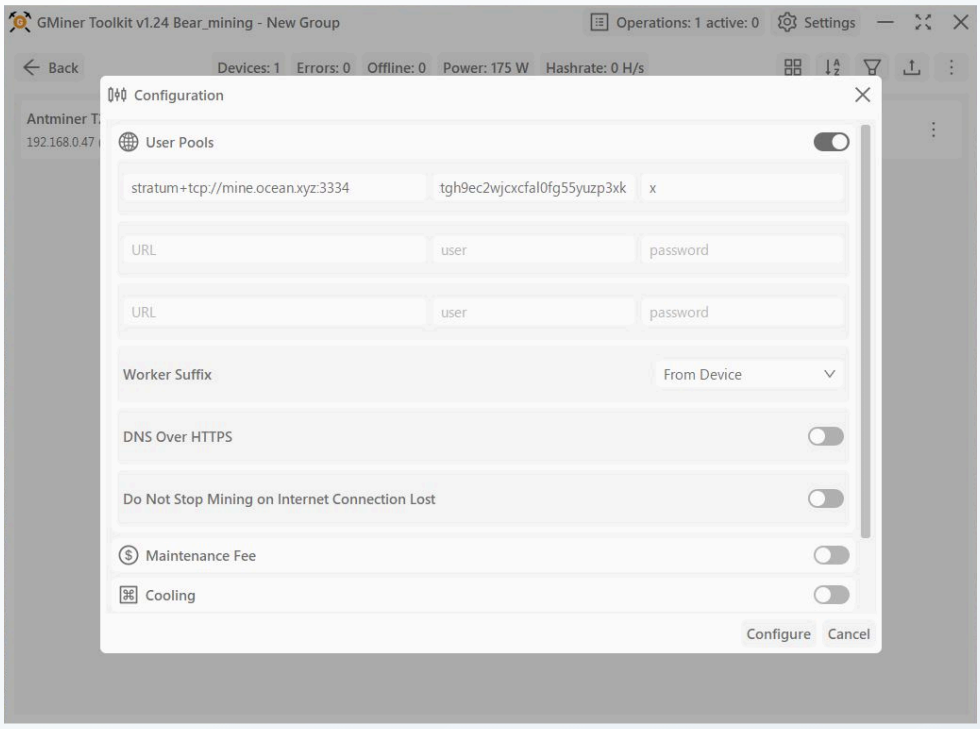
After scanning, the hardware appears in the group. You can open the ASIC-miner settings menu and start firmware installation with the **Install Firmware** button.



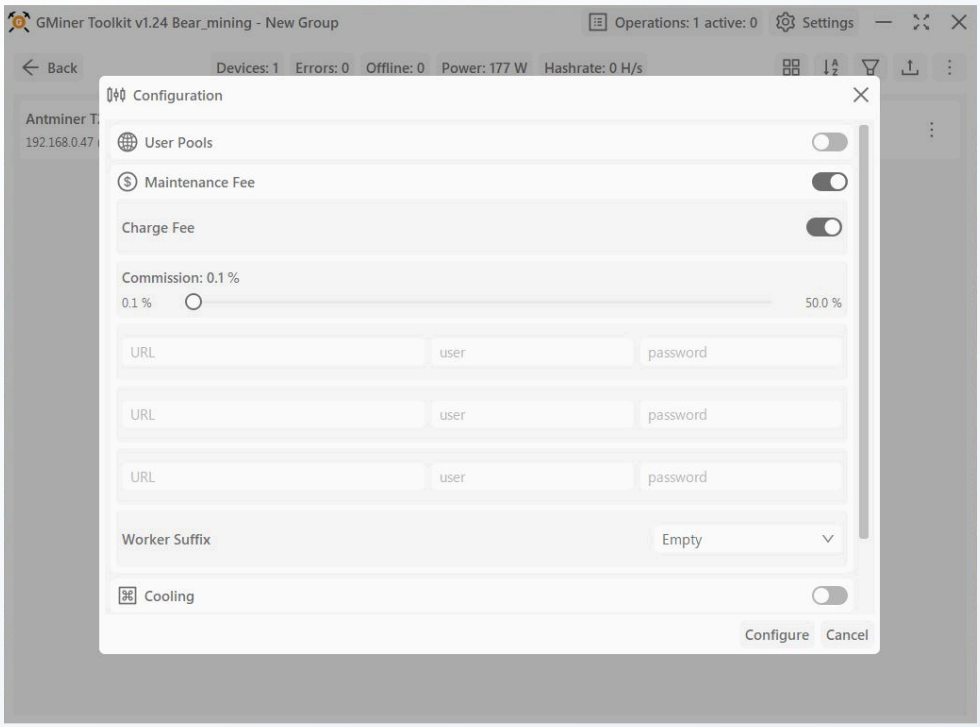
You can review the firmware installation process and result in **Operations - Log**. After a successful installation, the device will reboot automatically.



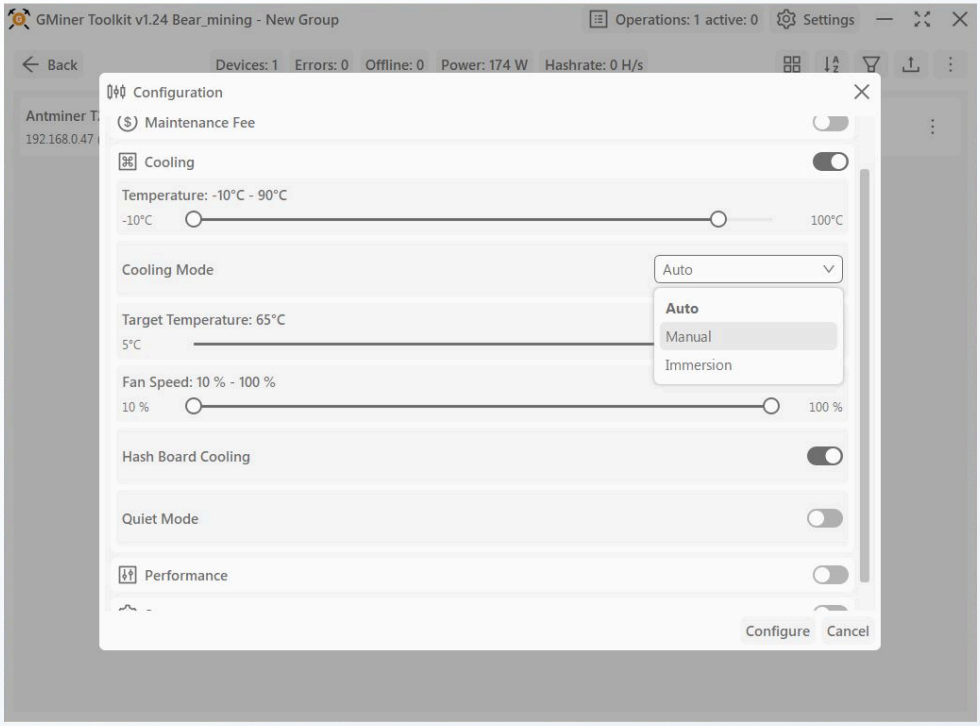
After the device reboots, the installed GMiner version will be shown instead of the stock firmware information. GMiner Toolkit lets you configure and manage hardware without opening each device's **Web interface: configure settings, update firmware, change the password, roll the device back to stock firmware, locate the miner, and reboot it.**



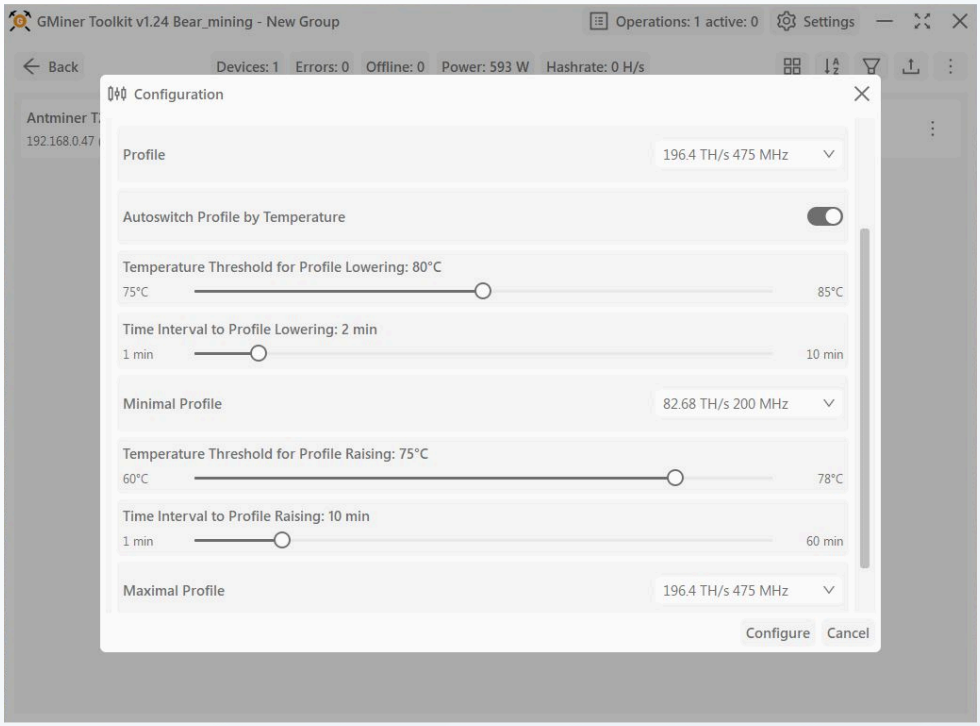
Configure - User Pools.
Pools configuration is described in more detail in **Web Interface: Pools**



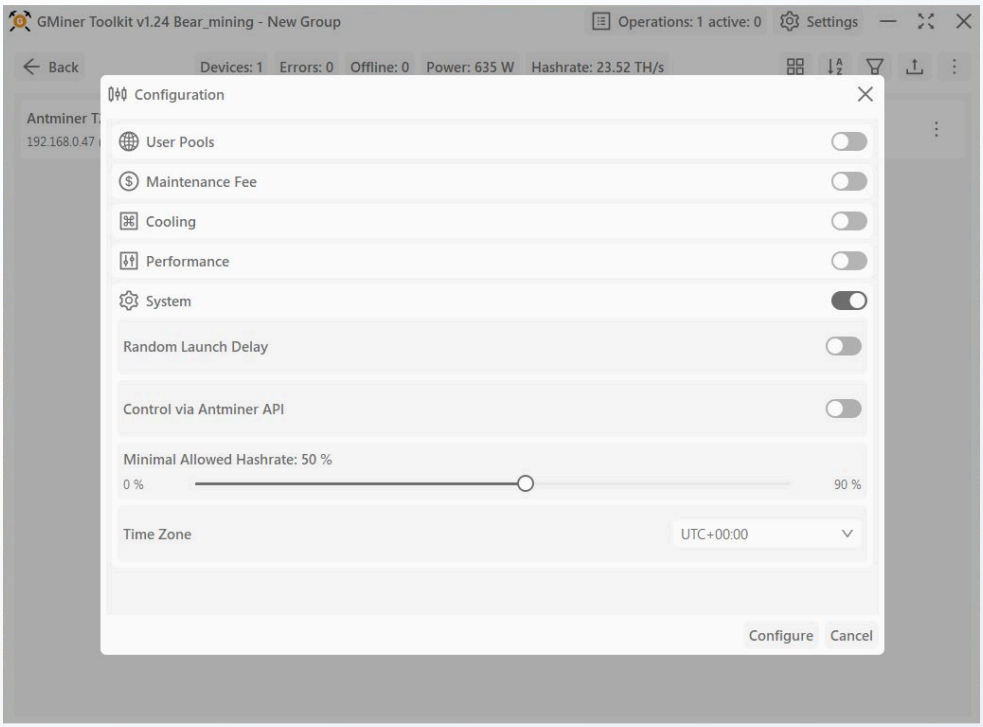
Configure - Maintenance Fee.
Maintenance Fee setup is described in more detail in **Web Interface: Pools**



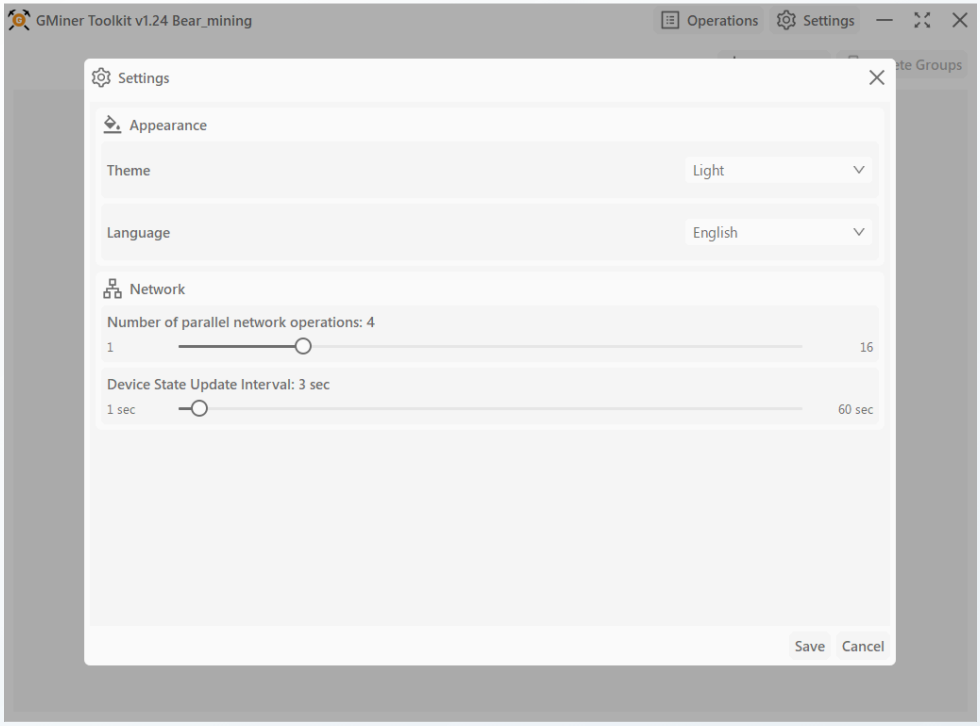
Configure – Cooling.
Cooling setup is described in more detail in **Web Interface: Cooling**



Configure - **Performance**
Performance setup is described in more detail in **Web Interface: Performance**



Configure - **System**.
System setup is described in more detail in **Web Interface: System**

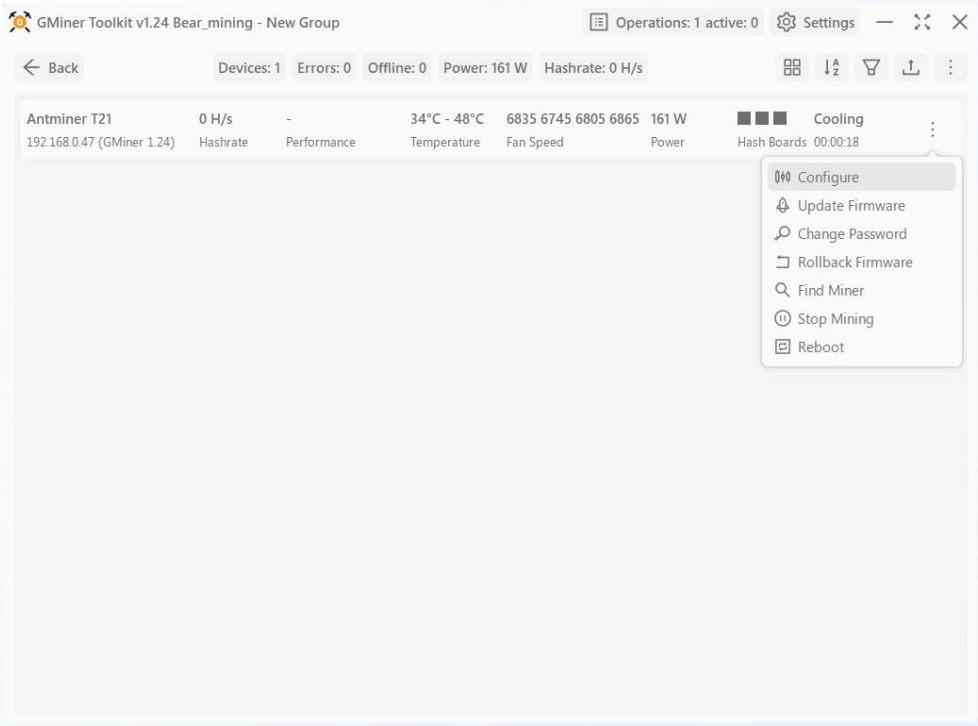


Toolkit Settings.
Appearance. Theme - Light/Dark.

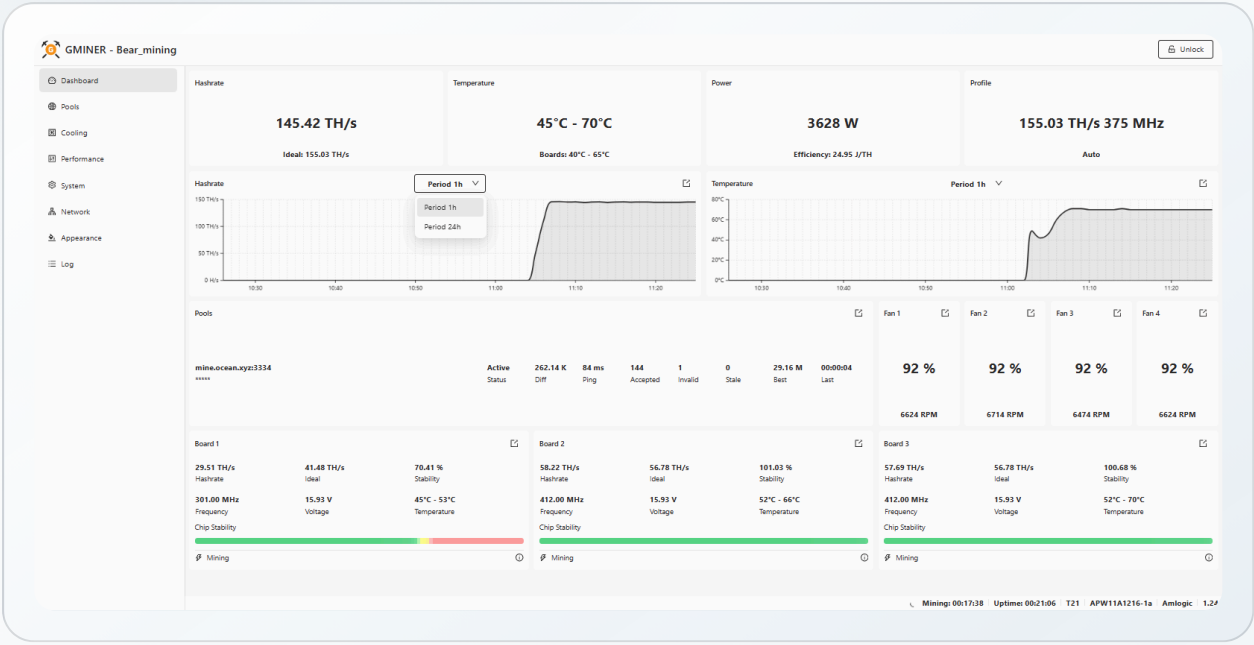
Appearance. Language - Russian/English.

Network. Number of parallel network operations (default 4).

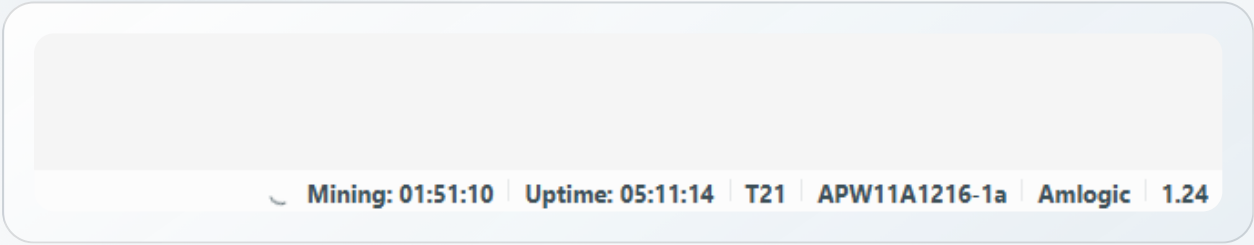
Network. Device state update interval (default 3 seconds).



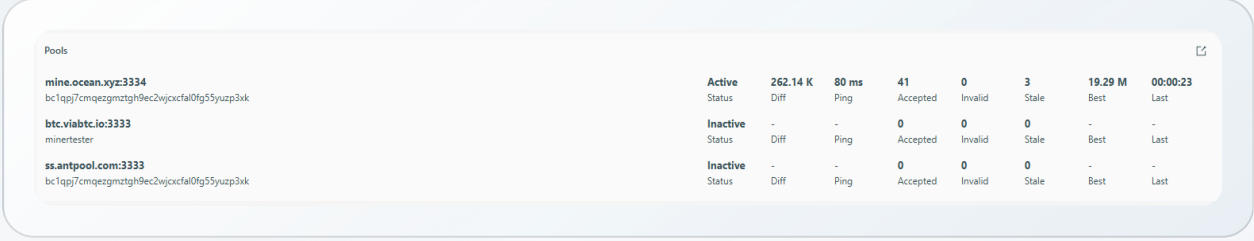
To update, download and run the latest **GMiner Toolkit** version **from our website**, select a device or device group, and click **Update Firmware**. You can review the update process and result in **Operations - Log.**



The **Web Interface: Overview** page provides users with all current mining information. The page contains widgets for **Hashrate, Temperature, Power consumption, Profile, Pools, Hashboards, and Fans**, as well as **Hashrate** and **Temperature** charts for 1 or 24 hours.



The lower-right corner of the page shows the **Current operating process, Hardware model, Power supply model, Control board model and current Firmware version.**



The pool widget shows:

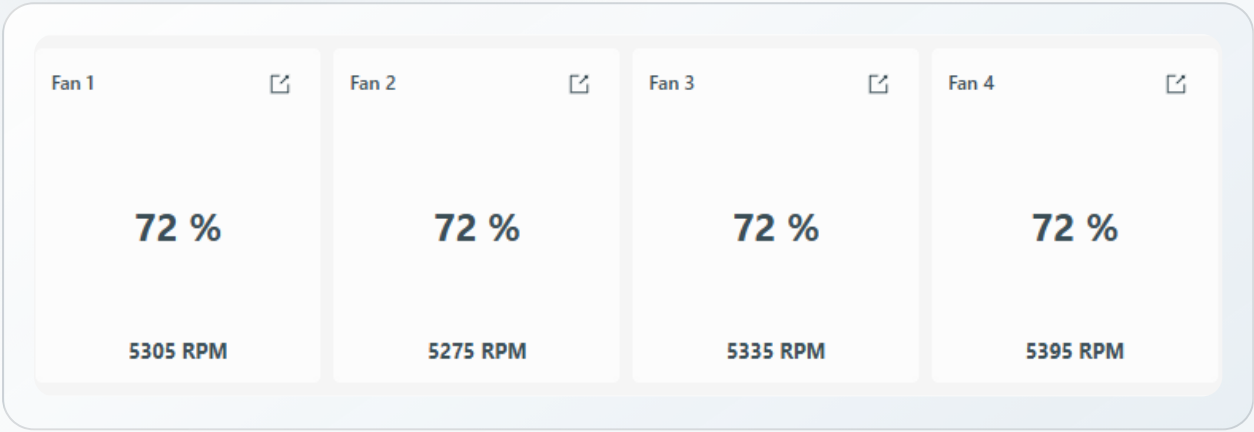
- pool addresses (including backup pools)

- pool connection status

- current difficulty

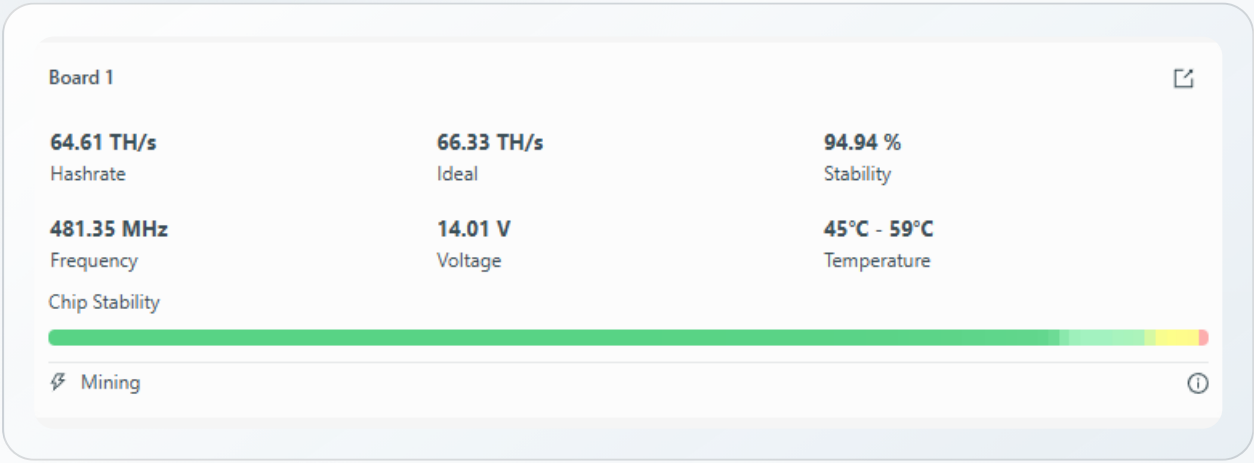
- pool ping

- shares (Accepted, Invalid/Errors, Stale - statistics on accepted or rejected shares).



The **Fan-widget** shows the number of connected fans, fan speed (%), RPM. The **Fault** status indicates a fan failure.

If the Fault status appears for one or more coolers, one or more fans can be disabled in software. See **Web Interface: Cooling** for details.



Hashboard widget (the number of widgets matches the number of connected hashboards). Each widget shows:

- hashrate/ideal hashrate - TH/s

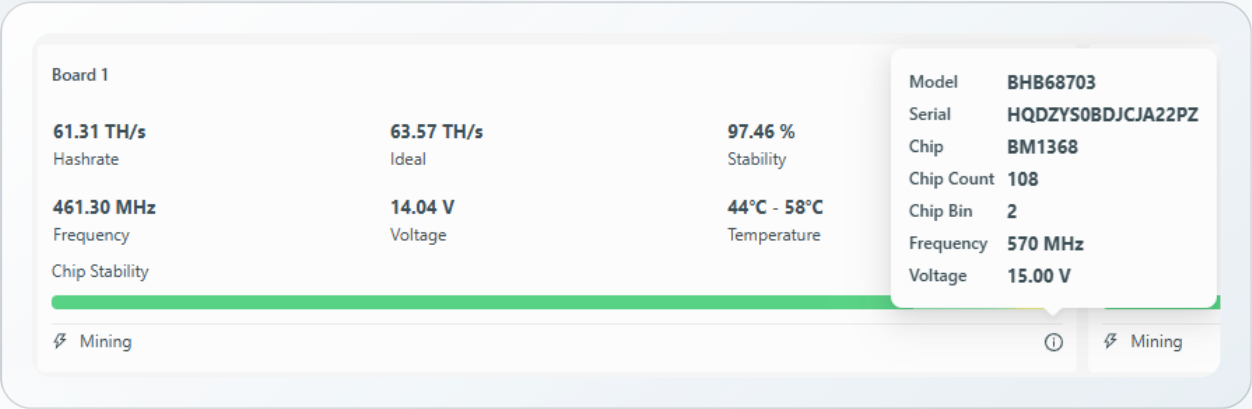
- stability percentage - %

- chip frequency - MHz

- voltage - V

- chip temperature - °C.

The lower-left corner shows the current board operating mode:
Initialization/Mining/Fault/Stopped.



The i icon is located in the lower-right corner of the hashboard widget. It displays EEPROM data:

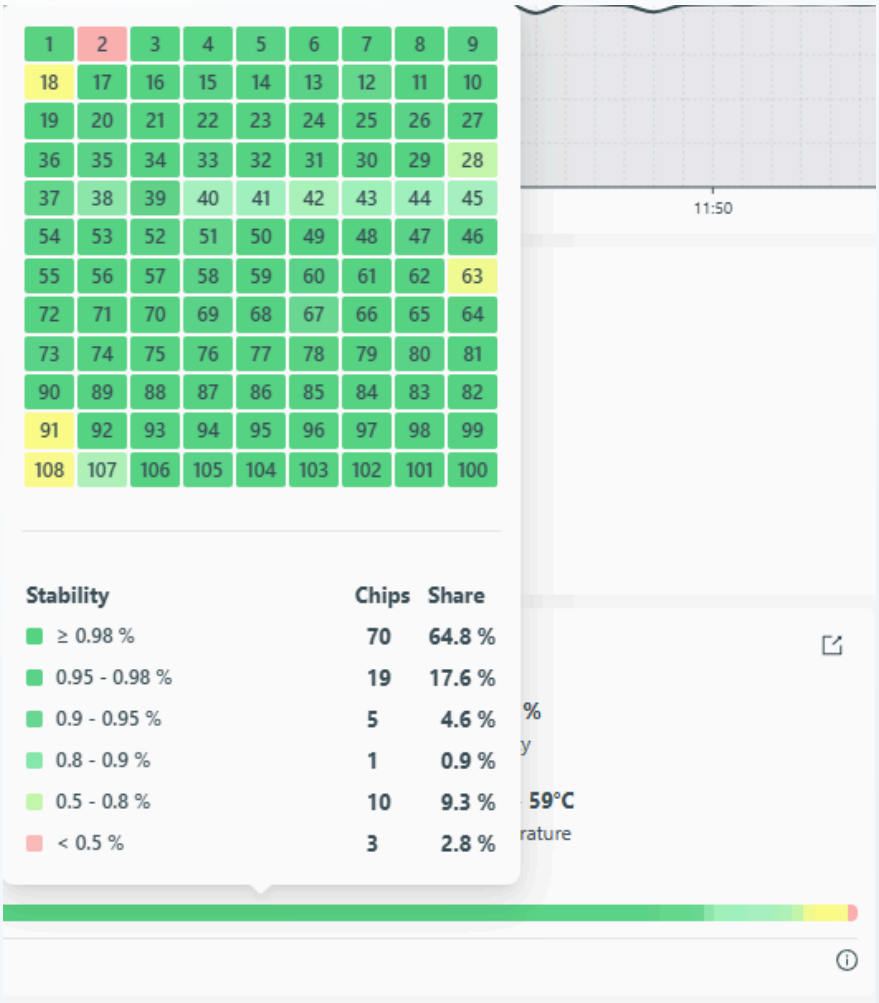
- hashboard model (A3HBxxxx, BHBxxxx, etc.)

- serial number

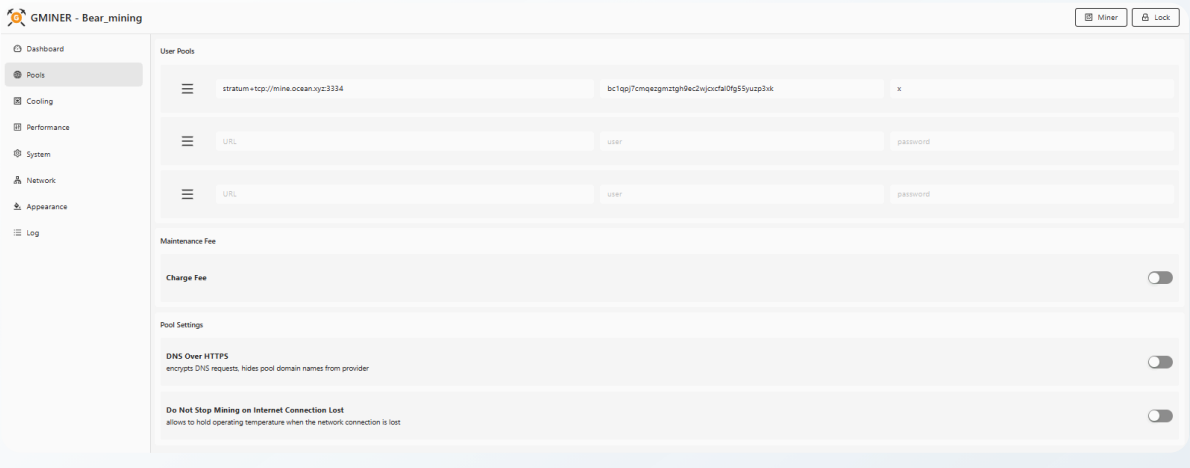
- ChipBin (chip quality)

- chip frequency - MHz

- voltage - V



Hover over the hashboard status bar(green/yellow/red) to view per-chip stability information. The numbering matches the physical chip layout on the board. It shows the number of stable(green), slow(yellow), and critical(red) chips.



Allows you to specify data for connecting your equipment to the mining pool. Without entering your address/login, you will not be able to connect to the pool. GMiner firmware allows you to enter 3 pools/addresses. We strongly recommend entering three different pools or three addresses from a pool (main address and two backup). In case of a failure/block on the 1st pool/address, the system will automatically switch to the 2nd one. The system will first make 3 attempts to reconnect to the 1st pool/address with an interval of 5 seconds; if that fails, it will switch to the next pool. If a failure has already occurred and the system switched from 1st to 2nd, then the system will try to connect to the 1st every 10 minutes. This process can be tracked in the **Log** tab.

Maintenance Fee. Useful option for clients and hosting owners, for equipment with two owners or as a thank-you fee for configuration work. Enter a pool address, BTC address or login and set a fee percentage (up to 50%).

Maximum allowed temperature. When the **Maximum allowed temperature** is reached the equipment will reboot. For example, the **Maximum allowed temperature** is set to 90 degrees. The system has **WatchDog** installed, which monitors the temperature change process; when it reaches 85 degrees a decrease in the hashing **Profile** will be triggered. For example: a profile of 110 TH was set, but the temperature reached 85 degrees, so the system resets the profile 1 step down to 109 TH. The **Profile** will decrease until the temperature

stabilizes around 85 degrees. If the temperature continues to rise further and reaches 90 degrees, the device will reboot and after turning on the system will start **Cooling Mode**. After **Cooling Mode** mining will continue.

Auto cooling mode lets you set a **Target temperature** the system will aim for. For example: Target temperature is set to 65 degrees. Minimum Fan speed 30%, Maximum Fan speed 90%. The temperature begins to rise from 30 to 65 degrees and the fan speed will increase. When 65 degrees is reached, the fan speed will reach 90%.

Minimum Fan Count. If the **Fault** status(fan malfunction) appears for one or more coolers, you can disable one or more fans in software.

Hash board cooling. Equalizes hashboard temperatures before launch.

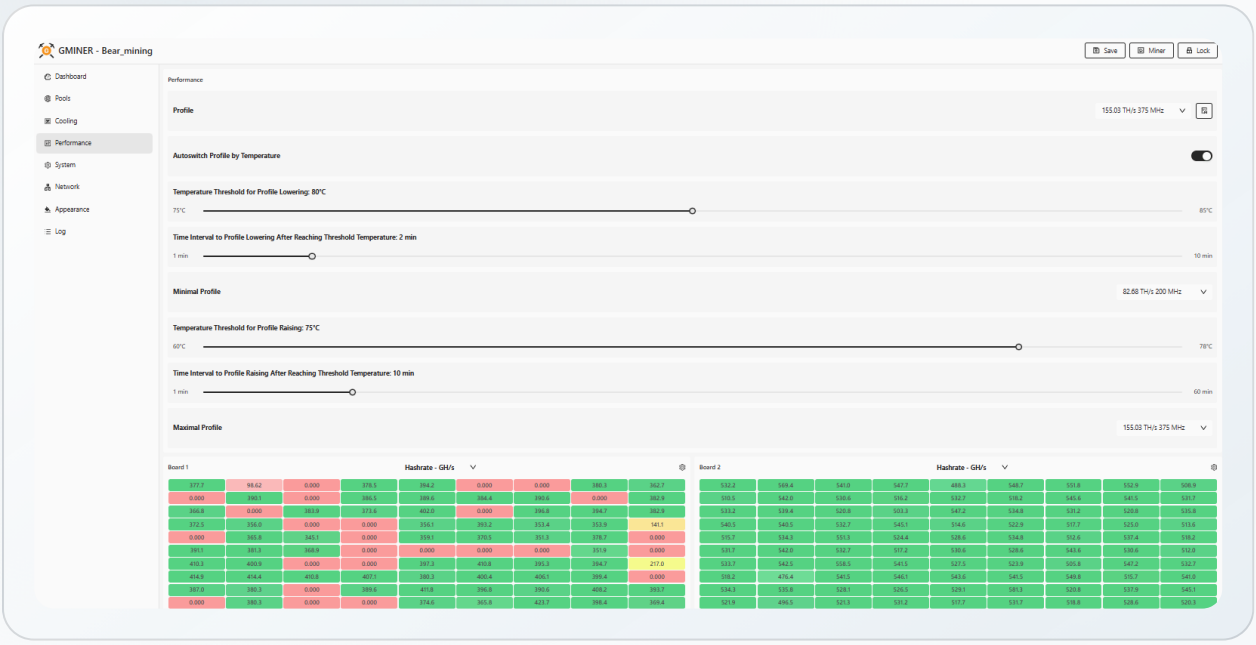
Quiet mode. Lowers the fan speed to 50% during the **Hash board cooling** stage.

Ignore Broken Temperature Sensors. Allows mining to continue with broken temperature sensors.

Ignore Chip Temperature Sensors. Ignores overheating errors in case of faulty chips.

Manual cooling mode lets you set only a static fan speed percentage. The value remains fixed and does not change automatically based on device operating conditions.

Immersion cooling mode is intended for devices submerged in cooling fluid.



Profile. Auto hashing profiles (TH) and **Custom** hashing settings mode. In Auto mode, after selecting a hashrate profile (TH), the system will start the **Initialization** and **Autotuning** process.

Initialization - launching the current hashboard settings of the profile - frequency, voltage, fan speed.

Auto tuning - automatic configuration of hardware parameters for the optimal combination of hashrate, energy efficiency and stability. GMiner's unique auto-tuning algorithm allows the device to better adapt to changes in temperature, cooling and other external conditions, maintaining more stable and energy-efficient operation.

The algorithm works in two stages:
1. Initial setup (duration 1-3 hours).
Status: **Autotuning**
The firmware selects the basic optimal parameters for the miner.
2. Continuous fine tuning
Status: Mining

The miner operates in normal mode, and the firmware continues to analyze the state of the chips and adjust parameters in the background.
The most noticeable effect appears after approximately 12 hours of continuous work. **Autotuning** profiles are saved in the tab to the right of the **Profile** selection menu (TH). If the profile has been fully completed once, without interruption, after a reboot there is no need to wait for **Autotuning** again; Mining begins immediately after **Initialization**. With rare exceptions, the system can start **Autotuning** again within 15-30 minutes. This may be affected by the temperature of the chips and the chip status - Slow/Critical. You can always delete the profile and start **Autotuning** again.

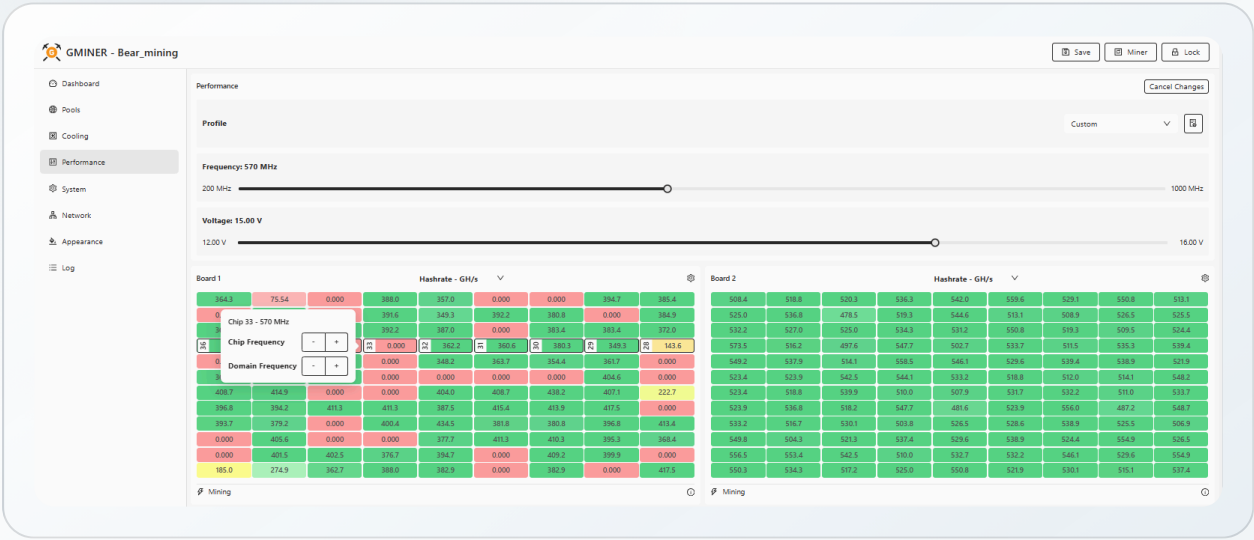
Autoswitch Profile by Temperature.
In Automatic mode - the temperature threshold for lowering the **Profile** (TH) is 5 degrees below the **Maximum allowed temperature;** the **temperature threshold for raising** the profile is 10 degrees below the **Maximum allowed temperature**.

For example:

Maximum allowed temperature is 90(reboot);

Temperature threshold for profile lowering - 85;

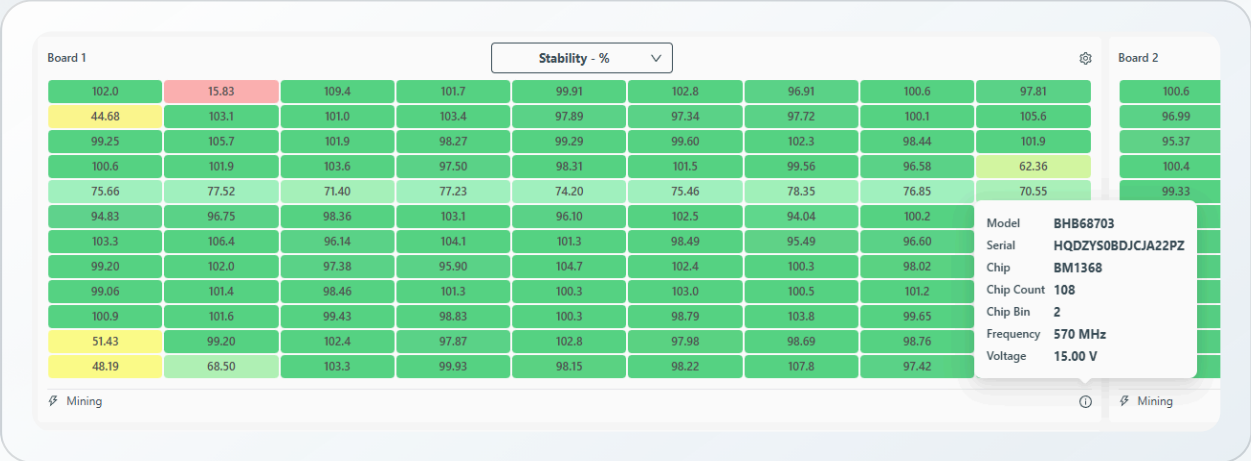
Temperature threshold for profile Raising - 80;



Custom mode - you can manually, using sliders, set fixed values - chip Frequency(MHz) and Voltage(V). If one or more chips in **Custom mode** do not match the specified user settings, **Autotuning** will independently monitor and try to correct slow or critical chips and bring them to the specified hashrate. This process can be tracked in the **Log** tab.

In **Frequency Tuning** there is a completely manual tuning of chips. The setting allows the user to configure the frequency of **one chip** or **domain** (a group of chips located on a hashboard).

Hashboard widgets show the detailed state of each chip:
- hashrate - GH/s
- temperature - °C
- heatmap - °C
- stability percentage - %
- chip frequency - MHz.



The **i** icon **i**s located **i**n the lower-r**i**ght corner of the hashboard w**i**dget. It d**i**splays EEPROM data:

- hashboard model (A3HBxxxx, BHBxxxx, etc.)

- ser**i**al number

- Ch**i**pB**i**n (ch**i**p qual**i**ty)

- ch**i**p frequency - MHz

- voltage - V

Random Launch delay - launching mining on a device with a different time delay. Allows a user with a large amount of equipment to start mining on devices at random times to avoid a simultaneous load on the electrical network.
For example: we have 10 devices with a consumption of 4 kW each = 4 kW * 10 devices = 40 kW. In order not to instantly load the electrical network with 40 kW, each device will turn on with a random delay in milliseconds.

Sleep mode - disables all hash boards on the device. The control board and fans keep running. Convenient if you need to stop all processes on the equipment.

Antminer API - allows you to manage pools and sleep mode via the Antminer API.

Minimum allowed hashrate (default 50%) - allows you to set the minimum hashrate (TH) as a percentage (%). If the hashrate drops to 50% of the one specified by the profile, the device will be rebooted. The system makes 3 attempts to reboot the equipment. Afterwards, a **Warning** notification will appear on the main page.

Time Zone - setting the time zone will help you better navigate the device logs.

Password - Change the password. Default - **root**

Firmware - **Revert back to stock.** Roll back to stock Antminer BITMAIN firmware.

Configuration - Reset to default/Create backup/Restore from backup.

- **reset to default** - Restores all equipment settings to their original state, as after flashing.

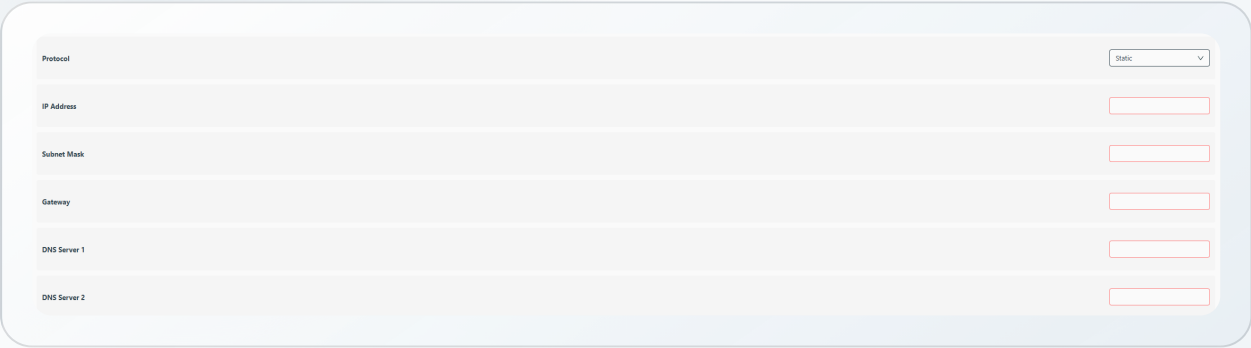
- **create backup** - Saves all profiles and system settings to a file. For example - backup_Antminer_model_192_168_1_190.cfg

- **restore from backup** - allows you to restore system settings/profiles after flashing from the file backup_Antminer_model_192_168_1_190.cfg

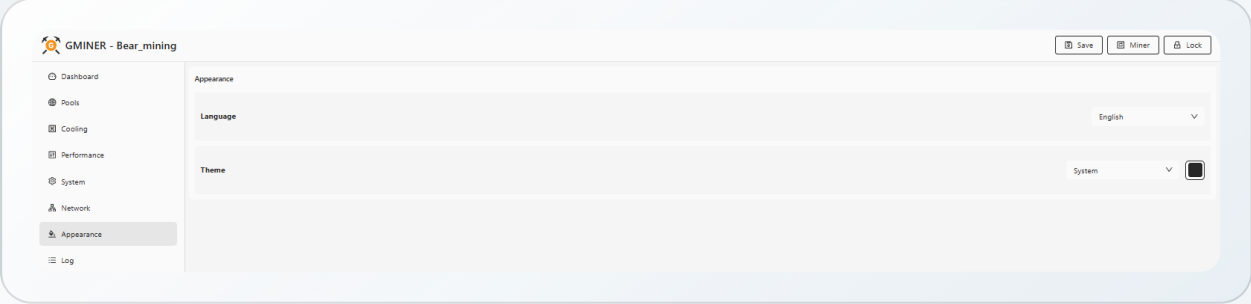
Network Information: MAC-Address, IP Address, Subnet Mask.

Hostname - Defines how the equipment is identified on the network. The default is Antminer.

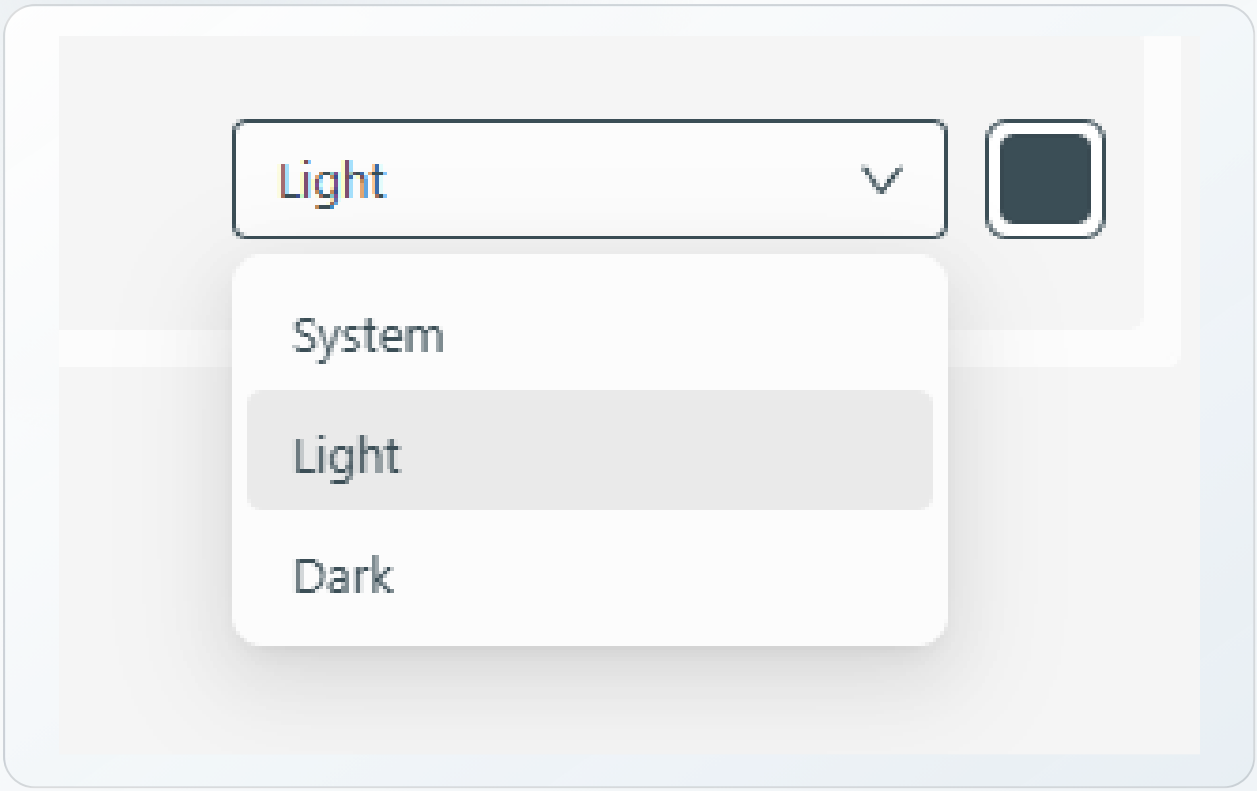
DHCP - Automatically assigns IP addresses to devices connecting to the network. The IP address may change due to various situations/equipment. For example: power outage, frequent reboots.



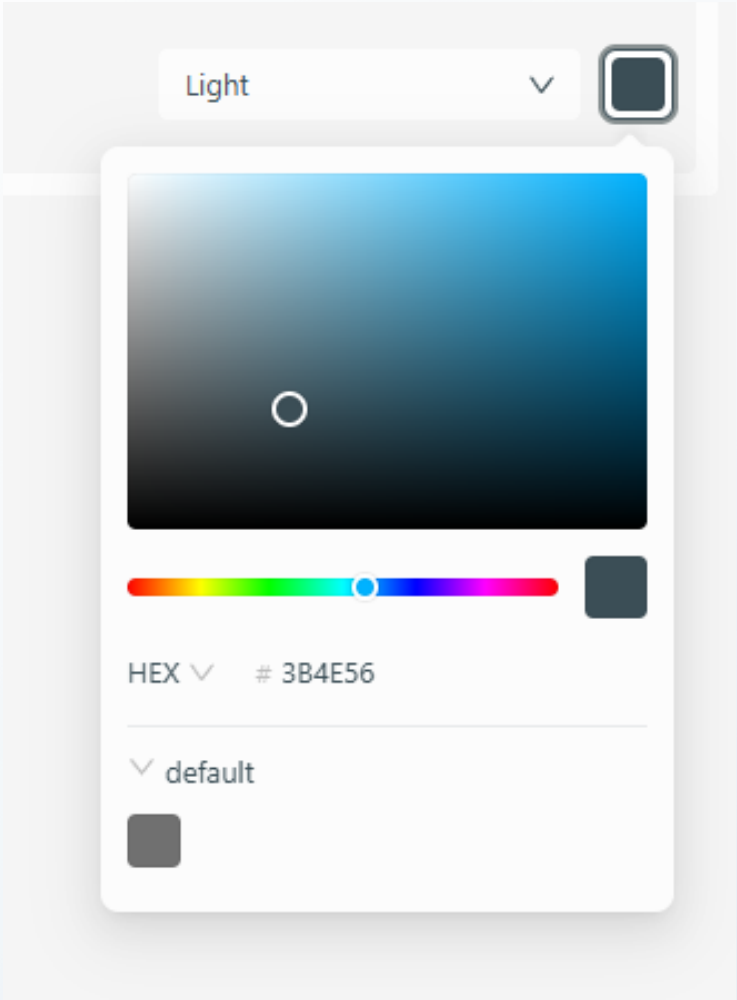
Static - a fixed IP address with static network settings; does not change without manual reconfiguration and does not change after rebooting/turning off the device.



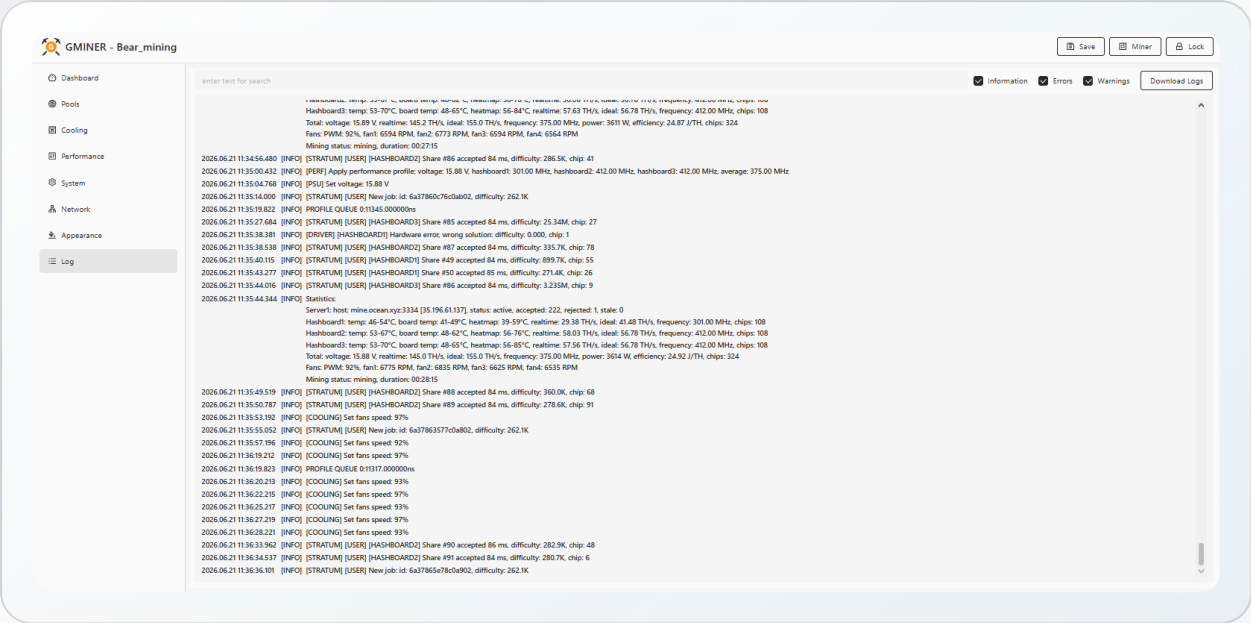
Language - system language. **Russian** or **English**



Theme– System/Light/Dark (System - depending on the time of day, light or dark).



It is also possible to choose the font color.

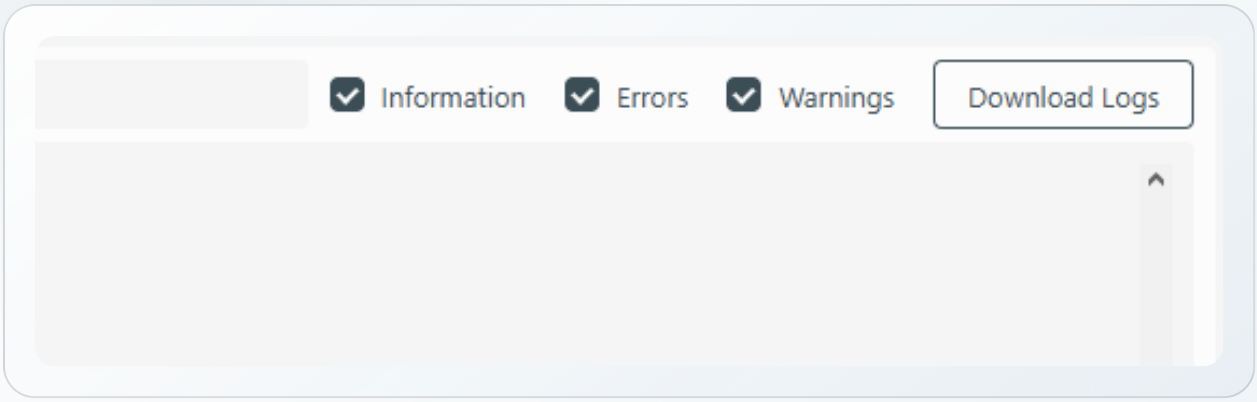


Log. Used to analyze events, find errors, and monitor equipment activity. Provides all detailed information about the operation of the device. The log can be saved to a file for detailed study by clicking the **Download logs** button.

The **Log** is stored on the device. To save space, it is compressed into an archive. It is automatically sorted in the folder by creation time. For example: logs_Antminer_model_192_168_1_190.tar.gz. 16 MB of memory is allocated on the device for the **Log**; if the memory runs out, the **Log** is overwritten automatically, starting from the oldest entries by date/time. **Log** structure. Each log entry has the following structure:
[Timestamp] [Level] [Category] [Add. information] [Message].

Timestamps - Format: YYYY.MM.DD HH:MM:SS.ms - allow you to track the chronology of events and time intervals between operations, so it is important to set the correct **Time zone** in the **System settings**.

Event categories:
STRATUM - interaction with the mining pool;
PSU - power supply control;
COOLING - cooling system;
DRIVER - management of hashboards and chips;
PERF - performance analysis;
Statistics - summary statistics;
CONF - change configuration/settings.



Log levels - **[INFO]** - informational messages (the main type in these logs). In the system, you can select the log display levels **[Information], [Errors], [Warnings].**

Thank you for using the BEAR MINING firmware.