RigRunner User Guide

ePIC UMC OS

Last updated: May 2026

Introduction

ePIC UMC OS enables users to install ePIC firmware directly onto an **Amlogic and BeagleBone** stock control board, offering a flexible alternative to using ePIC UMC boards. This approach offers easy remote installation, compatibility with most Antminer stock firmware, and seamless integration with existing infrastructure.

UMC OS can be simply installed through **RigRunner** application:

- **RigRunner:** A user-friendly application designed for efficient fleet installation. RigRunner allows users to **scan**, **install**, and **uninstall UMC OS** across multiple rigs with ease, just like ePIC Dashboard, making it a convenient option for managing large deployments without needing command-line expertise.

Users can choose between purchasing a license key or opting for the **1.5%** dev fee option—whichever best aligns with their operational strategy and preferences.

Setup

Requirement

- Compatible stock firmware versions are as follows:

  Works

  - **February 2024 or prior**
  - **Newer than September 2025**

  Does NOT work

  - **March - June 2024**
  - **FR-1.39(260318-S21-Pro+)**

    We recommend upgrading it to a later stock version.

    Contact support@epicblockchain.io for more information.

  Click the model below to find the stock firmware if needed.

  S21x firmware

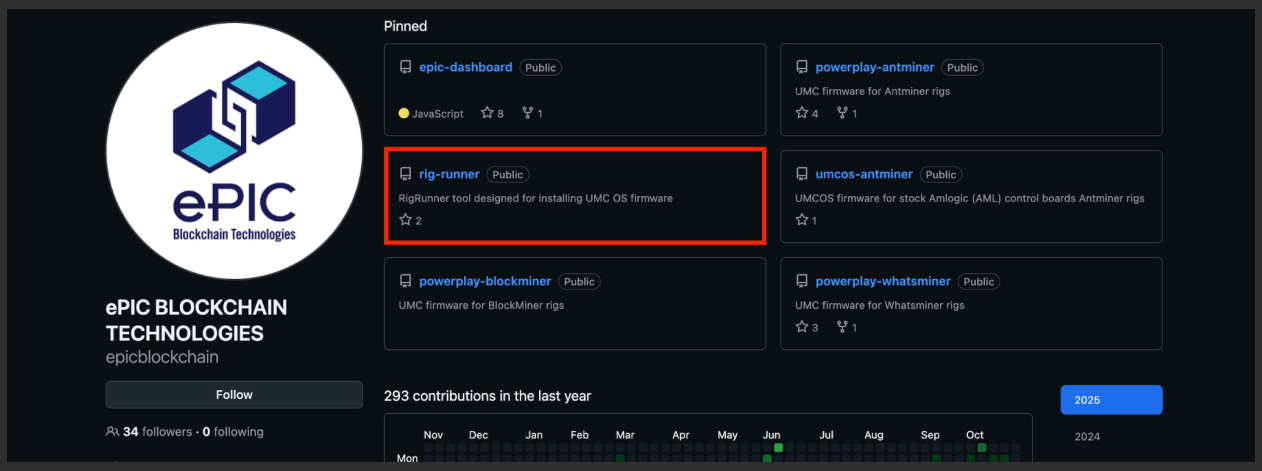
  S19x firmware

- Miner's IP address
- **RigRunner** installed
  - Download **RigRunner** here: https://github.com/epicblockchain/rig-runner
- **UMCOS** firmware downloaded
  - Download UMC OS here: https://github.com/epicblockchain/umcos-antminer

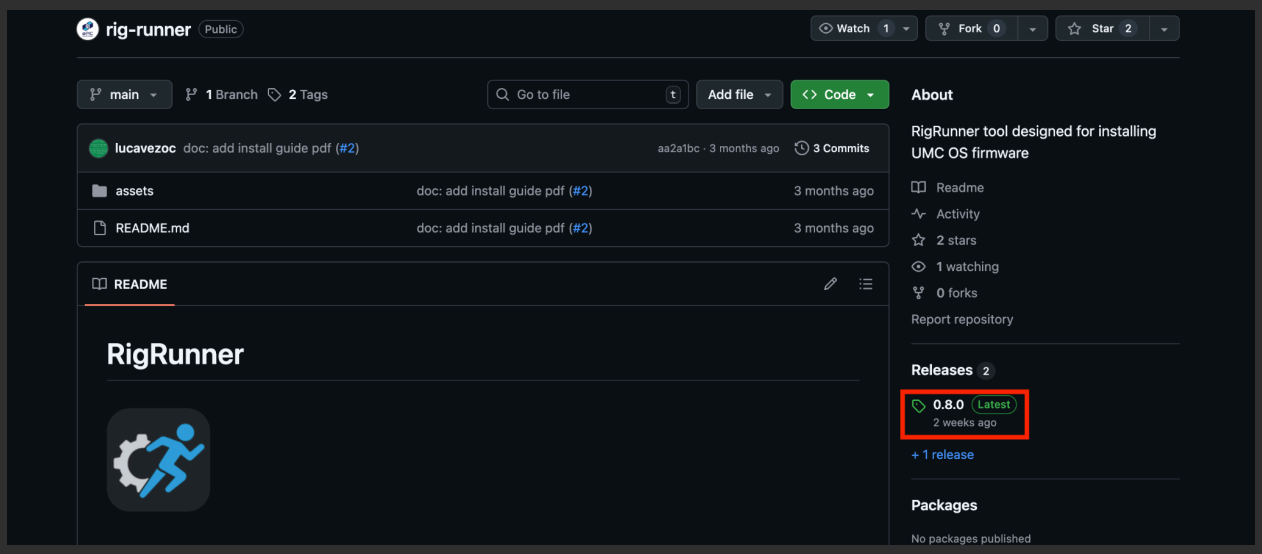
RigRunner

Installation

1. Go to ePIC Github page and click **rig-runner.**



2. Click the latest release on the right-hand panel.

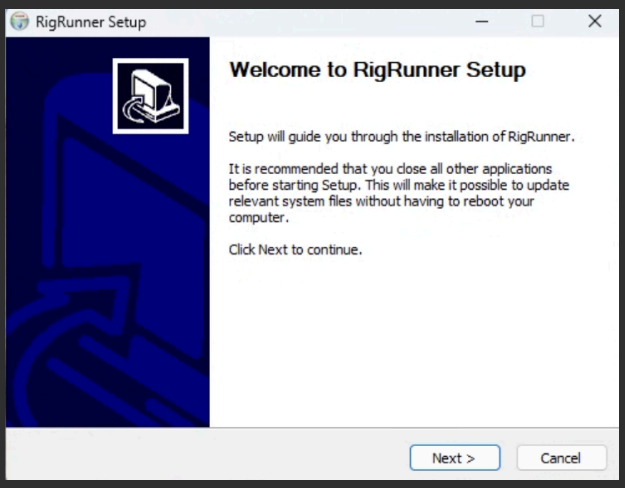


3. Select the installer for your operating system and follow the instructions.

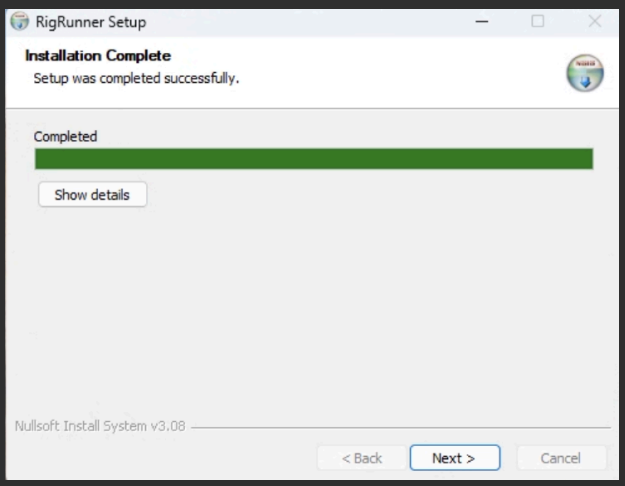
For Windows

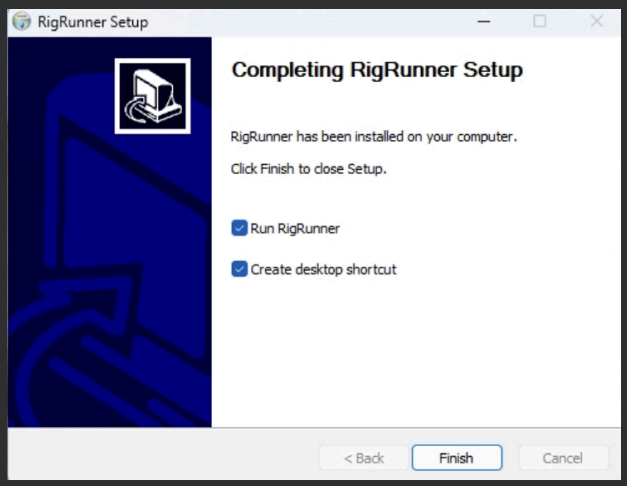
`RigRunner_<version>_<arch>-setup.exe`

1. Click to download the .exe file and run the installer.



2. Follow the instructions to complete RigRunner setup.

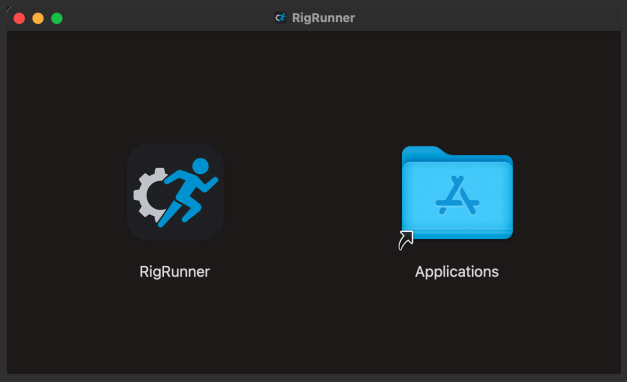




For MacOS

`RigRunner_<version>_<arch>.dmg`

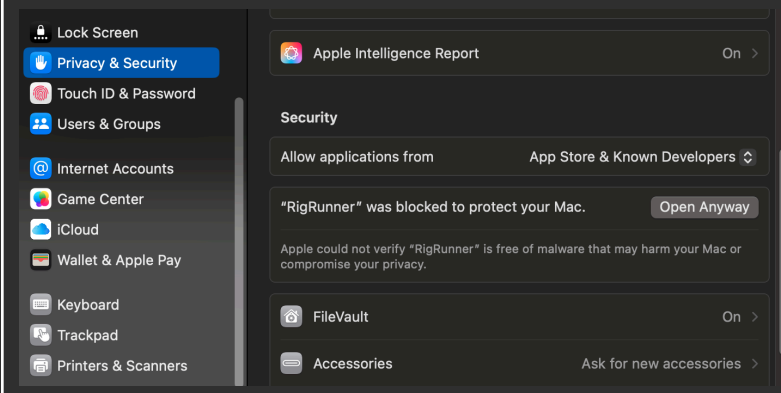
1. Click to download the .dmg file and drag it to the Applications folder.



2. Follow the below instructions.

Click “Done”

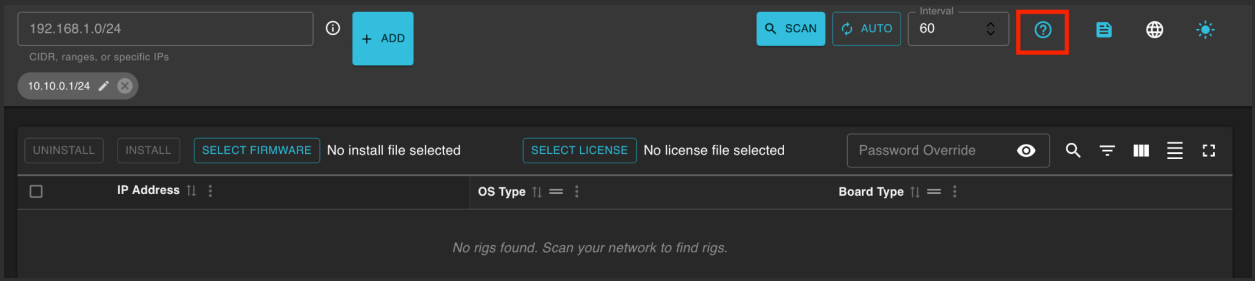
Navigate to System Settings > Privacy & Security > Scroll down and click **“Allow Anyway”**



Open the app again and click “**Open Anyway**”

Instruction

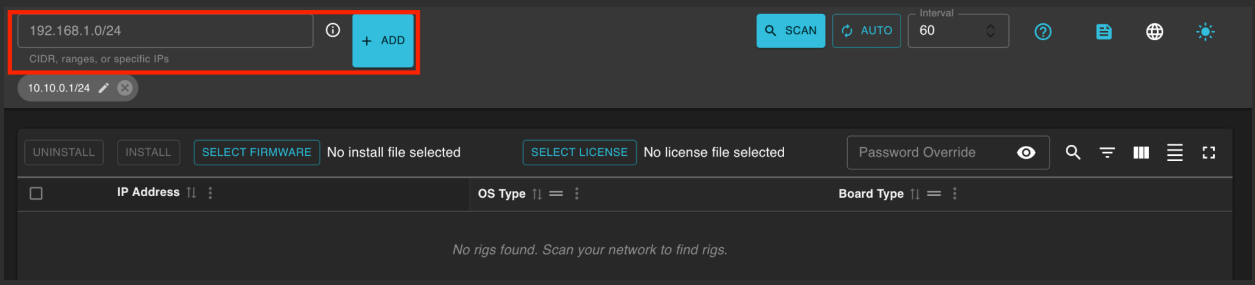
1. Open the **RigRunner** application. Refer to the interactive user guide for more details.



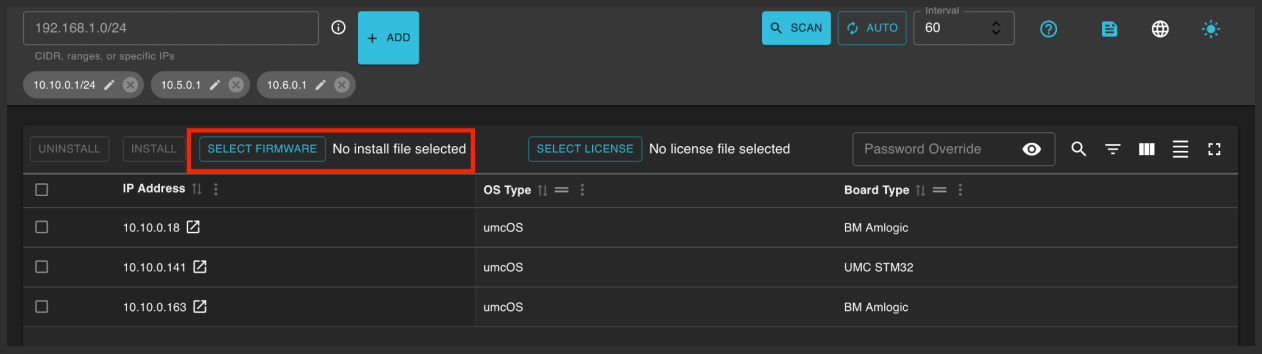
2. Enter your IP address(s) to detect miners on your network.

   For example

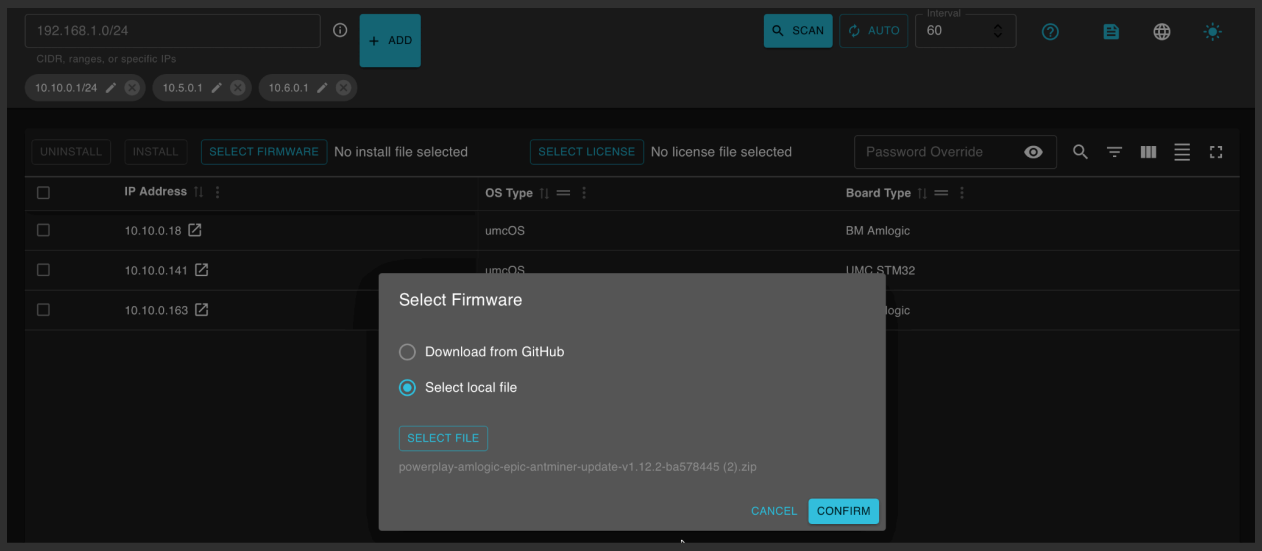
   All 256 addresses: 192.168.1.0**/24**
   Specific range: 192.168.1.**1-254**
   Multiple IPs: 192.168.1.10**,20,30**
   Single IP: 192.168.1.100



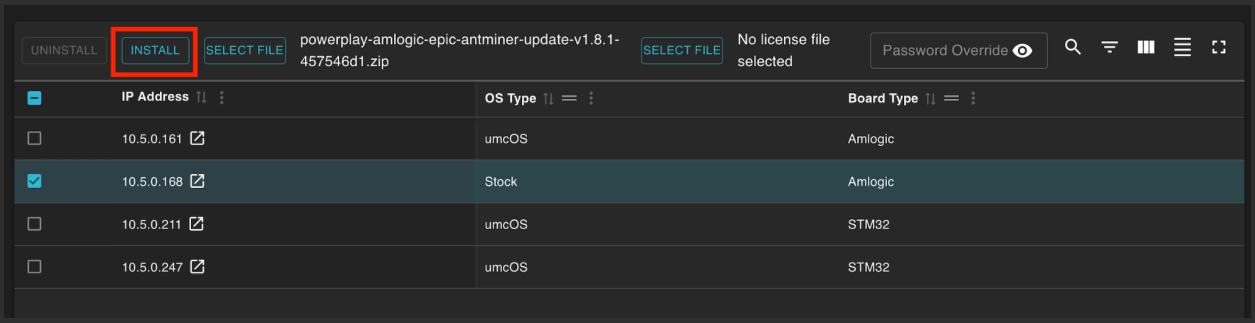
4. Once your miners are detected, click “SELECT FILE” to load the firmware.



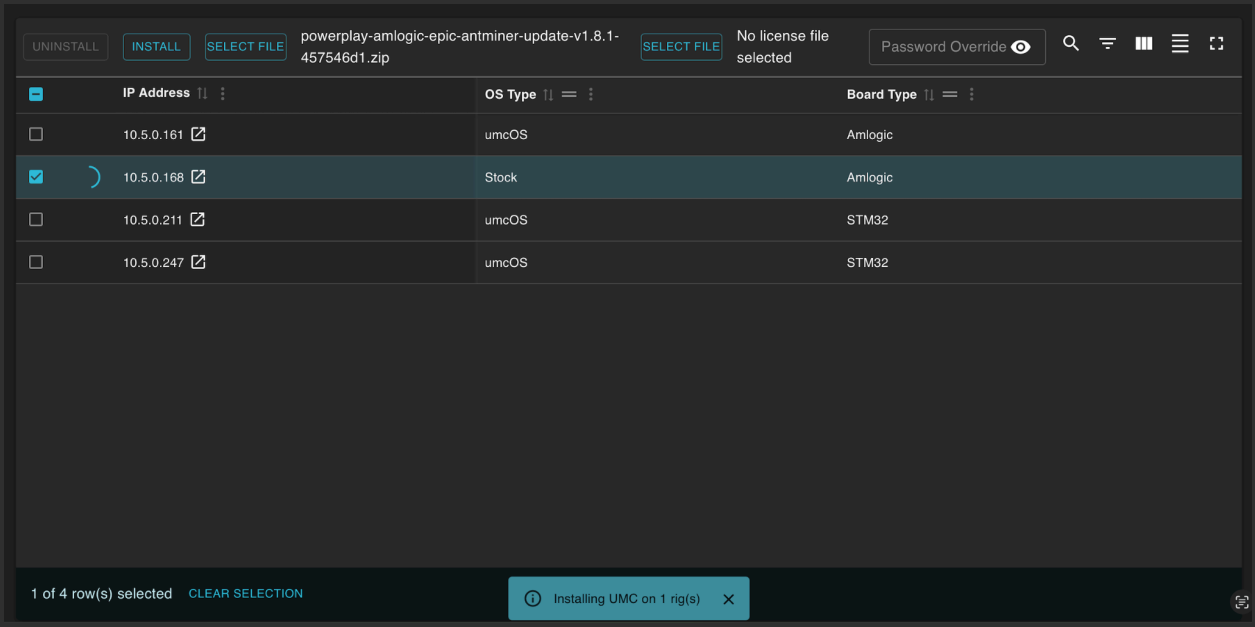
5. Load the **UMC OS** firmware directly from ePIC Github or select the .zip from your local folder.
https://github.com/epicblockchain/umcos-antminer/releases



6. Select the miner(s) with Amlogic and Beagle Bone board type that you wish to install **UMC OS** on, then click “INSTALL”



7. Do not close the application during installation. After the installation is complete, refresh the web page to ensure everything is running properly.



Demo

Click here to watch our demo video on ePIC Github.

ePIC Webdash

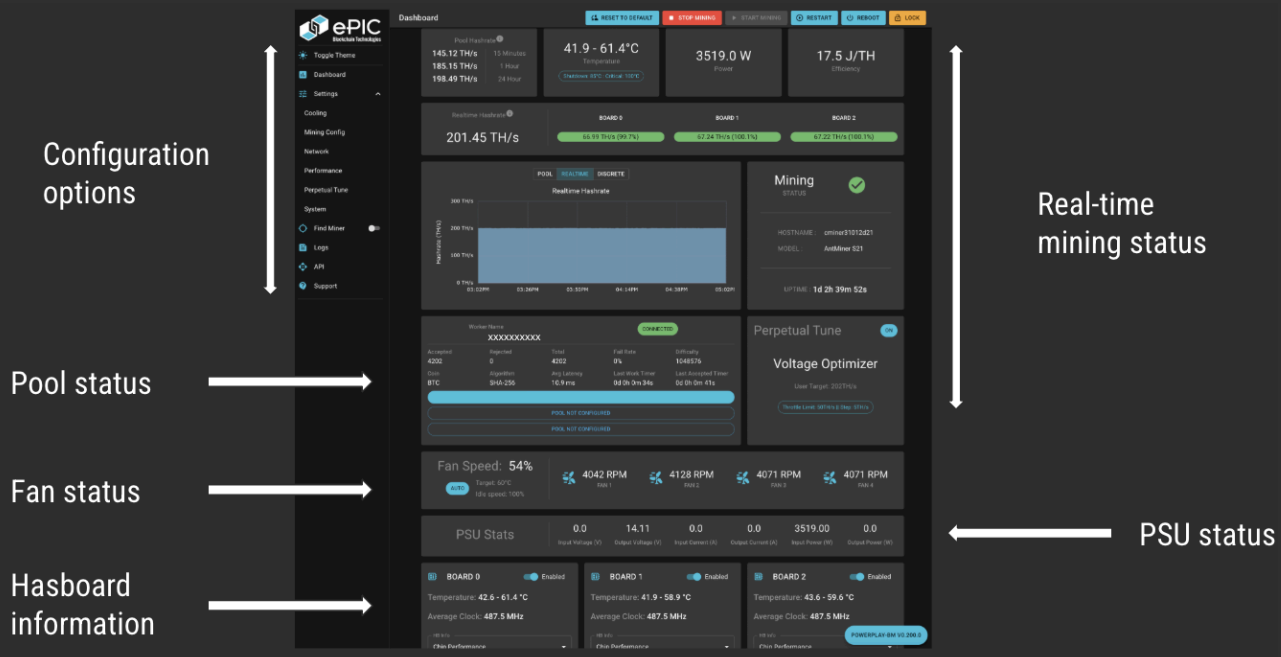
Control Panel

RESET TO DEFAULT	Sets the machine back to stock mode with reinstallation of the system
STOP MINING START MINING	Stops/starts the miner
RESTART	Restarts mining software without rebooting the miner
REBOOT	Shuts down the miner and turns back on
LOCK	Locks/unlocks the Webdash for security

Unlocking Miner: To access Webdash, the default password is ***letmein***

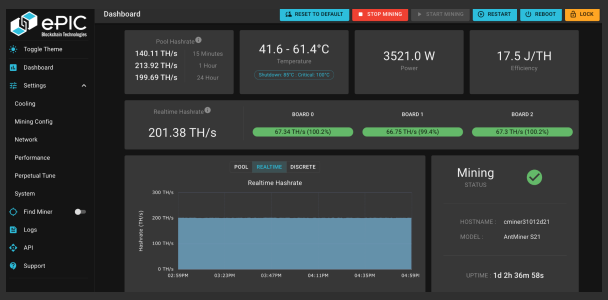
Dashboard

View the status of a miner in real-time

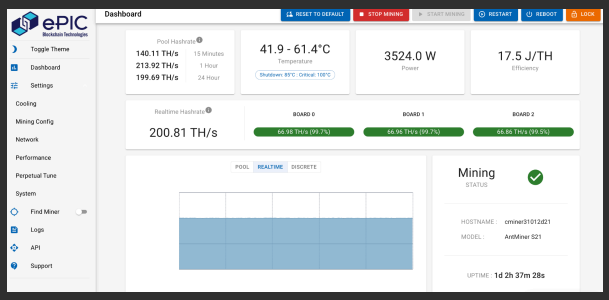


Toggle Theme

Customize Webdash colour scheme to your preference



Dark Mode

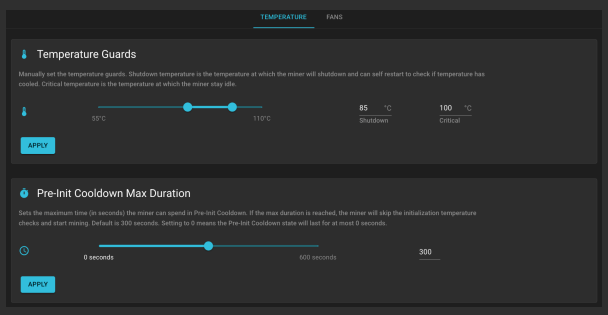


Light Mode

Settings

Configure cooling, tuning and, networking options

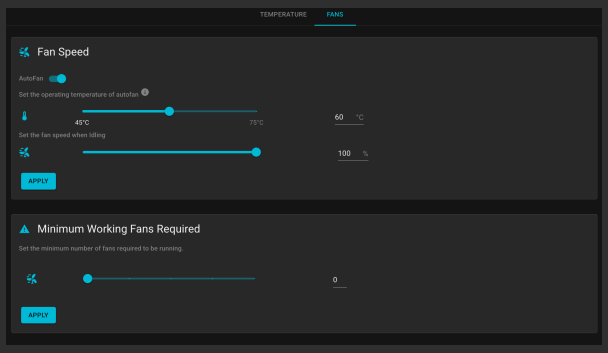
Cooling



TEMPERATURE

Temperature Guards define thermal safety limits. Reaching the shutdown temperature stops mining until the hardware cools and can safely restart. If the critical temperature is reached, the miner stays idle until temperatures stabilize.

Pre-init Cooldown Max Duration limits how long the miner waits for safe temperatures during startup (Default: 300s). If the timer expires, the miner bypasses checks and begins initializing. Set to 0 to skip the wait entirely.

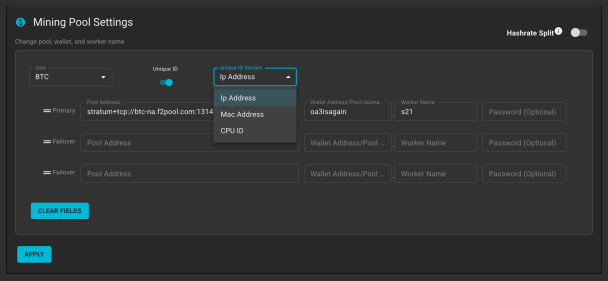


FANS

Manually adjust the fan speed or enable **AutoFan**. The operating temperature can be set for AutoFan and specify the fan speed when idle.

Note: Enabling AutoFan is recommended for better efficiency and safety.

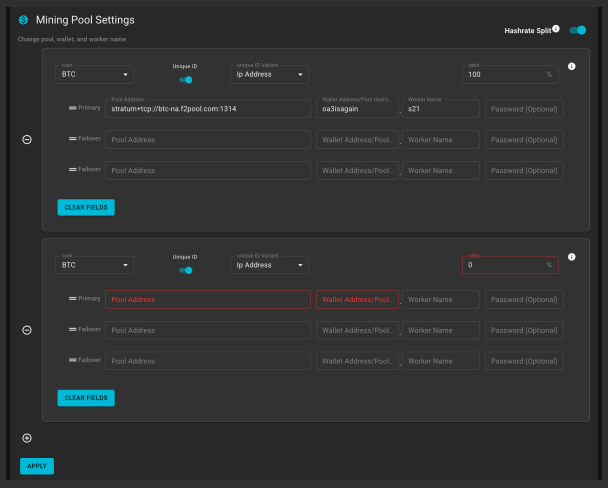
Mining Config



Mining Pool Settings

Fill in the main pool information along with 1-2 backup pools in case of disconnection from the pool.
Then click “Apply”.

“**Unique ID**” will append a unique miner ID to the end of the worker name if enabled, in the format: *Worker_address.Worker_**name-unique_ID***

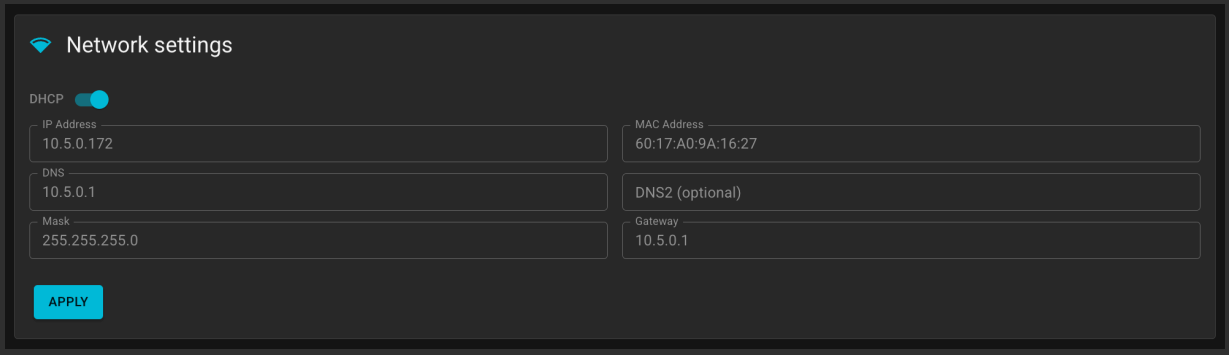


Hashrate Split

Fill in the pool information along with 1-2 backup pools.
Set up to four groups, ensuring the total ratio equals **100**.

Note: If you split three groups equally as 33:33:33, the first group will receive the remainder, making the final distribution 34:33:33 instead.

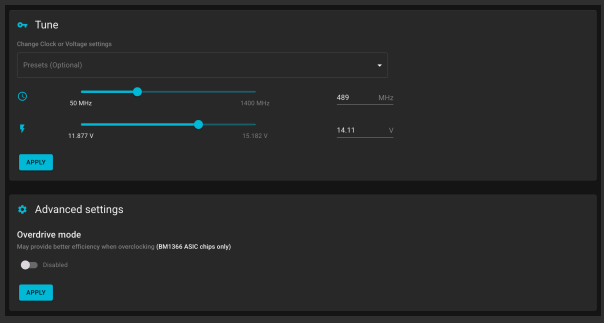
Network



DHCP is enabled by default.
To set a **Static IP,** disable the DHCP toggle and enter the IP address, DNS, Mask and Gateway, then hit "APPLY".

Note: ePIC dashboard(management tool) does NOT support setting static IPs across multiple miners.

Performance



Tune

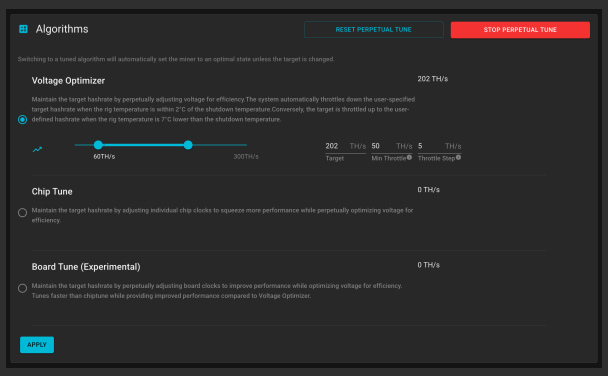
Manually change the clock or **voltage** of the miner. Presets are only available in S19J, S19J Pro, S19J Pro+, S19 XP, S19K Pro, S21, S21 Pro, S21 XP and T21

Advanced Settings

Overdrive Mode provides the advantage of overclocking during Voltage Optimizer.

Only available in S19K Pro and S19 XP

Perpetual Tune

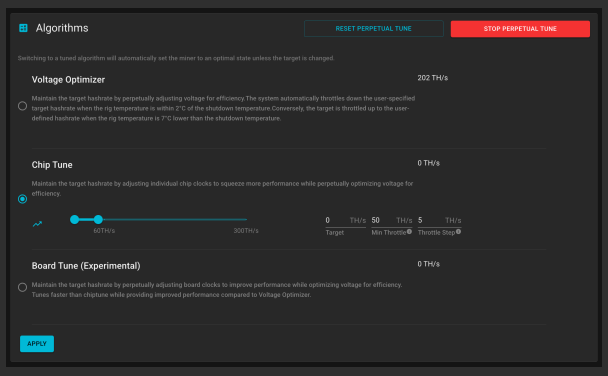


Voltage Optimizer

Set the target hashrate, minimum throttle and throttle steps.

Voltage Optimizer maintains the target hashrate by adjusting **voltage**.
< 30 minutes to tune.

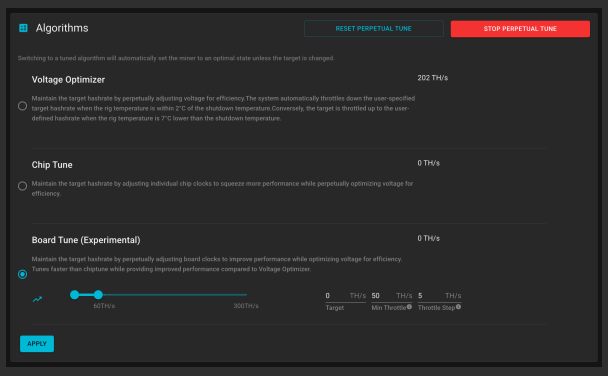
Note: When the miner's temperature is within 2°C of the shutdown temperature, it will throttle down. It will throttle back up once the miner's temperature drops 7°C below the shutdown temperature.



Chip Tune

Set the target hashrate, minimum throttle and throttle steps. Please note that the hashrate on the dashboard will be -10TH.

ChipTune maintains the target hashrate by adjusting **individual chip clocks** while perpetually optimizing voltage.
< 60 minutes to tune.



Board Tune

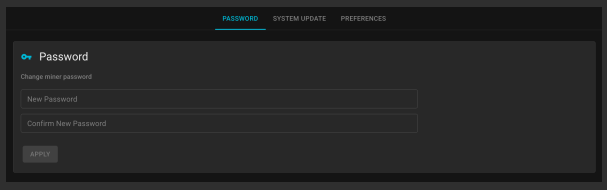
Set the target hashrate, minimum throttle and throttle steps.

Board Tune maintains the target hashrate by adjusting **board clocks** while optimizing voltage
< 45 minutes to tune.

Note: When the miner's temperature is within 2°C of the shutdown temperature, it will throttle down. It will throttle back up once the miner's temperature drops 7°C below the shutdown temperature.

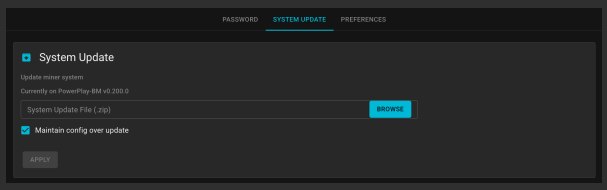
	Voltage Optimizer	ChipTune	Board Tune
Adjusting Variable	Voltage	Individual chip clocks	Board clocks
Duration	< 30min	< 60min	< 45min
Use Case	If you have multiple miners and want long-term stability	If you have a few miners and want to maximize performance in a short period of time	If you have an S21 with mixed hashboards and want to optimize performance

System



PASSWORD

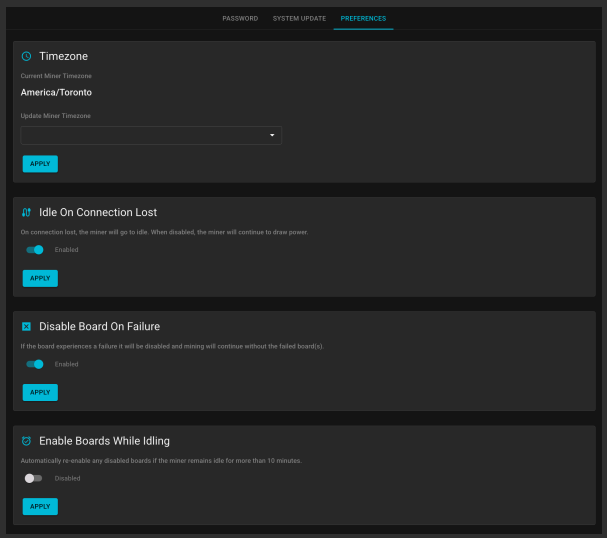
Enter your new password, confirm it then click “APPLY”



SYSTEM UPDATE

1. Download the latest release of the UMC OS firmware from ePIC Github
2. Download the .zip file *powerplay-<board_type)-epic-antminer-update-vxxxxxx.zip*
3. Upload it, then click “APPLY”

Note: The “Maintain config over update” will save your settings across the update.
Your miner will take a few minutes to reboot and recalibrate.



Idle On Connection Lost

Enabled means the miner will be stopped and be put in an idle state until network connection is re-established.
Disable if consistent power draw is required.

Disable Board On Failure

If the board experiences a failure, it will be disabled and mining will continue without the failed board(s).

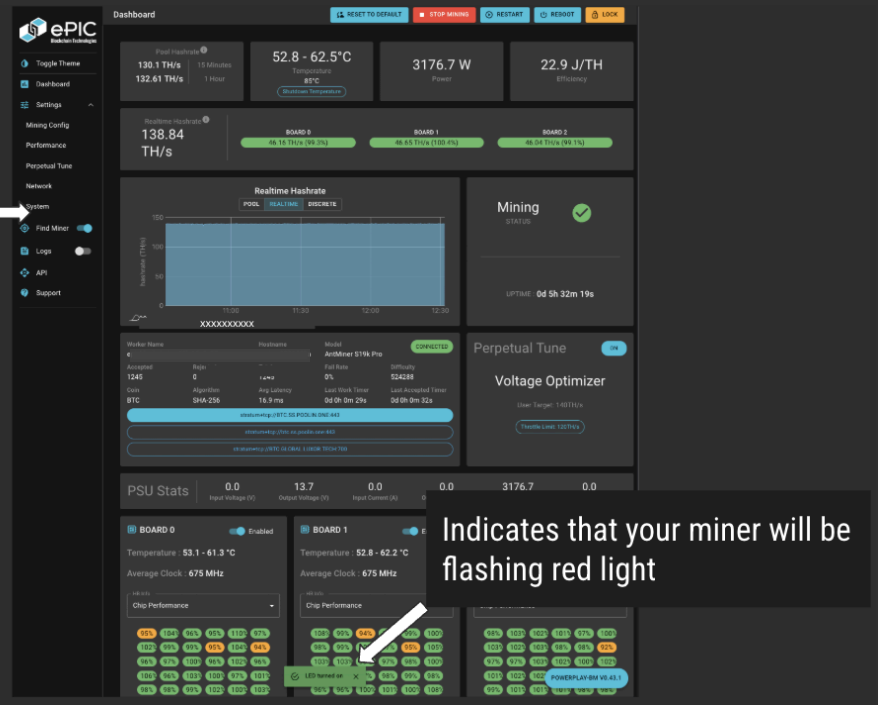
Enable Boards While Idling

If the miner remains idle for more than 10 minutes, it will automatically re-enable any disabled boards.

ePIC Blockchain Technologies

Find Miner

Turn on the "Find Miner" toggle. Your miner will be flashing red light



Logs

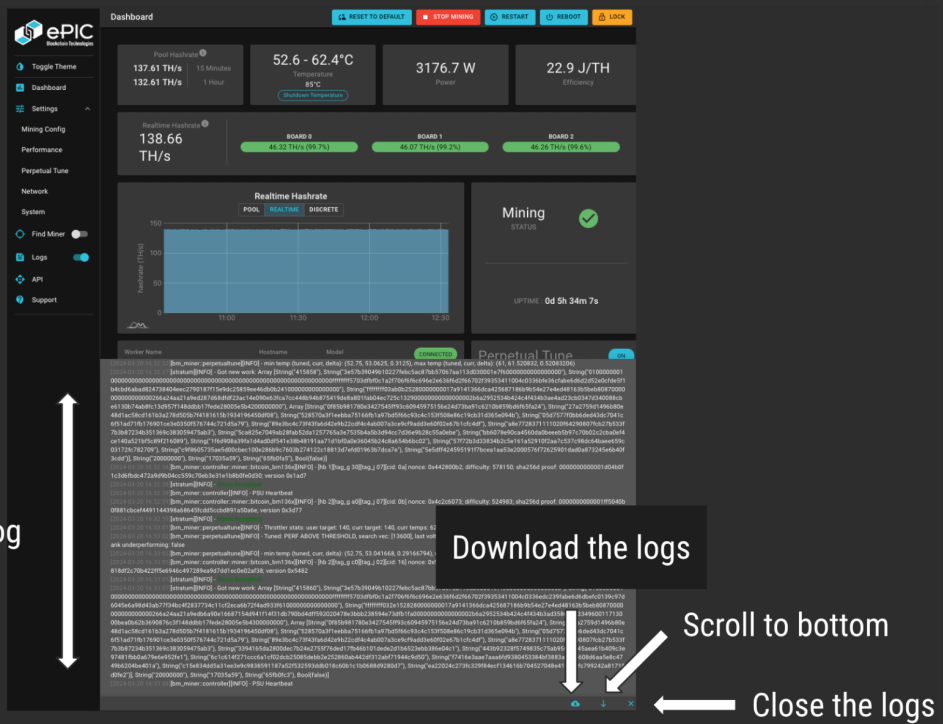
Turn "Logs" toggle on

Real-time log

Download the logs

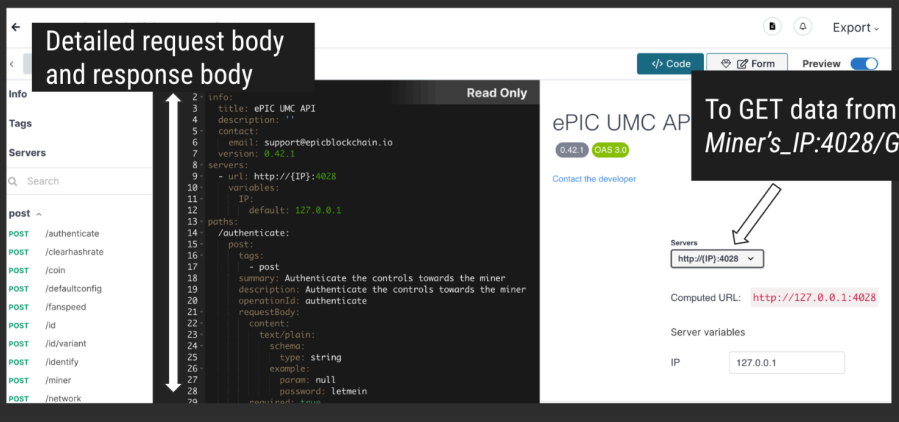
Scroll to bottom

Close the logs

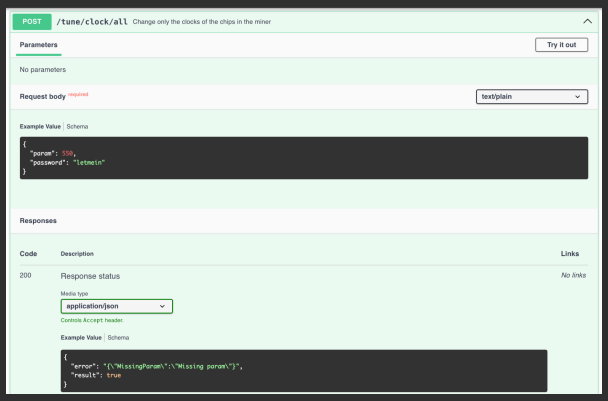
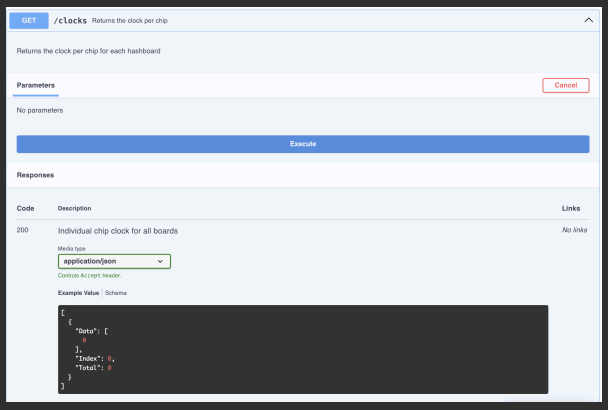


API

POST & GET



Click here for ePIC API Documentation

Example	
	**POST: /tune/clock/all** Changing the clocks of the chips in the miner 1. Click "Try it out" 2. Enter the desired value in the Request Body 3. Click "Execute" 4. Check the Response Body
	**GET: /clocks** Returning the clock per chip 1. Click "Try it out" 2. Click "Execute" 3. Check the Response Body OR 1. Miner's_IP:*4028/clocks* 2. Click "Pretty-print" at the top left corner

FAQ

1. Where can I obtain a license key?
    a. Contact **license@epicblockchain.io** for licensing options.

2. What happens when the license expires?
    a. Mining will automatically default to a set dev fee.

Have a question?

Website
https://epicblockchain.io/support/

Email
Support@epicblockchain.io

Github
https://github.com/epicblockchain

Twitter
https://twitter.com/ePICBlockchain

Telegram
https://t.me/epic_umc