

RigRunner User Guide

ePIC UMC OS

Last updated: February 2026

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Introduction

ePIC UMC OS enables users to install ePIC firmware directly onto an **Amlogic** stock control board, offering a flexible alternative to using ePIC UMC boards. This approach allows broader access to ePIC's advanced firmware features while maintaining compatibility with existing equipment without physical access.

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

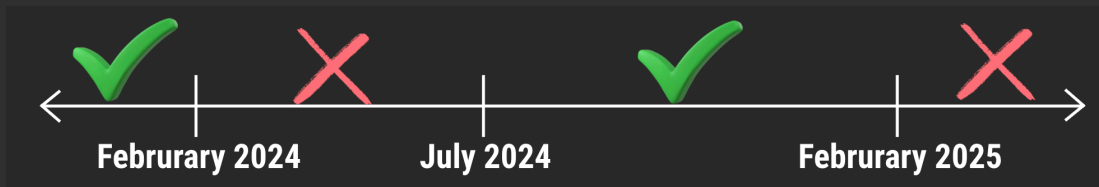
- Compatible stock firmware versions are as follows:

Works

- February 2024 or prior
- July 2024 or newer up to February 2025

Does NOT work

- March - June 2024



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

[S21x firmware](#)

[S19x firmware](#)

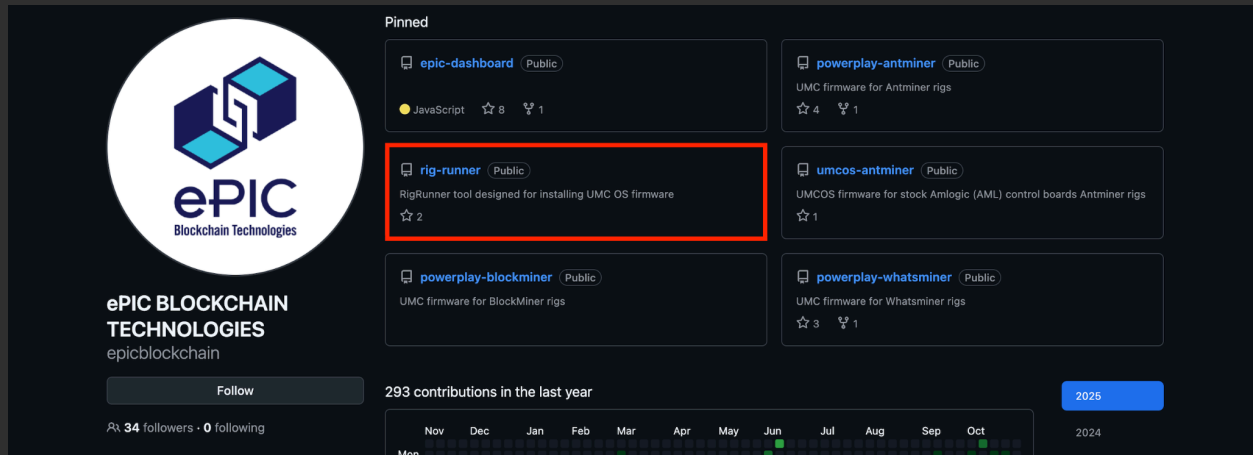
- Miner's IP address
- **RigRunner** installed
 - Download **RigRunner** here: <https://github.com/epicblockchain/rig-runner>
- **UMCOS** firmware downloaded
 - Download UMC OS here: <https://github.com/epicblockchain/umcos-antminer>

RigRunner

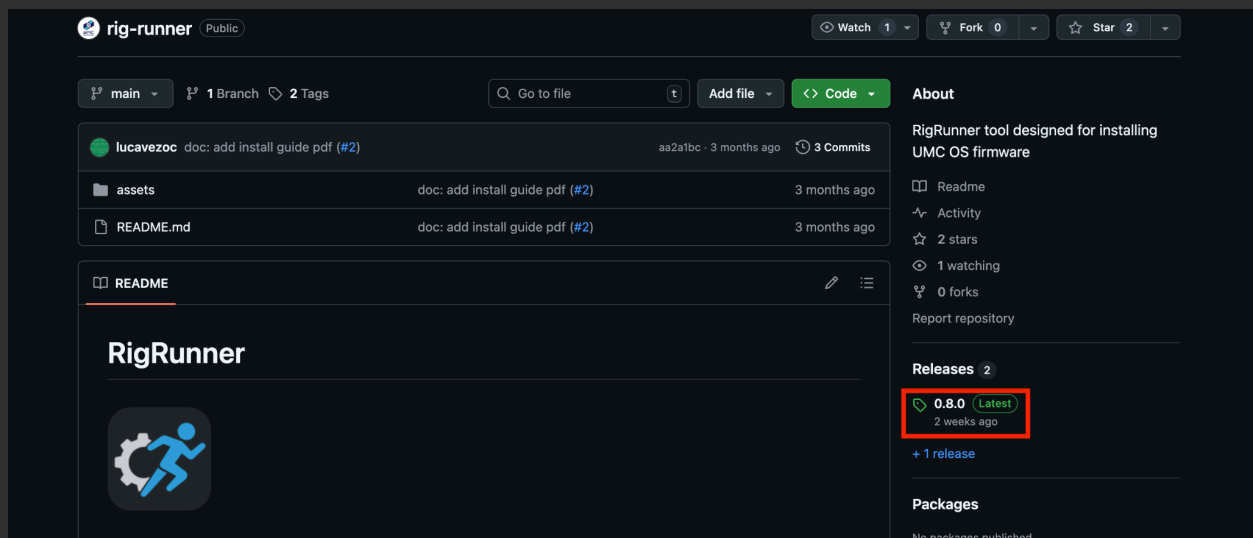


Installation

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.

Releases / 0.8.0

0.8.0 Latest Compare

epicblockchain released this 2 weeks ago 0.8.0 aa2a1bc

doc: add install guide pdf (#2)

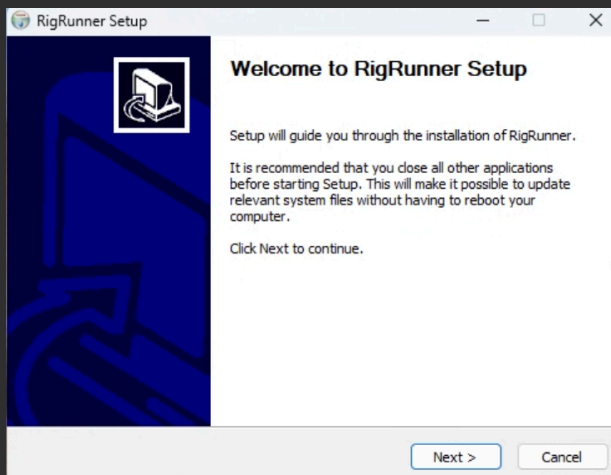
▼ **Assets** 6

RigRunner_0.8.0_amd64.deb	sha256:6e6cbb9f9f51dee3480b741877...		10.2 MB	2 weeks ago
RigRunner_0.8.0_x64-setup.exe	sha256:ed2e72a30eb0687b55855da632...		6.46 MB	2 weeks ago
RigRunner_0.8.0_x64.dmg	sha256:fec80654dfe81046f3713e0902...		11.2 MB	2 weeks ago
RigRunner_0.8.0_x64_en-US.msi	sha256:c8946de755de70473475945c01...		9.09 MB	2 weeks ago
Source code (zip)				Nov 3, 2025
Source code (tar.gz)				Nov 3, 2025

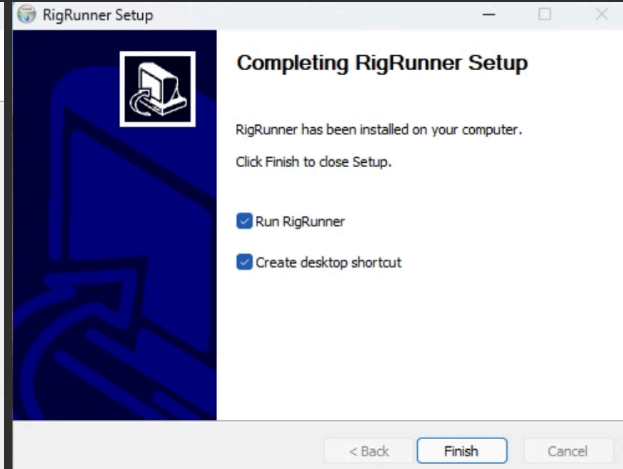
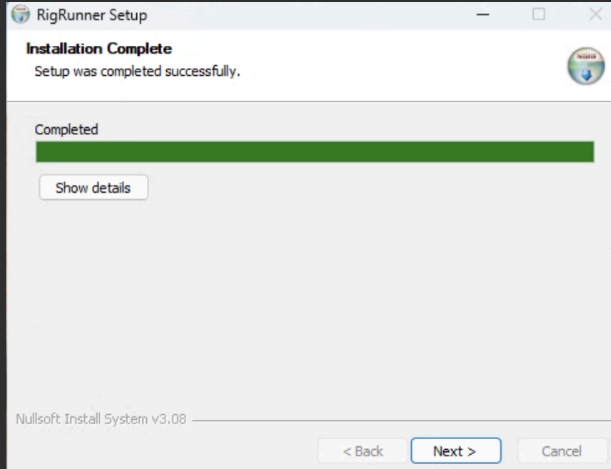
For Windows

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

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



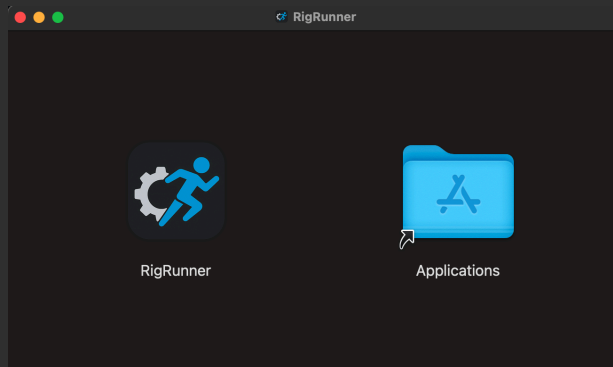
2. Follow the instructions to complete RigRunner setup.



For MacOS

RigRunner_<version>_<arch>.dmg

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

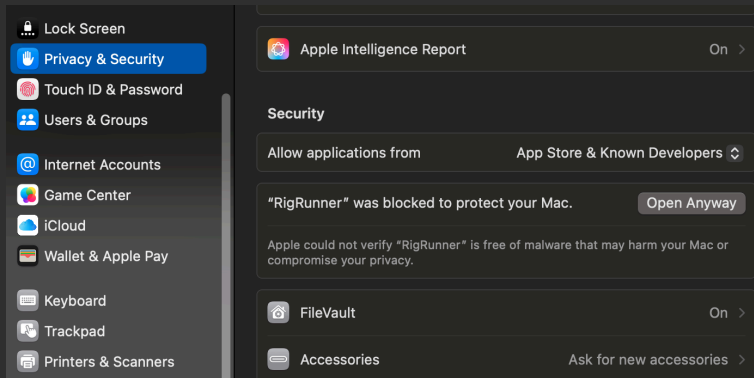


2. Follow the below instructions.

Click "Done"



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

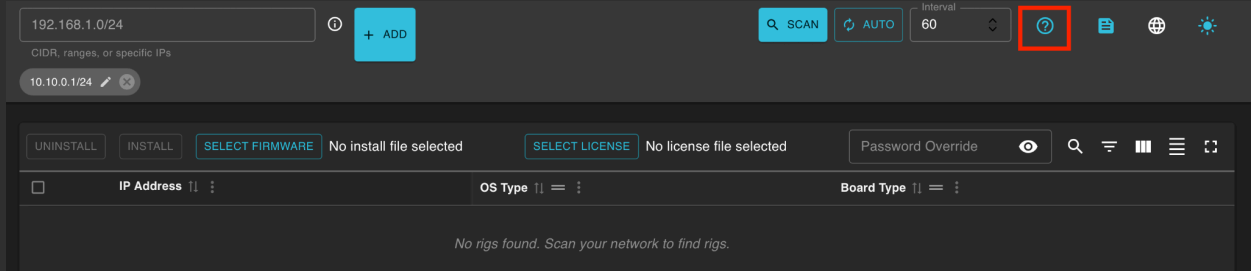


Open the app again and click **"Open Anyway"**



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.

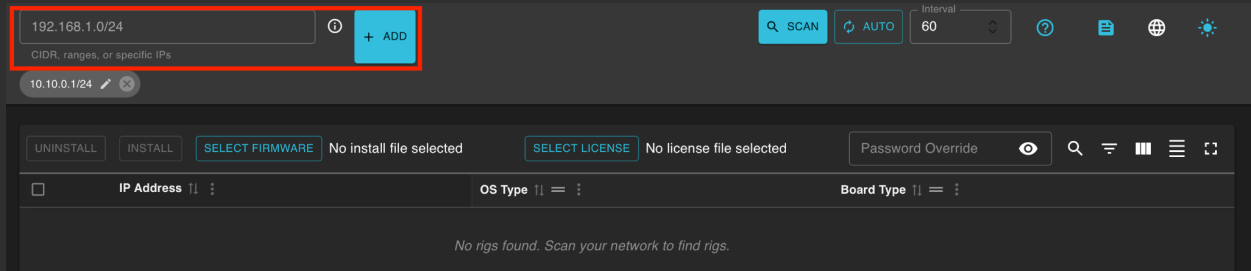
For example

All 256 addresses: 192.168.1.0/24

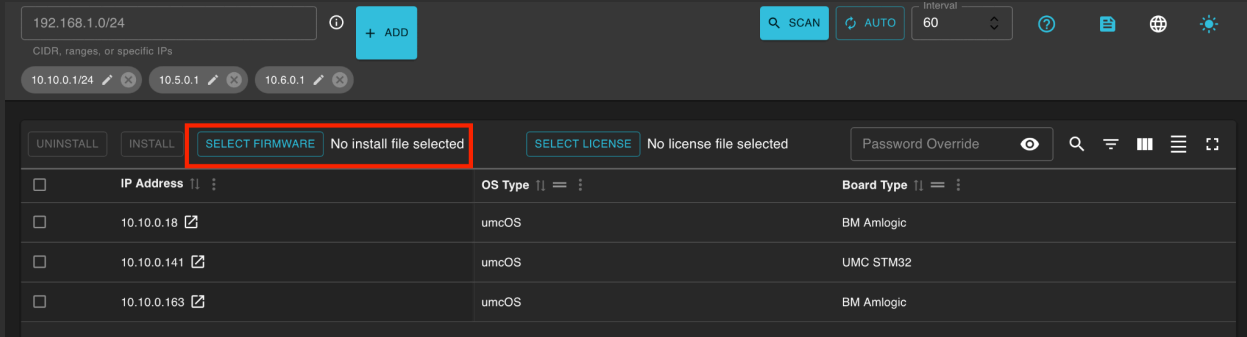
Specific range: 192.168.1.1-254

Multiple IPs: 192.168.1.10,20,30

Single IP: 192.168.1.100



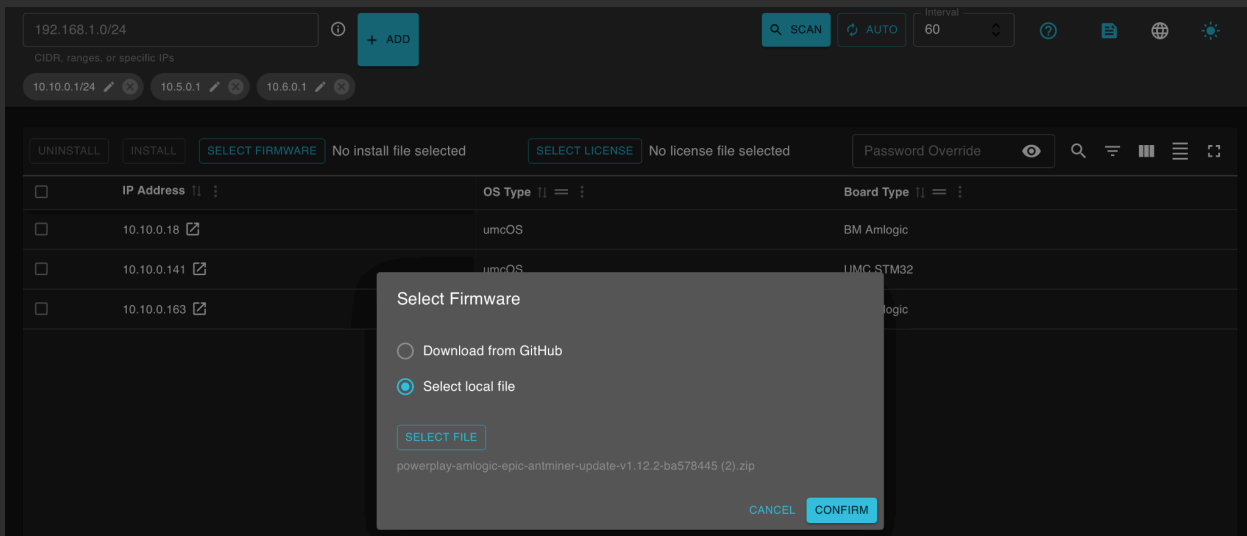
4. Once your miners are detected, click “SELECT FILE” to load the firmware.



The screenshot shows the ePIC interface with a top bar containing a search input (192.168.1.0/24), a '+ ADD' button, and buttons for 'SCAN', 'AUTO', and 'Interval' (set to 60). Below the top bar, there are three tabs: 'UNINSTALL', 'INSTALL', and 'SELECT FIRMWARE' (which is highlighted with a red box). To the right of the 'SELECT FIRMWARE' tab, it says 'No install file selected'. Further right, there is a 'SELECT LICENSE' button and 'No license file selected'. Below the tabs, there is a table with three columns: 'IP Address', 'OS Type', and 'Board Type'. The table contains three rows of data:

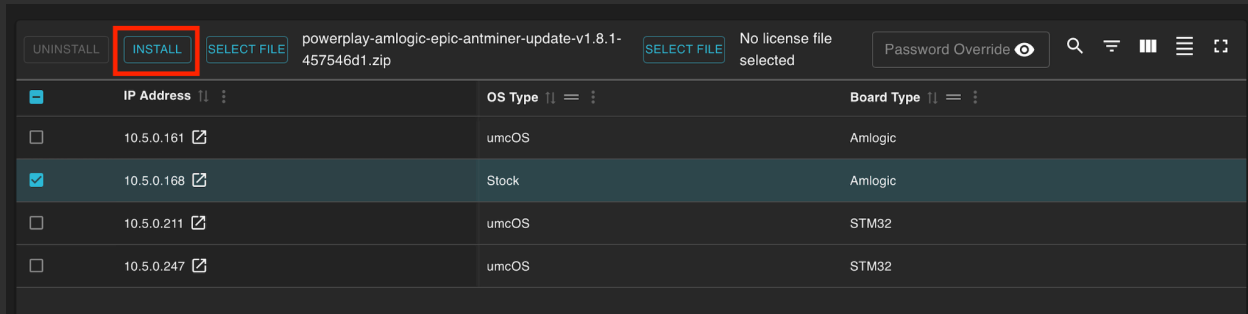
IP Address	OS Type	Board Type
10.10.0.18	umcOS	BM Amlogic
10.10.0.141	umcOS	UMC STM32
10.10.0.163	umcOS	BM Amlogic

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>



The screenshot shows the same ePIC interface as before, but with a 'Select Firmware' dialog box open in the center. The dialog box has two radio buttons: 'Download from GitHub' (which is selected) and 'Select local file'. Below the radio buttons, there is a 'SELECT FILE' button. At the bottom of the dialog box, there is a file path: 'powerplay-amlogic-epic-antminer-update-v1.12.2-ba578445 (2).zip'. At the bottom right of the dialog box, there are 'CANCEL' and 'CONFIRM' buttons.

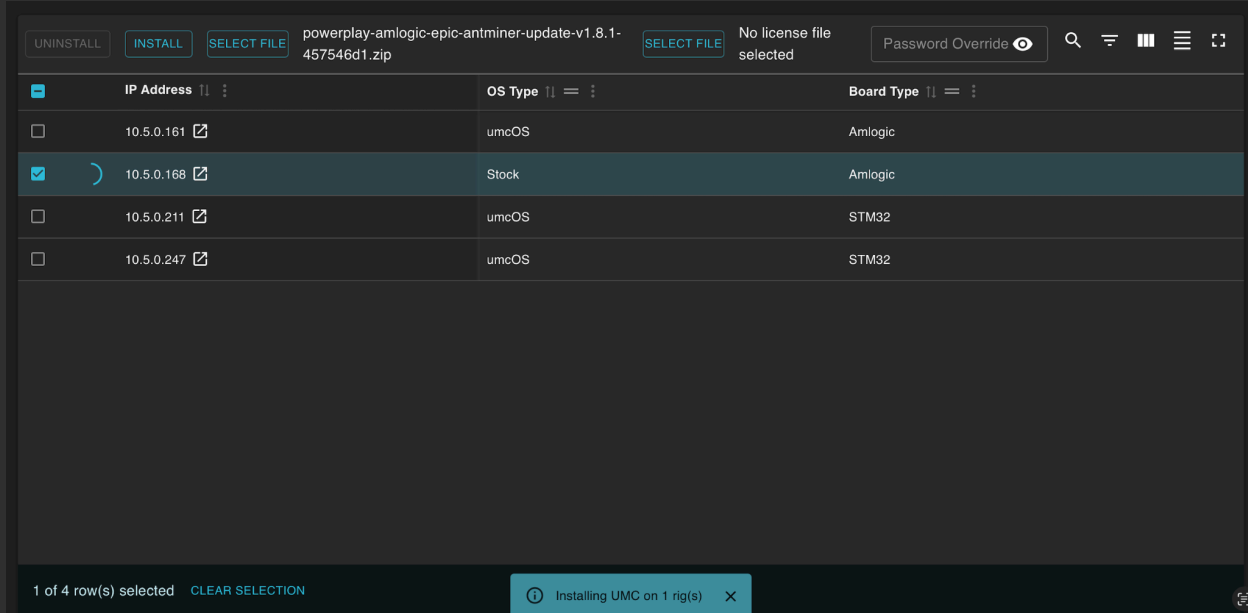
- Select the miner(s) with Amlogic board type that you wish to install **UMC OS** on, then click "INSTALL"



UNINSTALL **INSTALL** SELECT FILE powerplay-amlogic-epic-antminer-update-v1.8.1-457546d1.zip SELECT FILE No license file selected Password Override

	IP Address	OS Type	Board Type
<input type="checkbox"/>	10.5.0.161	umcOS	Amlogic
<input checked="" type="checkbox"/>	10.5.0.168	Stock	Amlogic
<input type="checkbox"/>	10.5.0.211	umcOS	STM32
<input type="checkbox"/>	10.5.0.247	umcOS	STM32

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



UNINSTALL **INSTALL** SELECT FILE powerplay-amlogic-epic-antminer-update-v1.8.1-457546d1.zip SELECT FILE No license file selected Password Override

	IP Address	OS Type	Board Type
<input type="checkbox"/>	10.5.0.161	umcOS	Amlogic
<input checked="" type="checkbox"/>	10.5.0.168	Stock	Amlogic
<input type="checkbox"/>	10.5.0.211	umcOS	STM32
<input type="checkbox"/>	10.5.0.247	umcOS	STM32

1 of 4 row(s) selected CLEAR SELECTION







Installing UMC on 1 rig(s)

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***

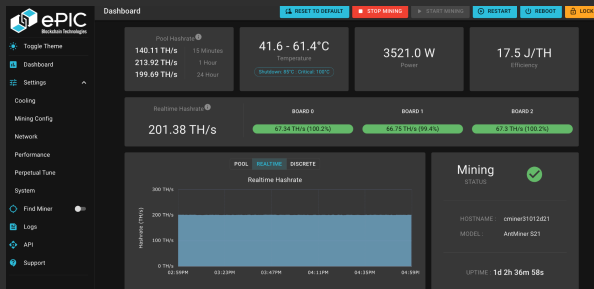
Dashboard

View the status of a miner in real-time

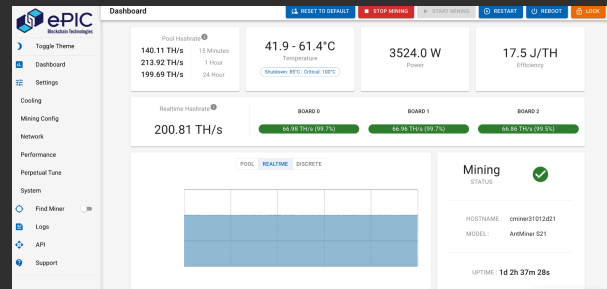


Toggle Theme

Customize Webdash colour scheme to your preference



Dark Mode

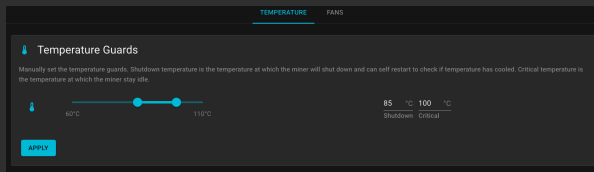


Light Mode

Settings

Configure cooling, tuning and, networking options

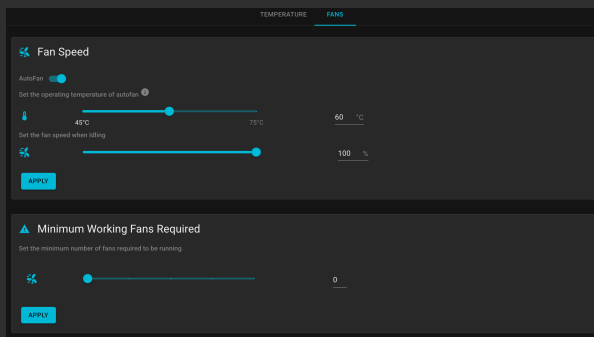
Cooling



TEMPERATURE

When the shutdown temperature is reached, the miner will throttle down and restart automatically. When the critical temperature is reached, the miner will remain idle.

Note: It is recommended to keep the shutdown temperature below 95°C for safety



FANS

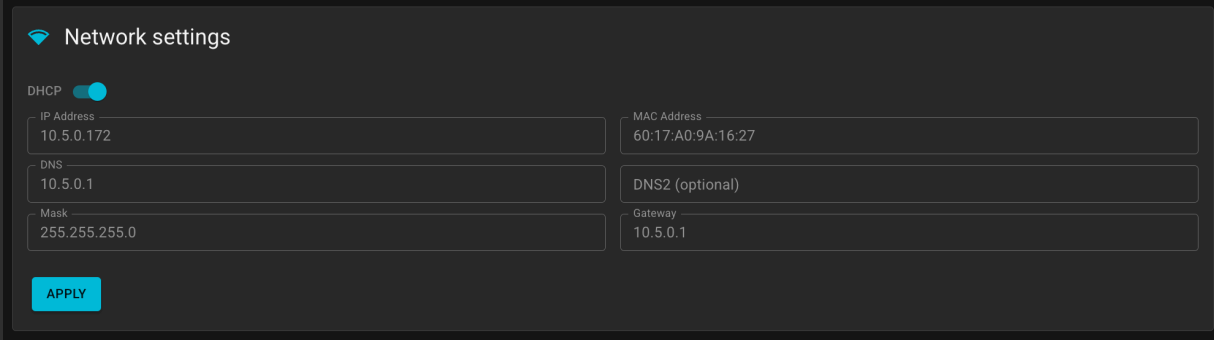
Manually adjust the fan speed or enable **AutoFan**. The operating temperature can be set for AutoFan and specify the fan speed when idle.

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

"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*

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



Network settings

DHCP ☒

IP Address: 10.5.0.172

MAC Address: 60:17:A0:9A:16:27

DNS: 10.5.0.1

DNS2 (optional):

Mask: 255.255.255.0

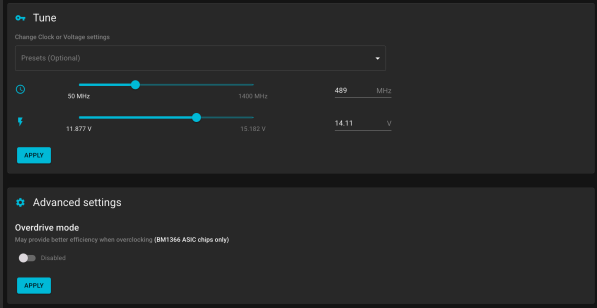
Gateway: 10.5.0.1

APPLY

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

Change Clock or Voltage settings

Presets (Optional)

50 MHz 1800 MHz 489 MHz

11.877 V 15.182 V 14.11 V

APPLY

Advanced settings

Overdrive mode

May provide better efficiency when overclocking (BM1366 ASIC chips only)

☒ Disabled

APPLY

Tune

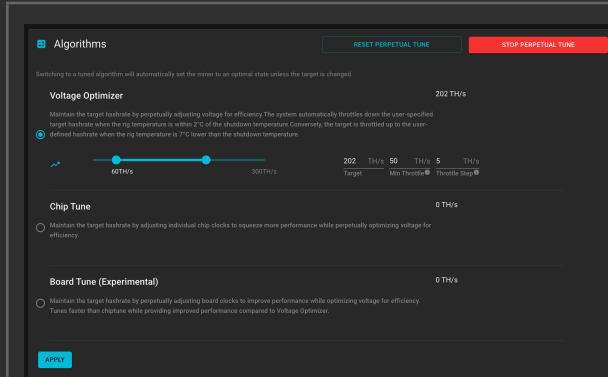
Manually change the clock or **voltage** of the miner. Presets are only available in S19J, S19J Pro, S19J Pro+, S19 XP, S19K Pro, S21, S21 Pro, S21 XP and T21

Advanced Settings

Overdrive Mode provides the advantage of overclocking during Voltage Optimizer.

Only available in S19K Pro and S19 XP

Perpetual Tune



Algorithms [RESET PERPETUAL TUNE] [STOP PERPETUAL TUNE]

Switching to a tuned algorithm will automatically set the miner to an optimal state unless the target is changed.

Voltage Optimizer 202 TH/s

Maintain the target hashrate by perpetually adjusting voltage for efficiency. The system automatically throttles down the user-specified target hashrate when the rig temperature is within 2°C of the shutdown temperature. Conversely, the target is throttled up to the user-defined hashrate when the rig temperature is 7°C lower than the shutdown temperature.

60TH/s 300TH/s 202 TH/s 50 TH/s 5 TH/s
Target Min Throttle Throttle Step

Chip Tune 0 TH/s

Maintain the target hashrate by adjusting individual chip clocks to squeeze more performance while perpetually optimizing voltage for efficiency.

Board Tune (Experimental) 0 TH/s

Maintain the target hashrate by perpetually adjusting board clocks to improve performance while optimizing voltage for efficiency. Tunes faster than chip tune while providing improved performance compared to Voltage Optimizer.

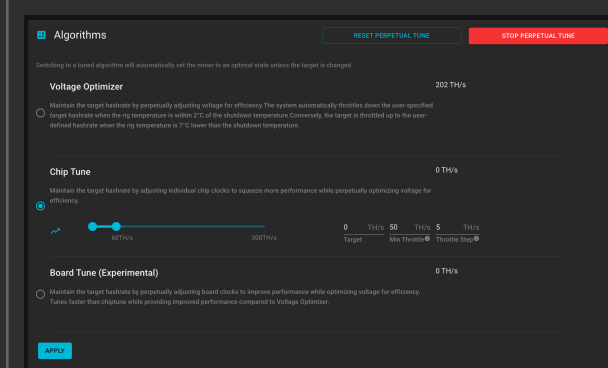
[APPLY]

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.



Algorithms [RESET PERPETUAL TUNE] [STOP PERPETUAL TUNE]

Switching to a tuned algorithm will automatically set the miner to an optimal state unless the target is changed.

Voltage Optimizer 202 TH/s

Maintain the target hashrate by perpetually adjusting voltage for efficiency. The system automatically throttles down the user-specified target hashrate when the rig temperature is within 2°C of the shutdown temperature. Conversely, the target is throttled up to the user-defined hashrate when the rig temperature is 7°C lower than the shutdown temperature.

Chip Tune 0 TH/s

Maintain the target hashrate by adjusting individual chip clocks to squeeze more performance while perpetually optimizing voltage for efficiency.

0 TH/s 300TH/s 0 TH/s 50 TH/s 5 TH/s
Target Min Throttle Throttle Step

Board Tune (Experimental) 0 TH/s

Maintain the target hashrate by perpetually adjusting board clocks to improve performance while optimizing voltage for efficiency. Tunes faster than chip tune while providing improved performance compared to Voltage Optimizer.

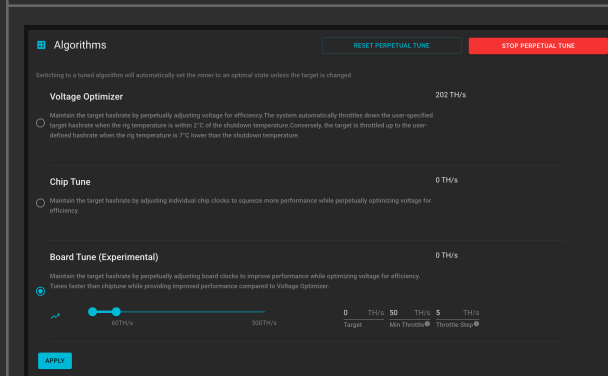
[APPLY]

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.

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.



Algorithms [RESET PERPETUAL TUNE] [STOP PERPETUAL TUNE]

Switching to a tuned algorithm will automatically set the miner to an optimal state unless the target is changed.

Voltage Optimizer 202 TH/s

Maintain the target hashrate by perpetually adjusting voltage for efficiency. The system automatically throttles down the user-specified target hashrate when the rig temperature is within 2°C of the shutdown temperature. Conversely, the target is throttled up to the user-defined hashrate when the rig temperature is 7°C lower than the shutdown temperature.

Chip Tune 0 TH/s

Maintain the target hashrate by adjusting individual chip clocks to squeeze more performance while perpetually optimizing voltage for efficiency.

Board Tune (Experimental) 0 TH/s

Maintain the target hashrate by perpetually adjusting board clocks to improve performance while optimizing voltage for efficiency. Tunes faster than chip tune while providing improved performance compared to Voltage Optimizer.

60TH/s 300TH/s 0 TH/s 50 TH/s 5 TH/s
Target Min Throttle Throttle Step

[APPLY]

Board Tune

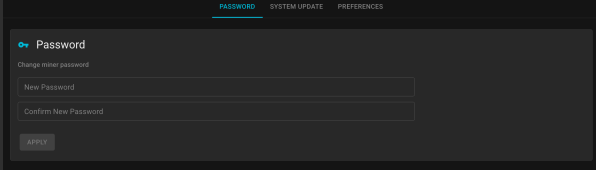
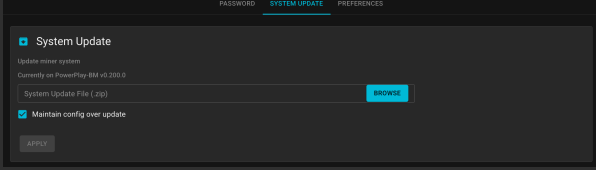
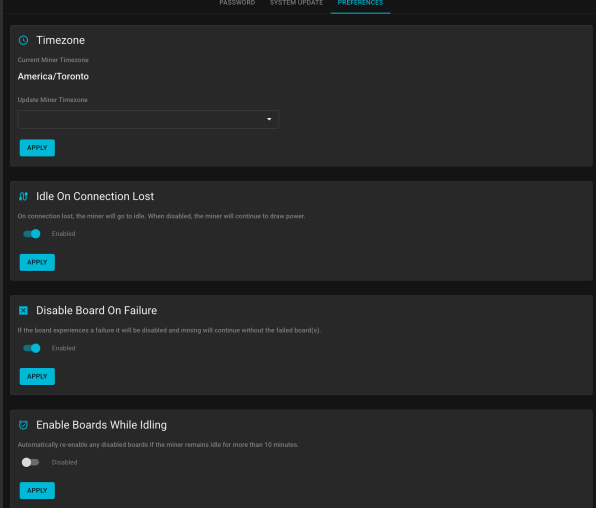
Set the target hashrate, minimum throttle and throttle steps.

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

	<h3>PASSWORD</h3> <p>Enter your new password, confirm it then click “APPLY”</p>
	<h3>SYSTEM UPDATE</h3> <ol style="list-style-type: none"> 1. Download the latest release of the UMC OS firmware from ePIC Github 2. Download the .zip file <i>powerplay-amlogic-epic-antminer-update-vxxxxxx.zip</i> 3. Upload it, then click “APPLY” <p>Note: The “Maintain config over update” will save your settings across the update. Your miner will take a few minutes to reboot and recalibrate.</p>
	<h3>Idle On Connection Lost</h3> <p>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.</p> <h3>Disable Board On Failure</h3> <p>If the board experiences a failure, it will be disabled and mining will continue without the failed board(s).</p> <h3>Enable Boards While Idling</h3> <p>If the miner remains idle for more than 10 minutes, it will automatically re-enable any disabled boards.</p>

Find Miner

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



Indicates that 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

Detailed request body and response body

To GET data from a server, Miner's_IP:4028/GET_command

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