



Your own Bitcoin solo-mining pool

User Manual for Umbrel

Installing and operating dvb-WarpPool on umbrelOS
Version 1.24.0 · Edition July 2026

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1 · What is dvb-WarpPool?

dvb-WarpPool turns your Umbrel into your own Bitcoin mining pool. Run it **privately** — your miners point at your Umbrel and **every block reward — and every transaction fee — goes straight to your own Bitcoin address** — or open it up as a **public 0% pool** where any visiting miner mines to *their* own address. Either way: no pool operator, no pool fee, no account.

Two ways to run it. This manual covers the common case — a private solo pool for your own rigs or a fixed group of friends. To run an **open, non-custodial 0% pool** that strangers can point their miners at (per-worker payouts, privacy controls, public hardening), see the separate **Public 0% Solo Pool Operator Manual** at docs.warppool.org/public-pool-guide.html.

It is a **solo pool**: your miners work together on the same block template built from your own Bitcoin node. When one of them finds a block, the full reward is paid to the payout address you configure. Until then, nothing leaves your machine.

Why run your own pool?

- **Full self-custody.** Rewards are paid by the Bitcoin network directly to your address — the pool never holds your coins.
- **Privacy.** Your hashrate, your miners and your work never touch a third-party server.
- **Your node, your rules.** Blocks are built from your own mempool and broadcast by your own Bitcoin node.
- **A real dashboard.** Live hashrate, per-miner statistics, hardware detection, energy cost, notifications and more.

Good to know: Solo mining is a lottery. A block is found rarely and unpredictably, in proportion to your share of the total network hashrate. dvb-WarpPool does not change those odds — it gives you a private, transparent, self-hosted way to take part, and pays you directly when luck strikes.

A few quirks worth knowing up front

This manual is written for a complete beginner. Before we dive in, three small things will save you confusion later — they come up again in context:

- **Some menu labels don't match the page title.** The menu items **Workers**, **Miners** and **Devices** lead to three different pages — and two of them are titled "Miners". Always go by the *menu label*, not the page heading. Chapter 7 explains each one.
- **Comfort settings are per-device.** Language, screensaver, your personal card layout and browser notifications are stored in *this* browser only — set them again on each device you use.
- **There are four size profiles:** Small, Medium, Large and Enterprise. (If you ever see the internal name "gross", that is simply the "Large" profile.)

About the screenshots. The screenshots in this manual come from a local test pool with simulated miners and sample data. The exact numbers, worker names, block counts and statuses are illustrative — a real pool shows your own figures (and, unlike a quick test run, far fewer rejected blocks).

2 · Before you start

You need four things. All of them are quick to check.

Requirement	Details
An Umbrel	umbrelOS on an Umbrel Home, a Raspberry Pi, or any supported machine, reachable on your local network.
The Bitcoin Node app	Install the official Bitcoin Node app from the Umbrel App Store first and let it finish syncing. dvb-WarpPool connects to it automatically — you do not configure anything by hand.
A Bitcoin address	A receive address from a wallet you control (for example <code>bc1q...</code>). This is where a found block pays out. Never use a private key — only a public receive address.
A miner	Any Bitcoin ASIC or hobby miner that speaks Stratum: Bitaxe, NerdAxe, NerdMiner, Avalon, Antminer, and so on.

Syncing takes time. A fresh Bitcoin Node has to download the blockchain before it can build block templates. Let it reach 100 % before you expect the pool to mine. dvb-WarpPool will still install and show you the node's sync progress in the meantime.

Pruned node? A pruned Bitcoin Node works fine for solo mining. The pool only needs the current chain tip and your mempool to build templates.

3 · Installing from the Community App Store

dvb-WarpPool ships through a **community app store**. You add the store once, then install the app like any other.

Step 1 — Add the community store

1. Open the **App Store** on your Umbrel.
2. Click the **three-dot menu** in the top-right corner and choose **Community App Stores**.
3. Paste this URL and click **Add**:

```
https://git.warppool.org/dvb-projekt/dvb-projekt-Umbrel-Community-App-Store.git
```

Step 2 — Install dvb-WarpPool

1. Open the newly added **DVB Projekt** store.
2. Select **dvb-WarpPool** and click **Install**.
3. Wait for the download to finish, then click **Open**.

Community stores are third-party. They are maintained independently of the Umbrel team. Only add stores you trust. dvb-WarpPool's images are published with a signed, reproducible build and a software bill of materials, and every release is pinned to an exact image digest.

The first time you open the app, Umbrel asks you to log in with your Umbrel password. The pool's web interface always sits behind your Umbrel login.

4 · First launch: the setup wizard

The very first time you open dvb-WarpPool, a **setup wizard** runs. It is *one long page you scroll down*, not a click-through sequence — you fill in the cards from top to bottom and press a single button at the end. On Umbrel the Bitcoin Node is found for you, so the wizard is mostly about your payout address and a few preferences.

The wizard does *not* ask for an admin password. Your pool interface already sits behind your Umbrel login. A separate pool admin account is set up later, the first time you open the Admin area (chapter 9).



First-Run Setup — Bitcoin Solo Pool

Hardware

OS	Darwin 26.5.1
Architecture	arm64 (bare)
CPU	Apple M2 Pro
Cores	12 physical / 12 logical
RAM	32768 MB total / 27951 MB available
Disk free	180504 MB

Recommendation: small (≤ 5 Miner)

Hardware handles up to: enterprise

Mining

Payout address (required)

bc1q...

Block reward lands here (coinbase output #1). Solo wallet address, never a private key.

Expected miners

5

Determines the recommended profile.

Pool fee (%)

0

Default 0 = "No pool fee". Only for multi-user solo / hosting.

Server location

Location

Korschenbroich NRW, Germany

Shown in the status endpoint + block-found notifications. Brand name (dvb-WarpPool) is fixed.

Electricity Rate (optional)

Rate per kWh

0.2744

Currency

EUR (€)

Optional — fills the dashboard energy card with cost values. Editable later in Admin. Leave empty for watt/kWh only, no cost.

Language picker (top-right)

A flag + language code with a small ▼ arrow switches between eight languages (Deutsch, English, Español, Português BR, Français, Italiano, ,). Pick yours first.

The "Hardware" card (read-only)

Informational only. It shows your Umbrel's OS, CPU, cores, RAM and free disk, and recommends a **size profile** from how many miners you expect: Small (≤ 5), Medium (≤ 20), Large (≤ 100) or Enterprise (> 100). A second line shows the largest profile your hardware could support. It updates live as you change "Expected miners".

The "Mining" card — the important one

Field	What to enter
Pool type	Choose Private solo pool (the default) or Public 0% pool . A private pool pays every block to <i>your</i> payout address — for mining your own rigs or a fixed group of friends. A public pool lets any visiting miner mine to <i>their</i> own address (taken from their Stratum login): the full reward goes straight to whoever finds the block, and you take no fee. Picking Public 0% pool hides the payout-address and fee fields below, because they aren't used in that mode.
Payout address (required)	Your own Bitcoin receive address — this is where a found block's full reward is paid (coinbase output #1). The wizard validates the format. Only a public receive address — never a private key. <i>(Hidden for a public 0% pool.)</i>
Expected miners	How many miners you plan to connect (default 5, minimum 1). Chooses your starting profile and initial difficulty range. Changeable later in Admin.
Pool fee (%)	Default 0 — leave it at zero for a true solo pool. A non-zero fee (0–50 %) only makes sense if you host mining for others. <i>(Hidden and forced to 0 for a public 0% pool.)</i>
Pool fee address	Appears only if the fee is above 0, and is then required.

The public-pool option is the whole switch for running a non-custodial, 0%-fee solo pool that strangers can point their miners at. For everything that involves — what miners enter, wallet pages, hardening and the optional donation card — see the **Public 0% Solo Pool** chapter in the online handbook.

The "Server location" card

A free-text label that appears in your pool's status and block notifications. Cosmetic.

The "Electricity rate" card (optional)

Your price per kWh and a currency (default EUR, 19 currencies) so the dashboard can show running energy cost. Leave the rate empty to show kWh only.

The "Photovoltaics / Solar" card (optional)

If you run solar, the pool can show how much of your mining runs on sunshine. Choose **No, set up later** (default), **Anker Solix**, **Home Assistant** or **Generic HTTP**. Each provider reveals its own fields (a snapshot

URL, and for Home Assistant a token and entity IDs), plus a surplus tariff and safety buffer. A **Test connection** button confirms it works before you save.

The "Restore" card (only if old data is found)

If the wizard finds data from a previous install, it offers checkboxes to restore your saved state and configs, and to import best shares from dvb-goPool. Leave the defaults unless you're migrating.

The "Bitcoin Core" health check

On Umbrel this is filled in for you — the wizard finds the Bitcoin Node app automatically and shows its version, chain, block height, sync progress and ZMQ status. Green means you're ready. Any "recommended `bitcoin.conf`" hints you see are meant for self-managed nodes; on Umbrel the node is already wired up.

Solar PV (optional)

If you have a solar PV system, the pool can automatically switch the electricity rate to 0 €/kWh during PV excess and track the kWh origin (solar vs. grid).

Provider



No, set up later



Anker Solix



Home Assistant



Generic HTTP

You can leave this empty and set it up later via Admin or config.toml. The choice here only writes the [mining.electricity.solar] block into the config file.

Bitcoin Core — Installation

✓ Bitcoin Core is installed

Bitcoin Core daemon version v31.0.0 bitcoind
/opt/homebrew/bin/bitcoind

If the RPC connection below fails: check whether bitcoind is running (e.g. `bitcoind -daemon` or `brew services start bitcoin`) and the `~/ .bitcoin/.cookie` file exists.

✓ macOS sleep mode disabled

The pool launcher automatically prevents system sleep while the daemon is running (via macOS `caffeinate`). This is necessary so that Bitcoin Core and the Stratum connections stay reachable around the clock. Display sleep keeps working — you can let the screen go dark.

► Why is this needed?

Bitcoin Core

✓ Defaults from `/Users/Oliver/Library/Application Support/Bitcoin/bitcoin.conf` · Network: `main`

RPC

✓ Block 954076

ZMQ HASHBLOCK

✓ :28332 open

ZMQ RAWBLOCK

✓ :28333 open

► Other network (testnet/signet/regtest) — load bitcoin.conf manually

⚠ Bitcoin Core reachable

Version	310000
Subversion	/Satoshi:31.0.0/
Chain	main
Block height	954076 / Headers 954076
Sync	100.00 %
IBD	no

Blockchain size	7.7 GB
Pruned	yes
txindex	no
Peers (in/out)	10 (0 in / 10 out)
ZMQ pubhashblock	tcp://127.0.0.1:28332
ZMQ pubrawblock	tcp://127.0.0.1:28333

- ⚠ No inbound peers — `listen=1` is missing in bitcoin.conf. Bitcoin Core runs outbound-only (no contribution to the network, less robust sync). Click "Insert into bitcoin.conf" in the wizard health check, then `bitcoin-cli stop` and restart `bitcoind -daemon`.
- ⚠ Bitcoin Core is running pruned — some pool features (txindex-based, like reorg handling) are limited. Fine for solo mining anyway.

 **Recommended bitcoin.conf settings**

Pick which settings should be inserted into your bitcoin.conf when saving. bitcoind will be restarted automatically afterwards.

☒ `listen=1`
Enable listening so inbound peers can connect (also: forward port 8333/tcp in the router to this machine)

Save configuration

Missing required fields: Payout address

Further down: optional solar, and the automatic Bitcoin Node health check.

Finishing: "Save configuration"

The final button is disabled until every required field is filled — a live hint lists what's missing (mainly your payout address). Click it, and the pool starts and opens the dashboard.

5 · The dashboard, tile by tile

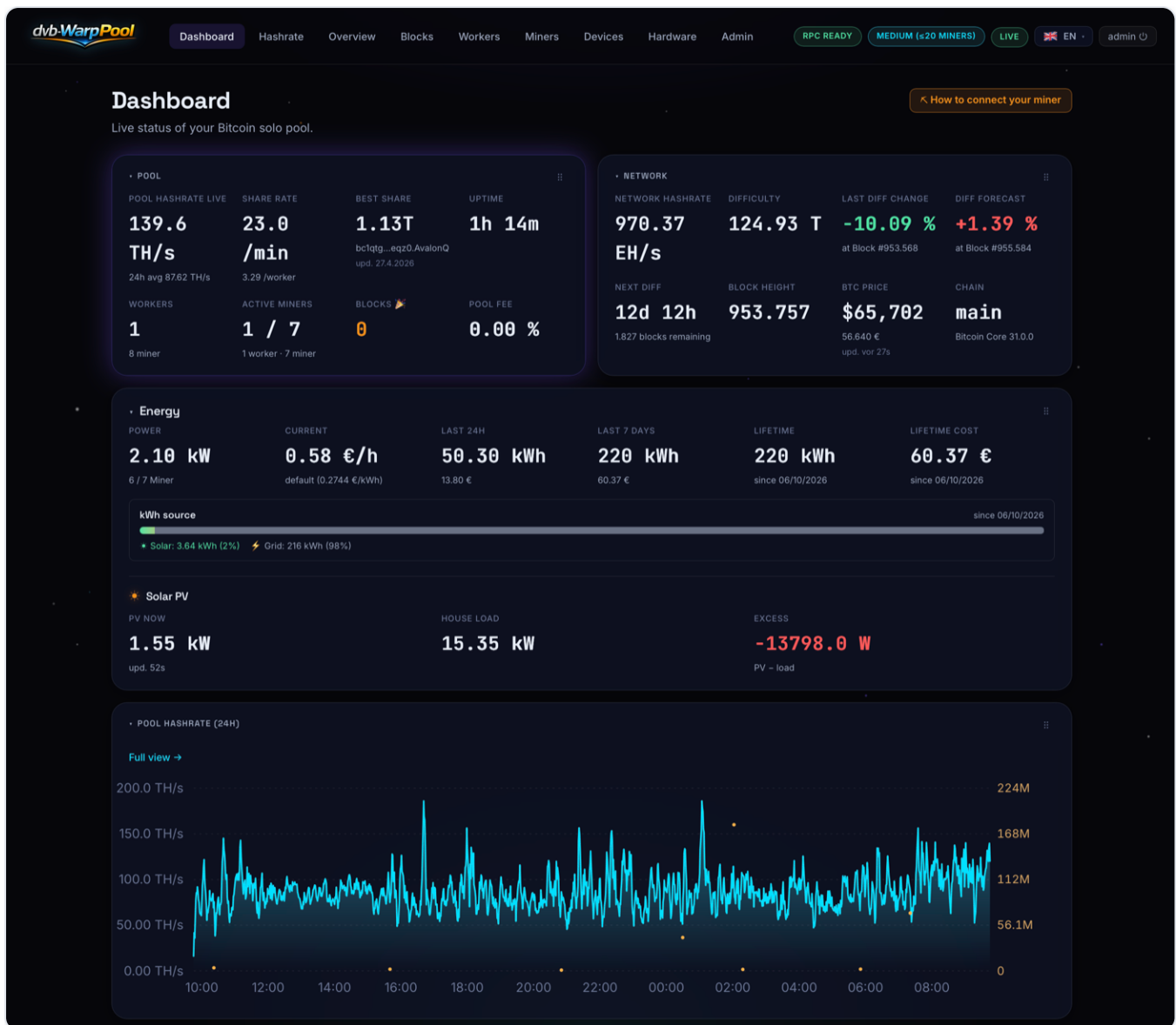
The dashboard is your pool's home screen — a live view of everything at once. Before the cards, let's read the bar that sits at the top of *every* page.

The header and status bar (on every page)

On the left is your pool's **logo** (a link back to the dashboard). In the middle is the **navigation**, with the active tab highlighted. On the right is a cluster of small status badges:

Badge	What it tells you
rpc ready / rpc waiting	Green "ready" = the Bitcoin Node is reachable and the pool can build work. Yellow "waiting" = still waiting for the node (usually during startup or sync).
Profile (cyan)	Your active size profile, e.g. "Small (1-5 miners)".
live / live off	Green "live" = real-time updates are streaming. Yellow "live off" = the stream dropped and the page is polling every 30 seconds. Red "offline" = the API is unreachable. A brief flicker is cosmetic and does not affect mining.
Display (monitor icon ▼)	Opens the screensaver / kiosk settings (chapter 12).
Language (flag ▼)	Switches the interface language instantly (per browser).
Login / Logout	The pool's own admin login (separate from your Umbrel login).

The **footer** shows your brand name, "WarpPool · version X", and "Refreshed at ..." with a timestamp.



The dashboard: pool status, network context, energy and a 24-hour hashrate chart.

How the cards behave

The dashboard is a grid of cards. Each card can be **collapsed** with the ▼/► arrow, and the whole grid can be **re-ordered** by dragging the :: handle ("Drag to reorder"). Your arrangement is remembered in *this* browser. Two controls sit at the bottom when you've changed things or you're logged in: "🔄 **Reset layout**" and, for admins only, "**Save layout as default**" (the pool-wide default for everyone without their own).

If the pool can't reach its own backend, a red banner appears after two failed tries: "API unreachable — Daemon running?".

The "Pool" card — your pool at a glance (8 tiles)

Tile	Meaning
Pool Hashrate Live	Your current combined mining speed (from the last full 5-minute block), auto-scaled. The sub-line shows the 24-hour average.
Share Rate	How many shares are coming in, as X/min or X/s. Sub-line: per worker.
Best Share	The single hardest share ever submitted. Sub-line: the worker and when. A "luckiest attempt" high score — no monetary value.
Uptime	How long the pool has been running.
Workers	The number of distinct payout wallet addresses; sub-line adds the miner count.
Active miners	Active wallets / active miners, with a breakdown of workers, miners, TLS and Stratum V2.
Blocks 🎉	How many blocks your pool has found (orange).
Pool Fee	Your configured operator fee, as a percentage.

The "Network" card — context from the Bitcoin network (8 tiles)

Tile	Meaning
Network Hashrate	The whole network's speed (EH/s). Your share of this is, roughly, your share of the luck.
Difficulty	The current network difficulty.
Last Diff Change	How much difficulty moved last (green if it fell, red if it rose), with the block.
Diff Forecast	The predicted next adjustment, same colour logic.
Next Diff	Estimated time to the next adjustment, plus blocks remaining.
Block Height	The current chain tip height.
BTC Price	Price in \$ and €, with a refresh time.
Chain	Which chain, plus your Bitcoin Core version. A warning line reads "IBD" (syncing) or "no rpc".

The "Energy" card

Present if energy tracking is on. Six tiles: **Power**, **current** cost/h, **last 24h**, **last 7 days**, **Lifetime** kWh and **Lifetime cost**, plus a "kWh source" bar splitting solar (green) from grid (grey). With solar configured, a "☀ Solar PV" section shows PV output, house load and surplus.

Where do the watts come from? Power and kWh are read from your miners' own telemetry (the Devices tab, chapter 7). Without registered, connected devices these tiles stay empty, and "disconnected" devices don't count.

The "Pool Hashrate (24h)" chart

The filled line is your pool hashrate over time (left axis). Amber dots are the hardest share in each time bucket (right axis) — a tall dot came unusually close to a block. Orange circles mark a block. Hovering shows the exact values; "Full view →" opens the Hashrate tab.

The "Active workers", "Best Shares" and "Recent blocks" cards

Active workers lists up to ten rows (User, Hashrate, Diff, Shares, Last seen). **Best Shares** is a high-score table with an All Time / Per Worker toggle. **Recent blocks** shows up to five blocks with a status badge (accepted / rejected / pending) and, for accepted blocks, an explorer link. Empty, blocks reads "No blocks found yet." with the reminder "Solo mining is a marathon — hashrate × luck × patience."

Connect a miner right away with the "⌵ How to connect your miner" button at the top of the dashboard — it shows your exact address, ports and (if enabled) TLS/Sv2 details. The next chapter walks through it.

6 · Connecting your first miner

Point your miner at your Umbrel. You configure three things in your miner's own settings page.

Setting	Value
Stratum URL / host	Your Umbrel's local address, e.g. <code>stratum+tcp://umbrel.local</code> or <code>stratum+tcp://192.168.1.50</code>
Port	<code>3333</code> — standard Stratum V1 (works with every miner firmware)
Worker / user	Your Bitcoin address, optionally with a worker name: <code>bc1q...</code> or <code>bc1q...myBitaxe</code>
Password	Anything (commonly <code>x</code>) — it is not used.

Which port?

Pick by **how your miner reaches the pool**, not by performance: all three carry the same work at the same speed, and the choice never changes your odds of finding a block. Encryption protects the *connection*, not your hashrate.

Port	What you get	What it costs
<code>3333</code> Stratum V1 (plain)	Works with every miner firmware; nothing to set up.	Unencrypted — perfectly fine on your own LAN, not for traffic crossing a network you don't control.
<code>3334</code> Stratum V1 + TLS	Encrypted transport for the exact same V1 protocol.	Only firmwares that accept a custom/self-signed certificate can use it (chapter 11); no speed benefit.
<code>34254</code> Stratum V2 (NOISE)	Modern protocol, always encrypted (NOISE), no certificate to manage.	Fewer firmwares speak Sv2 yet; needs the pool's authority key (chapter 11).

Short answer: on a home LAN use plain `3333`. Reach for TLS (`3334`) only when mining traffic crosses a network you don't control, and Stratum V2 (`34254`) only if your firmware supports it. None of the three is faster than the others.

The "How to connect your miner" panel

Rather than typing these by hand, open the "⚙️ How to connect your miner" button on the dashboard. It shows each value with a copy button:

- **Stratum (standard)** — `stratum+tcp://<host>:3333`, the address for almost any firmware.
- **Stratum (TLS)** — `stratum+ssl://...` (shown only if TLS is enabled) plus a "↓ Download certificate (PEM)" button (chapter 11).
- **Stratum V2 (NOISE)** — `<host>:34254` (shown only if Sv2 is enabled) plus the Sv2 authority public key, if set.
- **Username** — `<bitcoin-address>.<worker-name>`. **Password** — anything (e.g. `x`).

Dashboard
Live status of your Bitcoin solo pool.

POOL
POOL HASHRATE LIVE: 879.7 GH/s
SHARE RATE: 12.0 /min
24h avg 2.59 GH/s

WORKERS
7
7 miner

ACTIVE MINERS
7 / 0
7 worker · 0 miner

Energy
POWER: 0.0 W
0 / 0 Miner
CURRENT: —
no tariff

POOL HASHRATE (24H)
Full view →
1.00 TH/s
0.75 TH/s
0.50 TH/s
0.25 TH/s
0 TH/s

How to connect your miner

STRATUM (STANDARD)
stratum+tcp://127.0.0.1:3333 Copy

STRATUM (TLS)
stratum+ssl://127.0.0.1:3334 Copy

Download certificate (PEM)
Self-signed — firmwares with "TLS Custom CA" need this file as custom CA and the hostname shown here instead of the IP. Firmwares that only accept bundled/public CAs (e.g. BitForge Nano v1.5) can never connect to a self-signed cert — use port 3333 there or serve a CA-signed certificate (see handbook).

STRATUM V2 (NOISE)
127.0.0.1:34254 Copy

SV2 AUTHORITY PUBKEY (BASE58)
9b7axxZCBYAJnMxKg37QNfWA5LNL3Ro3LasAgAptQjhhZjkqntg Copy

USERNAME
<bitcoin-address>.<worker-name>

PASSWORD
anything (e.g. x)

Use your Bitcoin address as the username. Optionally add a dot and a worker name, e.g. bc1q...xyz.bitaxe01

LAST DIFF CHANGE
+7.15 %
at Block #955,584

DIFF FORECAST
-4.60 %
at Block #957,600

BTC PRICE
\$64,160
56,174 €
upd. var. 1m

CHAIN
regtest
Bitcoin Core 31.0.0

LIFETIME COST
kWh
—
since pool start

The “How to connect your miner” panel — your exact address and ports, plus the TLS certificate and Stratum V2 key when enabled.

Worker names. Add a name after your address (`bc1q...livingroom`) to tell several miners apart on the Workers and Miners tabs. All of them still pay out to the same address.

Running a public 0% pool? By default every miner pays out to the one operator address you set in the wizard. If you instead switch the pool to **per-worker payout** (`[mining] payout_mode = "per_worker"`), the Bitcoin address in *each* miner's login becomes that miner's own payout address — different miners can use different addresses, and each one keeps the full reward for the blocks it finds, non-custodially. That is how you run dvb-WarpPool as an open, zero-fee solo pool for other people. See the "Run a public pool" guide at docs.warppool.org for the operator setup and hardening checklist.

Save the miner's settings and give it a minute. It appears on the dashboard's **Active miners** count and on the **Miners** tab, and its shares start flowing into the hashrate chart.

Small miners look "bursty". A tiny device (e.g. a NerdMiner at a few hundred KH/s) submits a share only every few minutes, so its displayed hashrate naturally rises and falls. That is normal and does not mean it is offline.

7 · The tabs, one by one

The navigation bar gives you focused views. First, the single most confusing thing about this interface — please read this before the tabs:

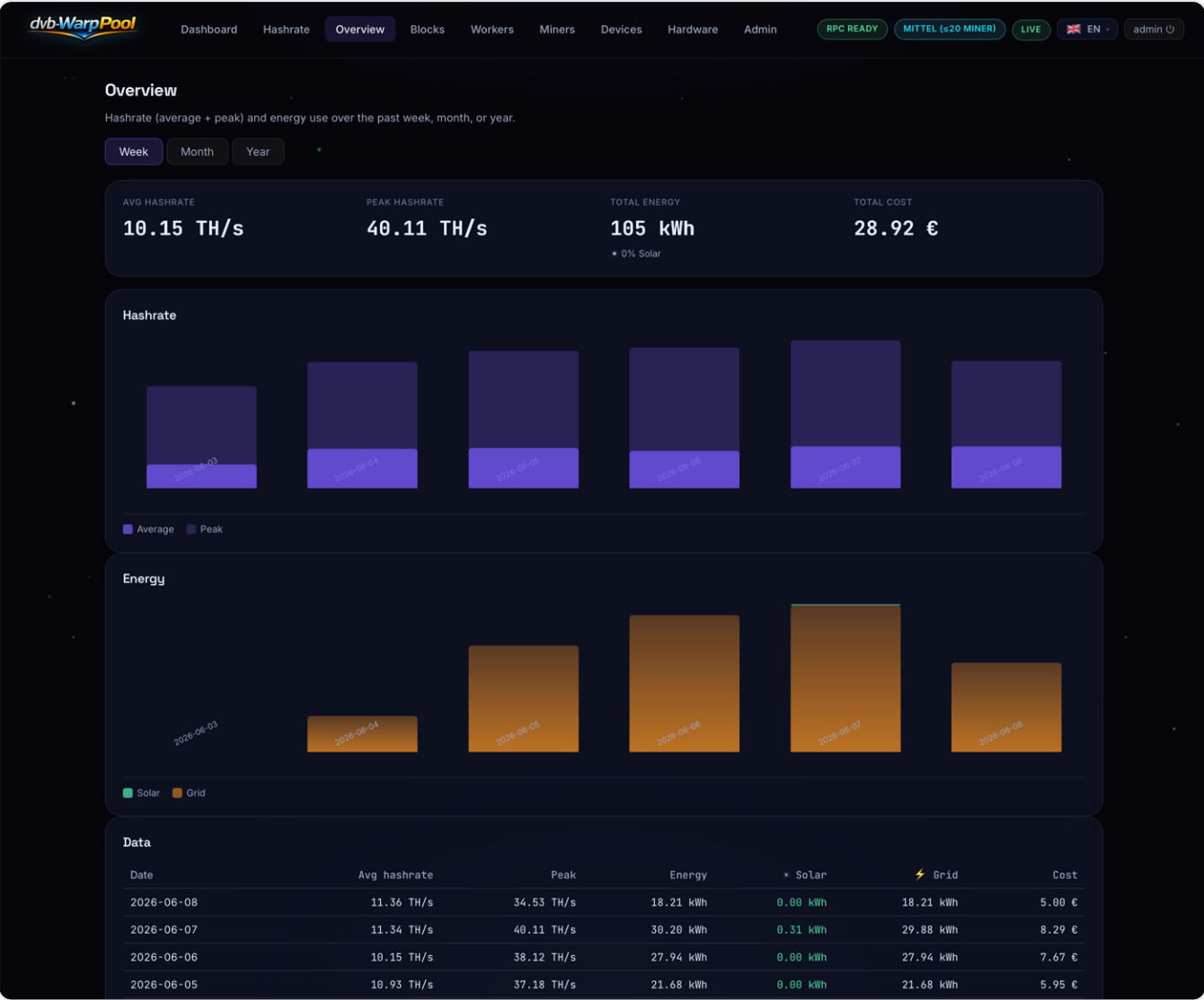
Three menu items, and two pages titled "Miners". The menu label is *not* the same as the page it opens:

- Menu **Workers** → a table with one row per **wallet address**.
- Menu **Miners** → a read-only table with one row per **Stratum login**. Its page title reads "Miners".
- Menu **Devices** → the interactive **device manager** with telemetry. Its page title *also* reads "Miners".

Always refer to a page by its **menu label**, never by the heading.

Overview (menu "Overview")

A weekly/monthly/yearly summary. A **Week / Month / Year** switch changes the range. Tiles show **Avg hashrate**, **Peak hashrate**, **Total energy** (with a "☀ NN% Solar" note) and **Total cost** (energy tiles only if energy is visible). A **Hashrate** bar chart pairs a strong "Average" bar with a pale "Peak" bar per bucket; an **Energy** chart stacks grid (orange) and solar (green). The **Data** table lists each day. Empty: "No data yet — daemon needs at least 1 hour of runtime to build daily aggregates."



Overview: average and peak hashrate plus energy use over a week, month or year.

Hashrate (menu "Hashrate")

The detailed hashrate view, built from 1-minute buckets. A **Time window** selector (1h / 6h / 24h / 7d) and a **Worker** dropdown (first option "Pool total") filter it. Four tiles: **Current**, **Peak**, **Ø Average** and **In window** (shares and blocks). Below, a large chart with the amber best-share overlay.



Hashrate: filter by worker and time window; the amber dots are best-share peaks.

Workers (menu "Workers") — one row per wallet

This page aggregates by **payout wallet address** — all miners paying to the same address are summed into one row.

Column	What it means & what's normal
Wallet	The payout address, shortened (hover for the full value).
Miners	How many miners pay to this wallet, and how many are live. A green dot means all are active.
Hashrate	The combined speed of this wallet's miners.
Shares/min	How fast shares are coming in for this wallet.
Shares ✓ (green)	Accepted shares — valid work. Should keep climbing.
Shares ✗ (red)	Rejected shares. A handful right after a new block or a reconnect is completely normal (briefly stale work). A steadily growing reject count is worth a look.
Blocks (orange)	Blocks this wallet found. Usually 0 for a long time — that's solo mining.
First seen / Last seen	When this wallet first appeared and last submitted. "Last seen" jumping to hours ago means its miners went quiet.

What to watch: a healthy wallet has a rising Shares ✓, a near-zero Shares ✗, and a recent "Last seen". Empty: "No worker connected yet." with your Stratum URL.



Each row is a single Stratum login, newest activity first.

dvb-WarpPool — User Manual for Umbrel

Page 23

dvb-WarpPool

DashboardHashrateOverviewBlocksWorkersMinersDevicesHardwareAdmin

RPC READYMITTEL (±20 MINER)LIVEENadmin

Miners

8 known miners — sorted by latest activity.

USER	SHARES ✓	SHARES ✕	BLOCKS	USER-AGENT	FIRST SEEN	LAST SEEN
bc1qtg...eqz0.NerdQaxe++	39.666	—	—	NerdQaxe++/BM1370/v1.0.37_	2.6.2026	vor 0s
bc1qtg...eqz0.NerdNOS	13.911	—	—	NerdNOS/2.0.5	3.6.2026	vor 0s
bc1qtg...eqz0.AvalonQ	25.887	—	—	cgmimer/4.11.1	3.6.2026	vor 3s
bc1qtg...eqz0.bitaxe602	35.780	—	—	bitaxe/BM1370/v2.14.0	1.6.2026	vor 4s
bc1qtg...eqz0.NerdAxeGamma	33.821	—	—	NerdAxe/BM1370/v1.0.37.1	2.6.2026	vor 7s
bc1qtg...eqz0.BitForgeNano	35.843	—	—	bitforge/BM1370/v1.5	1.6.2026	vor 21s
bc1qtg...eqz0.NerdOctaxe	37.285	—	—	NerdOCTAXE-y/BM1370/v1.0....	2.6.2026	vor 45s
bc1qtg...eqz0.NerdMiner_V2	5.406	—	—	NerdMinerV2/V1.8.3	4.6.2026	vor 1m

dvb-WarpPool

WarpPool - version 1.0.9

Refreshed at 08.06.2026 17:04:50

Miners: every Stratum login, with a lock icon for TLS and a lightning icon for Stratum V2.

The most interactive tab: it lists and manages the physical miners on your network, with live telemetry, polling every 15 seconds. Supported hardware includes AxeOS devices (Bitaxe, BitForge Nano, NerdAxe Gamma, NerdQaxe, NerdOctaxe), NerdNOS and Avalon Q (NerdMiner V2 has no REST API, so it can mine but not be managed here).

dvb-WarpPool

Dashboard
Hashrate
Overview
Blocks
Workers
Miners
Devices
Hardware
Admin

RPC READY
MITTEL (s20 MINER)
LIVE
EN
admin

Miners

Live telemetry for connected miners. AxeOS (BitAxe / BitForge Nano / NerdAxe Gamma / NerdQaxe / NerdOctaxe), NerdNOS and Avalon Q are probed directly; NerdMiner V2 exposes no REST API.

ADD MINER

HOST (IP OR HOSTNAME)

VENDOR

LABEL (OPTIONAL)

192.168.1.50 or bitaxe.local

Auto Scan

BitAxe (AxeOS)

e.g. kitchen, basement

Add

NERDAXEGAMMA

NERDAXE GAMMA VOR 20S

HASHRATE

1.30 TH/s

TEMPERATURE

55.0 °C

POWER

20.2 W

UPTIME

5h 3m

BM1370 @ 640MHz · v1.0.371 · 1.312 shares

nerdaxegamma.local

Details

Remove

NERDQAXE

NERDQAXE VOR 20S

HASHRATE

6.50 TH/s

TEMPERATURE

57.9 °C

POWER

109.9 W

UPTIME

1d 7h

BM1370 @ 800MHz · v1.0.371 · 8.103 shares

nerdqaxe.local

Details

Remove

BITAXE-602-GAMMA

BITAXE (AXEOS) VOR 20S

HASHRATE

1.44 TH/s

TEMPERATURE

67.0 °C

POWER

25.6 W

UPTIME

5h 3m

BM1370 @ 700MHz · v2.14.0 · 154 shares

bitaxe-602-gamma.local

Details

Remove

AVALONQ

AVALON Q (CANAAN) VOR 15S

HASHRATE

54.73 TH/s

TEMPERATURE

65.0 °C

POWER

853.0 W

UPTIME

4d 22h

Avalon Q · Eco @ 290 MHz · 55.890 shares

avalonq.local

Details

Remove

BITFORGENANO

BITFORGE NANO VOR 20S

HASHRATE

2.15 TH/s

TEMPERATURE

55.0 °C

POWER

45.0 W

UPTIME

1d 5h

BM1370 @ 525MHz · v1.5 · 7194 shares

bitforgenano.local

Details

Remove

NERDOCTAXE

NERDOCTAXE VOR 20S

HASHRATE

11.44 TH/s

TEMPERATURE

66.1 °C

POWER

208.8 W

UPTIME

5h 3m

BM1370 @ 700MHz · v1.0.371 · 1.852 shares

nerdoctaxe.local

Details

Remove

NERDNOS

NERDNOS VOR 20S

HASHRATE

151.8 GH/s

TEMPERATURE

71.3 °C

POWER

—

UPTIME

—

NerdNOS · 2.0.5 · 14.543 shares

Devices: adopt discovered miners or add them by IP, then watch live temperature, power and hashrate.

The device Details page currently shows raw text keys. On a miner's Details page you may see literal labels like "`← common.back`", "`minerDetail.alerts`", "`minerDetail.history`" and "`{n} minerDetail.samples`", and an empty chart labelled "keine Daten". This is a known cosmetic gap, not a fault with your miner. The buttons 1h/6h/24h/7d switch the range, and the five small graphs are Hashrate, Power, Temperature, Voltage and Fan.

Blocks (menu "Blocks")

Every block your pool has found. Columns: **When**, **Worker**, **Job**, **Block hash** (a clickable explorer link when accepted), **Height**, and **Status** (accepted / rejected + reason / pending). Empty: "No blocks found yet." Refreshes every 10 seconds.

dvb-WarpPool — User Manual for Umbrel

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dvb-WarpPool

DashboardHashrateOverviewBlocksWorkersMinersDevicesHardwareAdmin

RPC READY

SMALL (1-5 MINERS)

LIVE

EN

admin

Blocks

107 blocks found.

WHEN	WORKER	JOB	BLOCK HASH	HEIGHT	STATUS
1h ago	s1m0-N...V2-0	j9	70b719e3b365...ea468830	107	REJECTED inconclusive
1h ago	s1m0-N...V2-3	j9	14dcb7f43441...febec3f8	107	ACCEPTED
1h ago	s1m0-N...V2-2	j8	552d70dcf01...b2cc1cd6	106	REJECTED inconclusive
1h ago	s1m0-N...V2-2	j8	679133babc3d...58dbc17c	106	REJECTED inconclusive
1h ago	s1m0-N...V2-3	j8	4f3318a44e89...8535904b	106	REJECTED inconclusive
1h ago	s1m0-N...V2-2	j8	308bb067541...0b5a3449	106	REJECTED inconclusive
1h ago	s1m0-N...V2-0	j8	27d355060686...8e635726	106	REJECTED inconclusive
1h ago	s1m0-N...V2-2	j8	440fc33dd8b9...d2edf251	106	REJECTED inconclusive
1h ago	s1m0-N...V2-2	j8	4a56d6393f4e...94622f63	106	REJECTED inconclusive
1h ago	s1m1-B...ra-0	j8	2776f0a5364d...acecb5a3	106	REJECTED inconclusive
1h ago	s1m0-N...V2-3	j8	470b83d5b61...c2e21436	106	ACCEPTED
1h ago	s1m0-N...V2-4	j7	04aca4c21fe7...08fb3da7	105	REJECTED inconclusive
1h ago	s1m0-N...V2-2	j7	60749e4b05aa...3dd278a6	105	REJECTED inconclusive
1h ago	s1m0-N...V2-2	j7	149e2d7995cc...29cbb4f2	105	REJECTED inconclusive
1h ago	s1m0-N...V2-1	j7	10fe732e1e02...5b0cfc02	105	REJECTED inconclusive
1h ago	s1m0-N...V2-4	j7	205049f8d5dc...f64f2753	105	REJECTED inconclusive
1h ago	s1m0-N...V2-1	j7	0722cdd1b3e8...e6022ec5	105	REJECTED inconclusive
1h ago	s1m0-N...V2-0	j7	11ed9fba0829...a9fec9b6	105	REJECTED inconclusive
1h ago	s1m0-N...V2-3	j7	734f2f23071e...cbdcaeb1	105	REJECTED inconclusive

The Blocks tab: every solved block with its worker, height and accepted/rejected status.

Hardware (menu "Hardware")

The host's own resources and the size-profile picture. Three cards: **Detected** (OS, kernel, arch, CPU, cores, RAM, disk, hostname); **Profile recommendation** (current profile, hardware cap, auto-switch, and a "What-if" control to try miner counts); and **Profile comparison**, a table across all four profiles where each value is marked **live** (instant on switch), **restart** (needs a restart) or **guide** (a rough target).

dvb-WarpPool — User Manual for Umbrel

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dvb-WarpPool

DashboardHashrateOverviewBlocksWorkersMinersDevicesHardwareAdmin

RPC READYMEDIUM (≤20 MINERS)LIVEENadmin

Hardware

Live host hardware detection + profile recommendation.

DETECTED

OS

Darwin 26.5.1

KERNEL

25.5.0

ARCH

ARM64BARE

CPU

Apple M2 Pro

CORES

12 physical / 12 logical

RAM

32.0 GB (25.3 GB free)

DISK FREE

102.2 GB

HOSTNAME

Mac-mini.fritz.box

PROFILE RECOMMENDATION

CURRENT

MEDIUM (≤20 MINERS)8 active miners

HARDWARE CAP

ENTERPRISE (>100 MINERS)max. achievable per hardware specs

AUTO-SWITCH

ACTIVEDaemon switches live, bounded by the cap

WHAT-IF

Expected miners:1520501005005

AT 5 MINERS

Small (1-5 Miners)

Hardware: 12 cores, 32768 MB RAM, 104664 MB disk free, env=Bare

Erwartet: 5 Miner → naiv Profil Klein

Hardware schafft bis Enterprise, bleibe bei Klein

Feasible up to:

SMALL (1-5 MINERS)MEDIUM (≤20 MINERS)

LARGE (≤100 MINERS)ENTERPRISE (>100 MINERS)

Hardware: live host detection plus the profile that fits your miner count.

PROFILE COMPARISON

What do the four profiles stand for? Each column is a preset — scaling thread pools, cache, VarDiff aggression and retention windows. The green-highlighted column is the current one.
LIVE applies immediately on a profile switch (no restart needed) · RESTART takes effect only after a daemon restart · GUIDE advisory only — a profile switch does not change this value

PROPERTY	SMALL (1-5 MINERS)	MEDIUM (≤20 MINERS) CURRENT	LARGE (≤100 MINERS)	ENTERPRISE (>100 MINERS)
Worker range	0-5	6-20	21-100	101+
Deployment mode	Solo	Solo + friends	Community ¹	Service ¹
Connection cap LIVE	16	64	256	4.096
RAM target GUIDE	128 MB	512 MB	2.0 GB	8.0 GB
Stratum threads GUIDE	1	2	all cores	all cores
DB pool RESTART	4	8	16	32
UI refresh GUIDE	5s	2s	1s	1s
Miner polling LIVE	30s	15s	5s	1s
VARDIFF DEFAULTS				
Initial diff LIVE	4.096	32.768	1.048.576	16.777.216
Min diff LIVE	1.024	4.096	65.536	524.288
Max diff LIVE	262.144	4.194.304	67.108.864	1.073.741.824
RETENTION				
Raw shares LIVE	1d	7d	30d	90d
5min agg LIVE	7d	30d	90d	1y
1h agg GUIDE	90d	1y	5y	10y
Miner telemetry LIVE	1d	7d	30d	90d
RATE LIMITS				
Stratum auth/min LIVE	60	120	600	6.000
API/min LIVE	120	600	3.000	60.000

¹ Community / Service need extensions (reverse-proxy, payout, DDoS, ...) that aren't in the OSS scope. On request via [GitHub issue](#). Details: [docs/scaling.md](#).

dvb-WarpPool

WarpPool · version 1.3.2

Refreshed at 06/15/2026 04:42:46 PM

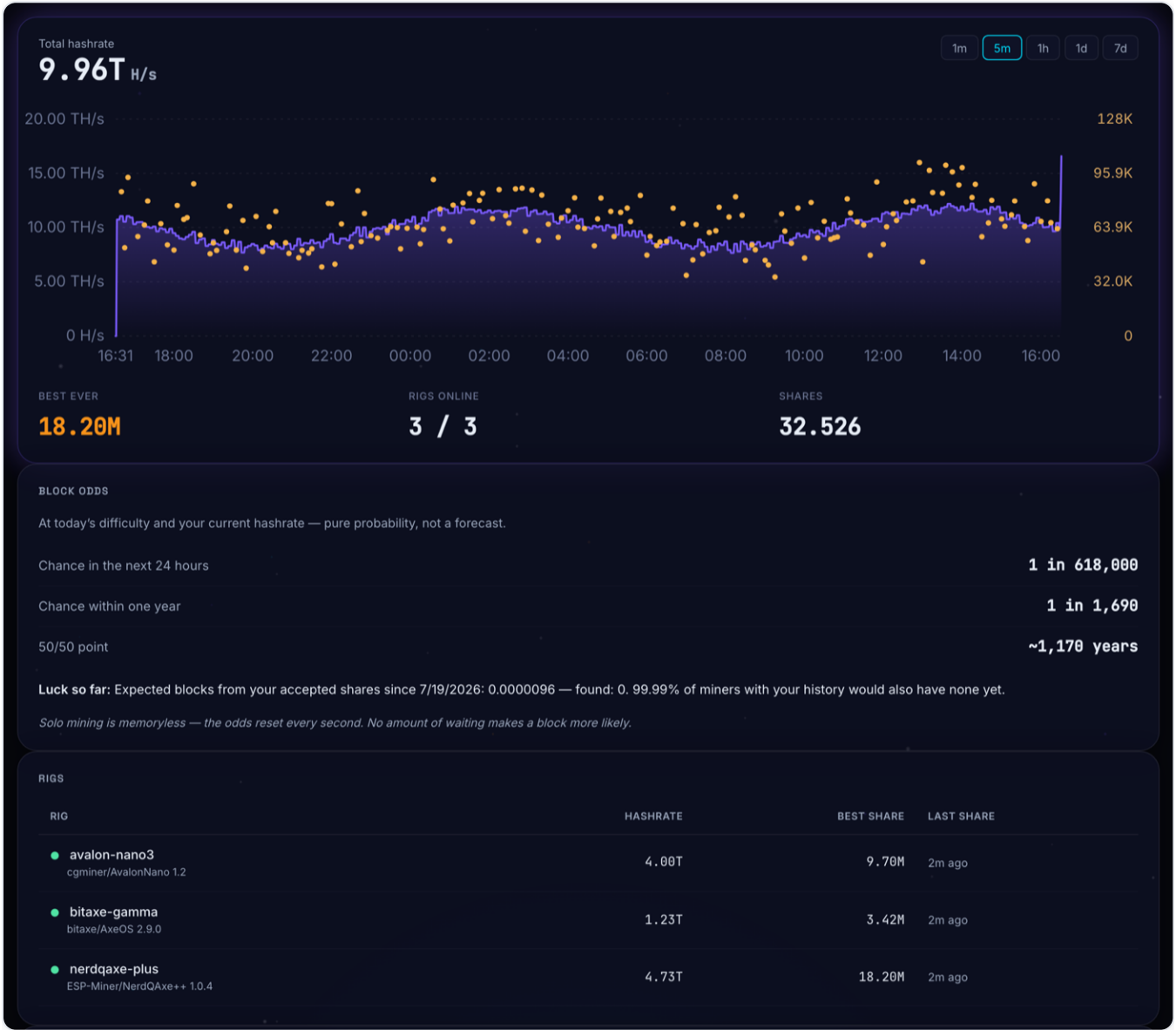
The profile comparison table — "live", "restart" and "guide" tell you when each value takes effect.

8 · Your public wallet page (/users)

Every payout address that has ever mined on your pool gets its own status page at `/users/<address>`. It needs no login, it is safe to share, and it is the page your miners will bookmark to watch their own rigs.

Open it in two ways:

- On the **Workers** tab (chapter 7), click any wallet row.
- Append `/users/<bitcoin-address>` to the app's own URL (the address bar when you open dvb-WarpPool from your Umbrel dashboard).



The public wallet page: aggregated hashrate with 1m–7d windows, the 24-hour chart with best-share peaks, the honest block odds, and one row per rig.

What it shows

- **Total hashrate** with a window switch — `1m · 5m · 1h · 1d · 7d` — aggregated across every rig that logs in under this address.

- The **24-hour hashrate chart**, with each best share drawn as a dot so lucky shares stand out.
- **Best ever** — the highest-difficulty share this address has ever submitted.
- **Rigs online** and the total **shares** counter.
- A **Rigs** table — one row per `address.rig` login, with its hashrate, best share, last-share time and detected mining software.

The Block-odds panel

Below the stats sits an honest answer to the only question that really matters in solo mining: *what are my chances?* The old builds showed a single "estimated time to block" — for a home rig that reads "~12,000 years", which sounds like "never" and quietly hides the one fact that makes solo mining make sense at all: the process is **memoryless**. Every second is a fresh draw; there is no queue, no progress bar, nothing getting closer. The panel replaces that one misleading number with the real picture:

- **Chance in the next 24 hours** and **chance within one year** — computed from your current hashrate and today's network difficulty. Long odds are shown as "**1 in N**" (for example "1 in 6.3 million"); once a probability climbs above 1 % it is shown as a percentage, always rounded *down* so it never overstates your chances.
- **50/50 point** — the time after which finding a block is more likely than not (the median, not the average). This is usually many years; that is normal and it is not a countdown.
- **Luck so far** — the number of blocks your accepted work "should" have produced (a fraction, almost always far below 1), the number you actually found, and — if none yet — what share of miners with exactly your history would also still be empty-handed. This is measured from the day the pool started tracking it, shown as "since <date>", never as an all-time claim.

None of this changes how mining works — it is the same lottery, described honestly. No amount of waiting makes a block more likely; only more hashrate or a lower difficulty does. When the address is offline (no current hashrate) the panel shows a dash, exactly like the old tile did.

Firmware & ckstats. The same data is served as JSON at `/api/users/<address>` in the ckpool field format (`hashrate1m` ... `hashrate7d` , `bestshare` , `bestever` , `worker[]`), so ckstats-style dashboards and miner firmware can read it directly. The block-odds figures are added as an `odds` object on the same response (24-hour and yearly probability, the 50/50 point in seconds, expected vs. found blocks), computed server-side so third-party tools get identical numbers; it is `null` when the address is offline.

The Owner Area

Below the stats, anyone can prove they own the address — without an account and without moving a single satoshi — by signing a short challenge message with the address's private key (the same "Sign message" feature your wallet already has). Verifying unlocks two owner-only controls:

- **Privacy** — hide this address from the public **Workers**/wallet list. The direct `/users/<address>` link keeps working, but only for you.
- **Notifications** — an ntfy topic or webhook URL ([http/https](http://)) that gets pinged on this address's milestones: it finds a **block**, it sets a new **personal-best share** (across all of its rigs, not just one), it first enters the pool's **all-time top 100** best shares, or one of its rigs goes **offline**. Each kind has its own cooldown so a good run does not turn into a stream of messages, and a found block sends a single headline rather than three overlapping alerts.

OWNER AREA

Open the wallet that holds this address, find its "Sign message" tool, paste the exact text below into it, sign, and paste the resulting signature here. Desktop wallets like Electrum or Sparrow (both free) can do this — including a hardware wallet (BitBox02, Trezor, Ledger) connected to them. Most phone and exchange wallets cannot sign messages. bc1q (SegWit) addresses work everywhere; Taproot (bc1p) addresses work with wallets that can sign BIP-322 messages, such as Sparrow.

WarpPool ownership verification
Address: `muYExjbENgwogX8ah5qcoALAYMMNdVNnbM`
Nonce: `f0b1aed239e1d7bad33f9f405c0e143cd35e8d06c435e9ee650359512399a8cc`

Signature

Paste signature

Verify
Cancel

Step one: WarpPool shows a short challenge text. Sign it with the wallet that holds the address and paste the signature back. Taproot (`bc1p...`) addresses work here too — with a wallet that can sign **BIP-322** messages.

OWNER AREA

✓ Ownership verified

Privacy Public

Hide this address from the public wallet list. The direct link stays visible only to you.

Make private

Notifications

ntfy topic or webhook URL (http/https). You'll be notified when this address finds a block, sets a new personal best share, enters the pool's all-time top 100, or a rig goes offline.

https://ntfy.sh/your-topic

Save
Clear

The Owner Area after a successful signature: a privacy toggle and a per-address notification target.

Which addresses can verify? Message signing works for legacy (`1...`), SegWit (`bc1q...`) and wrapped-SegWit (`3...`) addresses. **Taproot** (`bc1p...`) works too, with a wallet that can sign **BIP-322** messages, such as Sparrow.

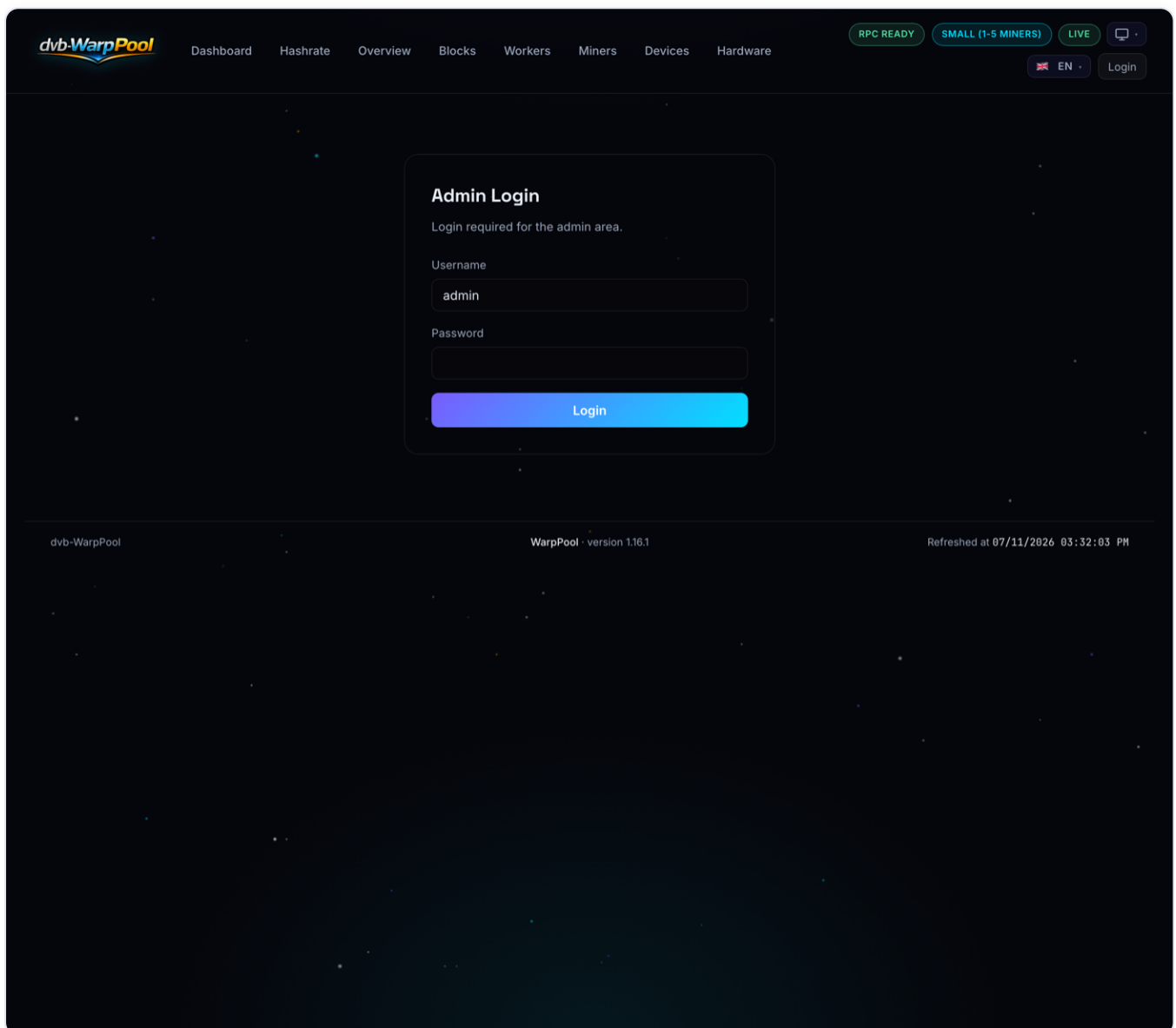
No account, ever. The signature only proves ownership of this one address; it grants a browser cookie that expires on its own. It never touches your funds and never reveals your private key.

9 · The Admin area, page by page

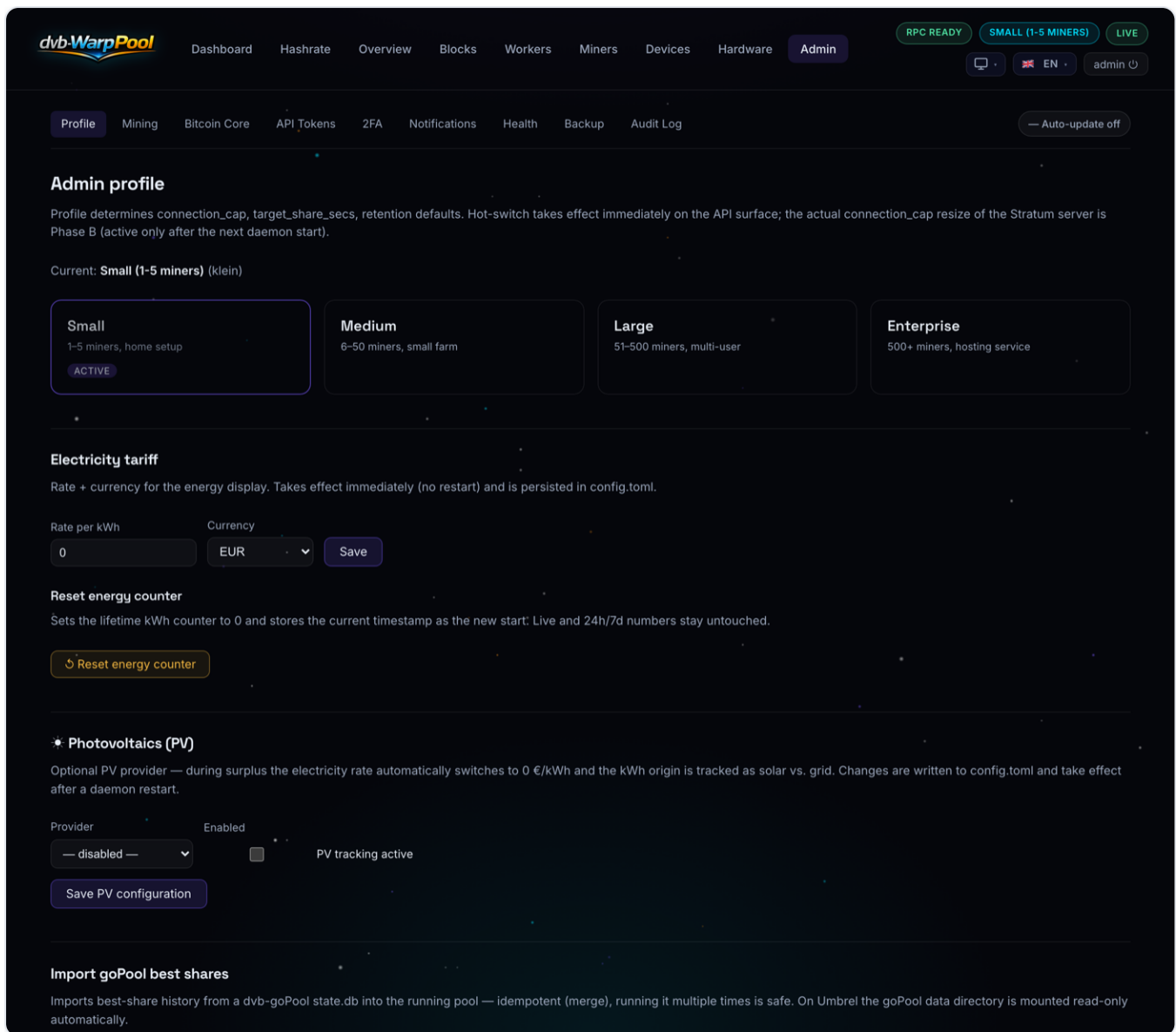
Everything you might tune lives under **Admin**. It has its own login (a session lasts 24 hours by default), separate from your Umbrel login.

Login & first-time setup

The **very first** time, there is no pool admin account yet, so the login page shows a **"Set up admin account"** form: pick a username (default `admin`), a password (at least 8 characters) and confirm it, then click **"Create account & sign in"**. No restart is needed. After that, the same page is a normal **Login**, and — if you've enabled 2FA — it asks for a 6-digit code on the second try.

The screenshot shows the dVB-WarpPool web interface. At the top, there's a navigation bar with the logo on the left and several status indicators on the right: 'RPC READY' (green), 'SMALL (1-5 MINERS)' (blue), 'LIVE' (green), and a monitor icon. Below these are language and login buttons: 'EN' with a flag icon and a 'Login' button. The main content area is dark-themed and features a central 'Admin Login' form. The form has a title 'Admin Login', a message 'Login required for the admin area.', and two input fields: 'Username' (containing 'admin') and 'Password' (empty). A blue 'Login' button is at the bottom of the form. The footer contains three items: 'dVB-WarpPool' on the left, 'WarpPool - version 1.16.1' in the center, and 'Refreshed at 07/11/2026 03:32:03 PM' on the right.

The pool's own admin login (separate from your Umbrel login). On a brand-new install this screen instead shows "Set up admin account".



The Admin area opens on the Profile page: the size-profile cards, electricity tariff, energy reset and PV settings. The sub-navigation lists every admin page.

Across the top of Admin is a sub-navigation — **Profile · Mining · Bitcoin Core · API Tokens · 2FA · Notifications · Health · Backup · Audit Log** — and an update badge on the right.

Profile (Admin → Profile)

The busiest admin page. From top to bottom:

- **Profile hot-switch** — four cards: **Small** (1–5 miners), **Medium** (6–50), **Large** (51–500) and **Enterprise** (500+). Switching is instant, *except* the connection cap, which needs a restart. Large/Enterprise pop an "operator mode" warning (meant for hosting others; a standing orange banner shows while active).
- **Electricity tariff** — rate per kWh + currency + Save. Immediate.
- **Reset energy counter** — zeroes the lifetime kWh (Live/24h/7d untouched), after an inline confirmation.
- **Photovoltaics (PV)** — the same solar providers as the wizard. **Saving PV config needs a daemon restart.**
- **Import goPool best shares** — pull a best-shares history from an old dVB-goPool database.

- **Visibility toggles** — show/hide the Miners tab, Hardware tab and Energy card *for anonymous visitors*. (This is why a tab may appear "missing" when logged out.)
- **IP ban list** — see chapter 15.
- **Uninstall** — see chapter 14.
- **Restart pool** — a "↺ Restart pool" button for any "restart required" change. Miners reconnect within seconds; no shares are lost.

Mining (Admin → Mining)

Your **payout address** is shown here **read-only** — for safety it can only be changed in the config. Below it, the **pool fee** (percentage + fee address). A fee change takes effect **after a restart and from the next block onward**, and is recorded in the audit log.

The screenshot displays the 'Mining' configuration page in the dvb-WarpPool admin interface. At the top, there's a navigation bar with tabs like Dashboard, Hashrate, Overview, Blocks, Workers, Miners, Devices, Hardware, and Admin. Below this, a sub-navigation bar includes Profile, Mining (selected), Bitcoin Core, API Tokens, 2FA, Notifications, Health, Backup, and Audit Log. The main content area is titled 'Mining' and contains two primary sections: 'Payout address' and 'Pool fee'. The 'Payout address' section shows a Bitcoin address and a 'Copy' button. The 'Pool fee' section has input fields for 'Fee (%)' (set to 0) and 'Fee address (only needed for fee > 0)' (set to bc1q... / 3... / 1...). A 'Save fee' button is present, along with a confirmation message: 'Saved to config.toml; validation matches the daemon's boot check exactly. Every change lands in the audit log.' The footer of the page includes the text 'dvb-WarpPool', 'WarpPool · version 1.16.1', and a refresh timestamp 'Refreshed at 07/11/2026 03:35:42 PM'.

Admin → Mining: the read-only payout address and the optional pool fee (0 % for a true solo pool).

Donations (Admin → Donations) — public pools only

This page appears in the admin menu **only when the pool runs in per-worker mode** (a public 0% pool). A per-worker pool keeps none of the reward, so a voluntary tip is the only way supporters can help cover your

hosting — and this page is where you set the addresses for it.

Field	What to enter
On-chain address	Any Bitcoin address you want tips sent to. It's validated when you save. Shown on the public dashboard as a copyable address and a <code>bitcoin:</code> QR code a visitor's wallet can scan.
Lightning address	A Lightning address, LNURL or BOLT12 string (stored as you enter it). Shown as its own copy field and QR code.

Leave either field blank to hide that option. When at least one is set, a **"Support this pool"** card appears at the bottom of the public dashboard. These addresses are purely informational — they are never mixed into block construction, so setting one can't affect the rule that a per-worker pool pays the finder the full reward. Saving takes effect immediately (no restart) and is recorded in the audit log.

Banner (Admin → Banner) — a scrolling notice on your pool page

Sooner or later you need to tell the people mining on your pool something: you are restarting the node on Sunday morning, your internet provider has announced an outage, or a port has changed. This page puts that message where they will actually see it — as a slowly scrolling strip along the very top of the pool page, above the dashboard, visible to every visitor whether they are logged in or not.

Field	What to enter
Announcement text	The message itself, up to 200 characters. It is shown exactly as you type it — plain text only, never interpreted as HTML or formatting. Line breaks and other control characters are refused, because they would tear the scrolling strip apart.
Runtime and Unit	How long the notice should stay up: a number plus <i>minutes</i> , <i>hours</i> or <i>days</i> . The shortest allowed is one minute, the longest 90 days. The end time is worked out from the moment you press Start.

Start puts the notice live. **Stop** takes it down again before its time is up — useful when the maintenance finished early. Above the fields a status line tells you whether a notice is currently running, and until when.

The point of the runtime is that **you do not have to remember to remove it**. The end time is stored next to the text, so the notice disappears on its own when the time is over — even if the pool is restarted in between. A forgotten maintenance notice cannot sit on your page for weeks.

Two details that matter for your visitors: pointing at the strip with the mouse, or reaching it with the Tab key, **pauses the scrolling**, so a long notice can be read to the end; and anyone who has switched on „reduce motion“ in their operating system sees the text standing still instead of moving.

The banner shows everywhere in the interface, not only on the dashboard — including while you are working in the admin area. That is deliberate: it doubles as confirmation that your notice really is live.

Bitcoin Core (Admin → Bitcoin Core) — including GBT ⇌ IPC

On Umbrel the config editor is hidden. Because the Bitcoin Node runs as its own Umbrel app, this page shows "Editor not available" with the paths it checked — you manage node settings in the Bitcoin Node app itself, not here. The **Template source** section below is still available.

Template source: GBT + ZMQ vs. IPC

This chooses *how* the pool gets fresh block templates. The page states it plainly: "GBT + ZMQ is the proven default; IPC (Cap'n Proto, Bitcoin Core $\geq$ 31) pushes new templates ~90 ms faster but is experimental. A change takes effect after a daemon restart."

Option	What it is & who it's for
GBT + ZMQ (badge "default")	The classic path: <code>getblocktemplate</code> over RPC plus ZMQ notifications. Works with every Bitcoin Core version. For almost everyone, this is the right choice — leave it here.
IPC (badge "experimental")	A newer, faster path: the Cap'n Proto mining interface over a Unix socket of a multiprocess node, Bitcoin Core $\geq$ 31 . New tips arrive as a push in single-digit milliseconds. Opt-in and experimental.

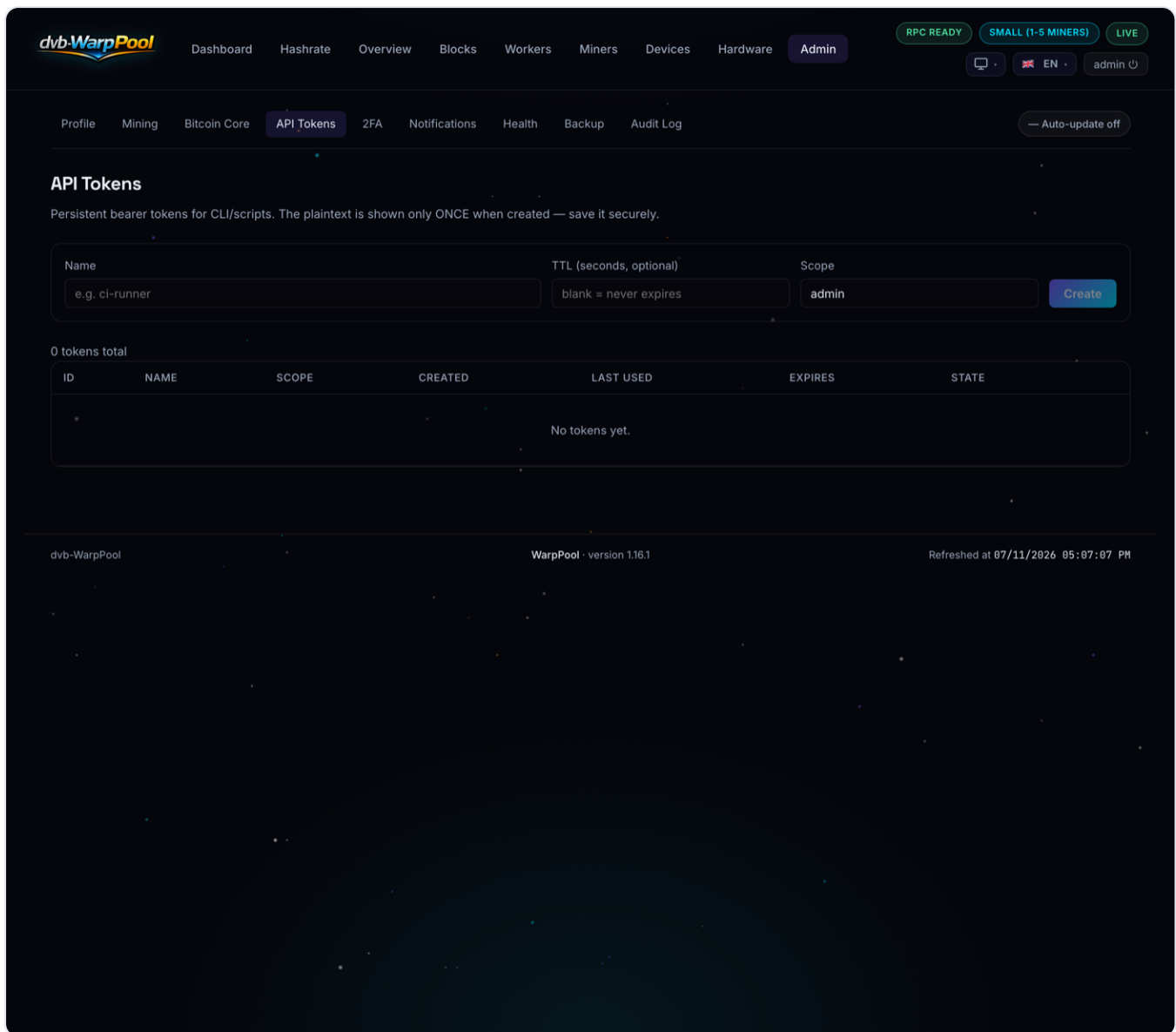
On Umbrel, IPC needs an extra step. Before it can work, open the **Bitcoin** app's settings and enable "**IPC Mining Interface**" (Bitcoin app $\geq$ 1.3.0 with Core **v31.0 / latest** — not v30.2). The pool page even warns you if the toggle is still off. Until it's on, the socket test will fail.

If you switch to **IPC**, two more fields appear: a **Unix socket path** (the Umbrel default is `/bitcoin/node.sock`) and a **Fee-delta push** in sats (0 = off). The recommended flow:

1. Enable "IPC Mining Interface" in the Bitcoin app (above).
2. Enter the socket path (`/bitcoin/node.sock` on Umbrel).
3. Click "**Test socket**" until it reports "**✓ Connection OK**". Other messages tell you what's wrong (wrong path, node down, the Bitcoin app's IPC toggle still off, no permission on the socket, or "old schema (Core $<$ 31)").
4. Click **Save**, then "**Restart daemon now**". There is no hot-switch — IPC only activates after the restart.

API Tokens (Admin → API Tokens)

Bearer tokens for scripts and the CLI — the plaintext is shown **only once** when you create one — copy it immediately. The form has **Name** (required), **TTL** (optional lifetime, blank = never expires), **Scope** (a free-text field, default `admin`) and **Create**. Existing tokens can be revoked with **Revoke**.



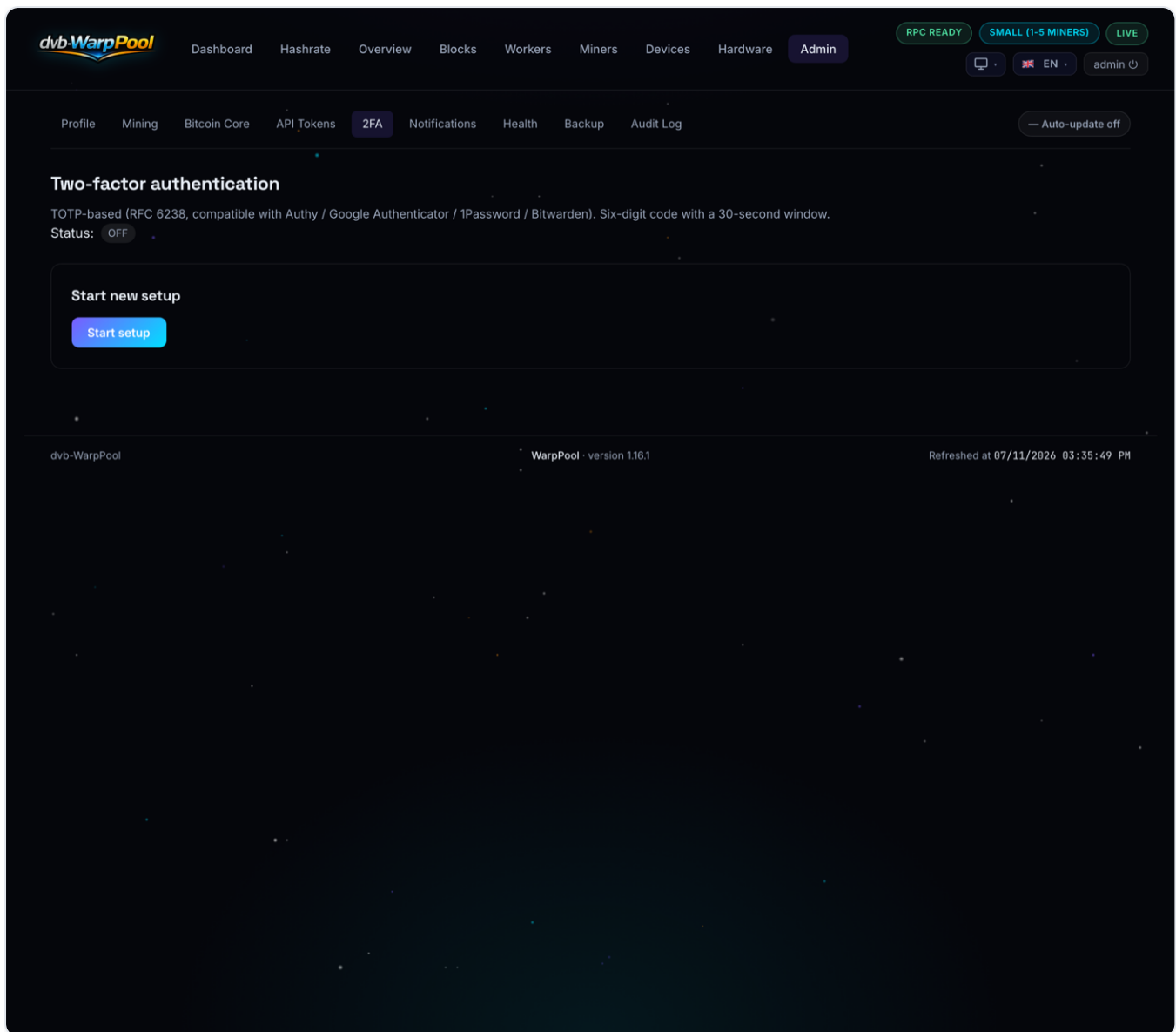
Admin → API Tokens: create bearer tokens for scripts and the CLI. The plaintext token is shown only once.

2FA (Admin → 2FA)

Two-factor authentication for the pool admin login, using any TOTP app. To turn it on: **Start setup**, scan the QR code (or use the Base32 secret), enter the code and click **Enable 2FA**. To turn it off you must enter a **valid current code**.

Recovery codes. When you enable 2FA the pool shows **10 one-time recovery codes** — save them somewhere safe (copy or download). If you ever lose your authenticator, enter one of these codes in place of the app code at login; each works once. The 2FA page shows how many remain and lets you regenerate a fresh set (which invalidates the old ones) using your current app code.

Save your recovery codes. They are shown only once. If you lose both your authenticator and your recovery codes, 2FA can only be cleared by deleting the `admin_2fa` row from the pool database.



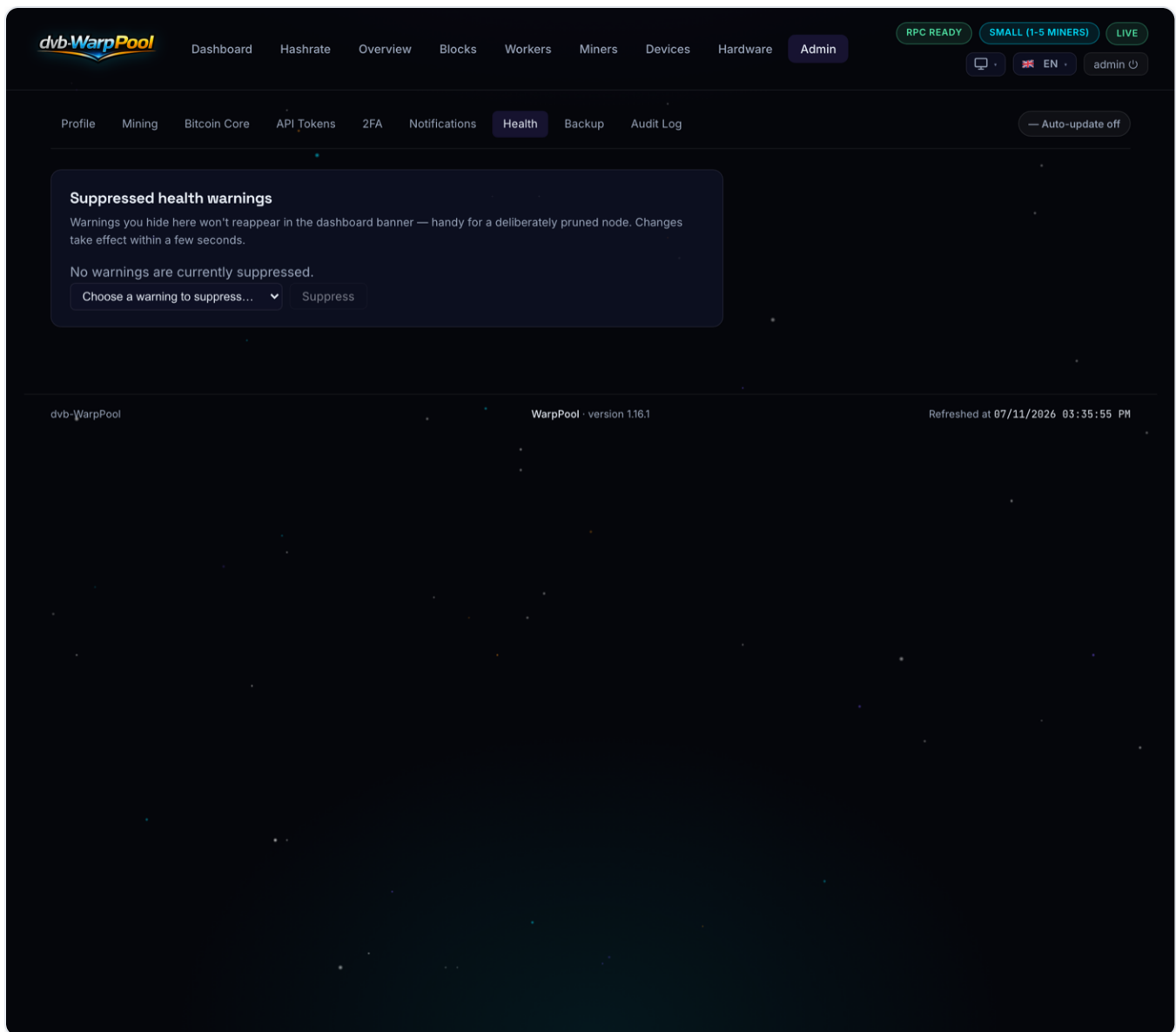
Admin → 2FA: turn on a TOTP second factor for the pool admin login. Here it is still off.

Notifications (Admin → Notifications)

Alerts for found blocks and health issues. Because it includes channels that work even when the app is closed, it has its own chapter 10.

Health (Admin → Health)

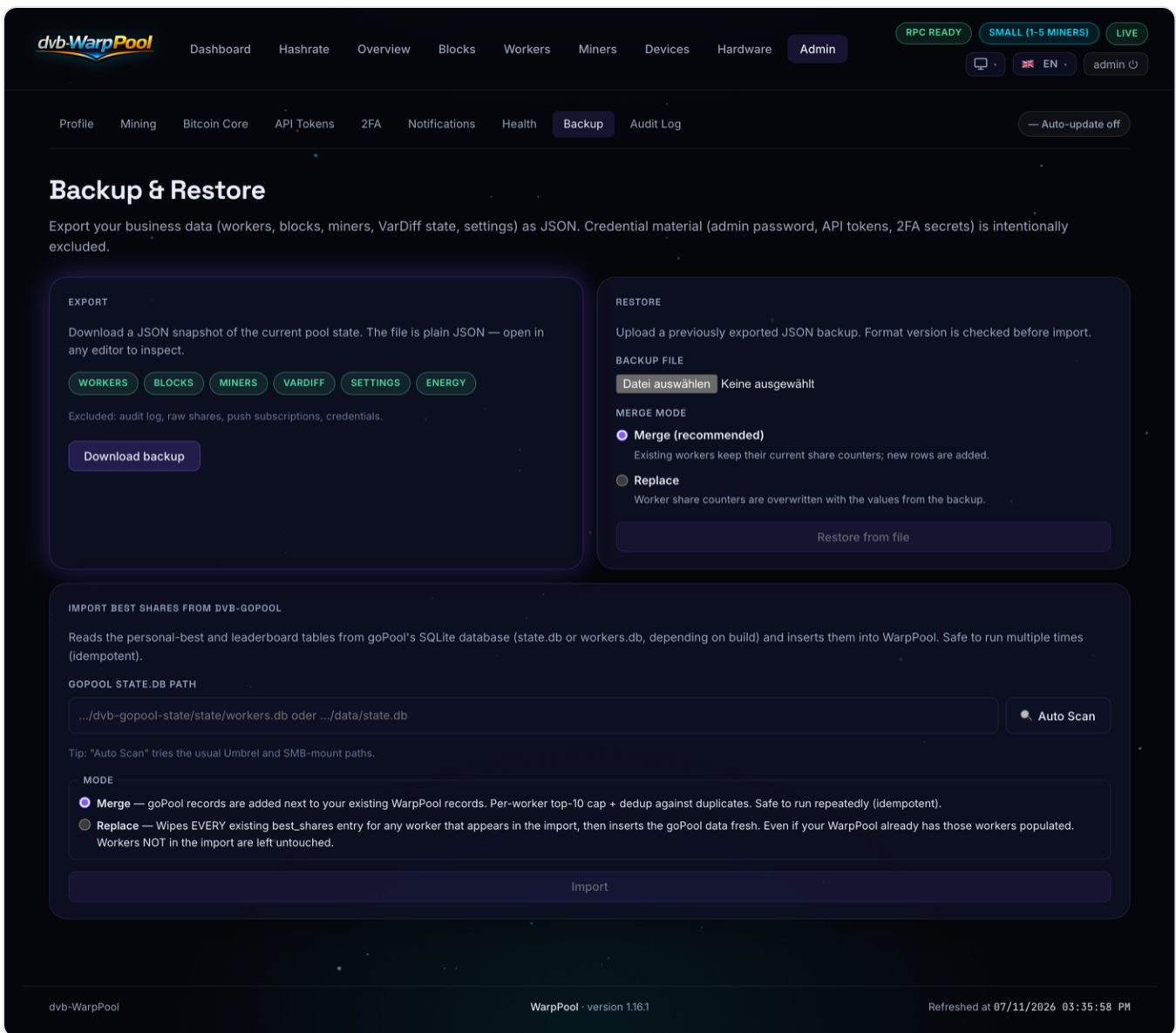
"Suppressed health warnings." Any warning you hide here won't reappear in the dashboard banner — useful for a deliberately pruned node. Pick a warning and click **Suppress**; **Show again** restores it. (The IPC "template stale" warning is hidden from the banner itself, then reappears here.)



Admin → Health: warnings you suppress here stop appearing in the dashboard banner.

Backup (Admin → Backup)

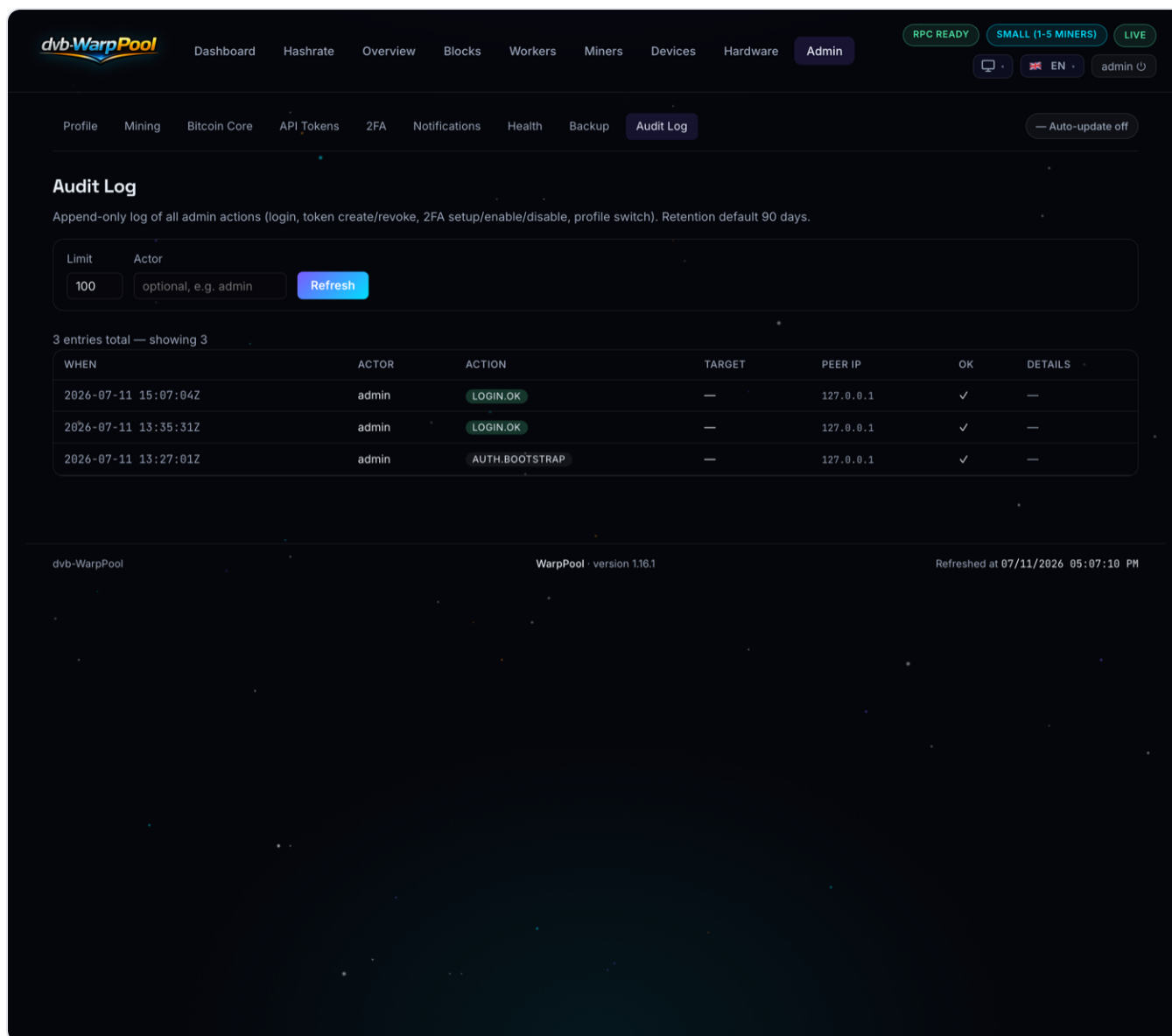
"Backup & Restore." **Download backup** saves a JSON snapshot of workers, blocks, miners, VarDiff, settings and energy — **never** credentials, raw shares or the audit log. To restore, pick a file and a mode: **Merge (recommended)** keeps existing workers; **Replace** overwrites share counters. A dedicated goPool best-shares importer is included too.



Admin → Backup: export a JSON snapshot (never credentials), restore with Merge or Replace, or import best shares from dVB-goPool.

Audit Log (Admin → Audit Log)

An append-only record of admin actions, kept 90 days by default. Filter by **Limit** and **Actor**. Read-only; empty it says "No audit entries yet."



Admin → Audit Log: each admin action (here LOGIN.OK and AUTH.BOOTSTRAP) is recorded append-only.

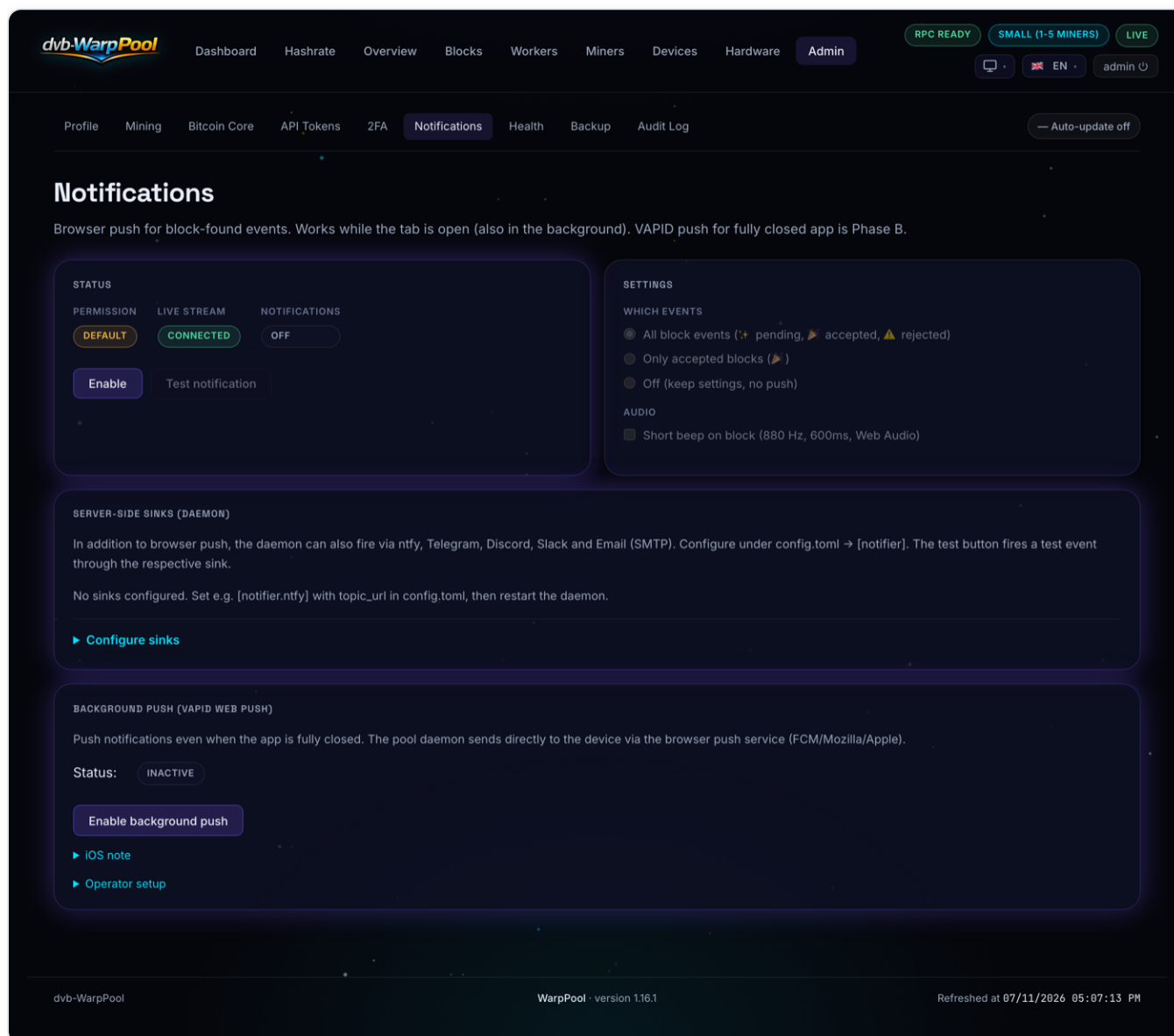
Update (Admin → Update)

Shows your installed version next to the latest. On Umbrel, updates come through the App Store (chapter 13) — the in-app one-click installer is a macOS-only feature and this page will point you to the releases page instead.

10 · Setting up notifications

dvb-WarpPool can tell you the moment a block is found (or a health issue arises). The **Admin** → **Notifications** page organises this into four cards.

Two kinds of notification — this is the key distinction. Browser notifications (the first two cards) only work while a browser tab is open on the pool, and they're blocked when you reach the pool over a plain `http://` LAN address. **Server-side sinks and background push** (the last two cards) are sent by the pool itself and arrive **even when the app is completely closed** — these are what you want for real alerting.



Admin → Notifications: its four cards are Status, Settings, Server-Side Sinks and Background Push.

Card 1 — Status (browser notifications)

Shows whether the browser has granted permission, whether the live stream is connected, and whether notifications are on. Buttons: **Enable** (ask the browser for permission), **Disable** (turn off), and **Test notification** (locked until permission is granted).

Card 2 — Settings (what to notify)

Locked until you enable notifications. Choose which events fire — all block events (pending, accepted, rejected), only accepted blocks, or off — and whether to play a short beep (880 Hz) when a block lands.

Card 3 — Server-Side Sinks (Daemon) — the reliable ones

These are sent by the pool daemon, so they work with the app closed: **ntfy**, **Telegram**, **Discord**, **Slack** and **Email (SMTP)**. Open **Configure sinks** and fill in the channel you want:

Channel	What you provide
ntfy	A topic URL (e.g. <code>https://ntfy.sh/your-topic</code>) — the simplest option; install the ntfy app on your phone and subscribe to the same topic.
Telegram	A chat ID and a bot token (create a bot with @BotFather).
Discord / Slack	A webhook URL from your server/workspace.
Email (SMTP)	An SMTP URL and password, plus sender and recipient addresses.

Save with **Save sink configuration**. Use the per-sink **Test** buttons to confirm delivery. **Saving sinks needs a daemon restart to take effect.**

Card 4 — Background Push (VAPID Web Push)

Web-push notifications that arrive even with the app fully closed. Buttons **Enable background push** / **Disable**. This requires the operator to have configured VAPID keys (via the CLI), and on iOS you must add the pool to your home screen as a PWA first (iOS 16.4+).

Simplest reliable setup: use **ntfy**. Pick a hard- to-guess topic, enter its URL as an ntfy sink, save, restart the daemon, and subscribe to the same topic in the free ntfy phone app. You'll get a push the instant a block is found — no open browser required.

11 · TLS and Stratum V2

Two optional, more advanced ways for miners to connect. Neither is required — plain Stratum on port `3333` is perfectly fine for a home LAN.

TLS (encrypted Stratum V1, port 3334)

TLS encrypts the connection between miner and pool. When it's enabled, the Connect panel shows a **Stratum (TLS)** line (`stratum+ssl://...`) and a "**↓ Download certificate (PEM)**" button, and TLS-connected miners get a  icon on the Miners tab.

The certificate is self-signed. That means:

- Firmware with a "**TLS Custom CA**" option works — upload the downloaded PEM file *and* use the exact hostname shown (not the raw IP address).
- Firmware that only trusts a fixed, bundled set of CAs (for example **BitForge Nano v1.5**) can *never* validate a self-signed cert — use the plain port `3333` for those.

Do I need a "real" certificate from Let's Encrypt? On Umbrel, almost certainly not. A publicly issued certificate requires a public domain name pointing at your box and a reachable way to answer the issuer's challenge — a home connection behind a router usually has neither, and Umbrel brings no certificate client for app ports. The self-signed certificate plus the "**↓ Download certificate (PEM)**" button is the intended route here: firmware that lets you add your own CA gets that file, and the connection is then both encrypted and authenticated, with no domain involved. It also does not expire on any timescale you need to care about.

A real certificate only becomes worthwhile if you deliberately open your pool to strangers under your own domain. In that case something on the same machine — Caddy, certbot — obtains and renews it and writes the files into the app's config directory, and you point `tls_cert_path` and `tls_key_path` at them. Since **v1.22.0** the pool picks up a renewed certificate by itself: you do not have to restart the app, and miners connected at that moment stay connected.

Stratum V2 (NOISE, port 34254)

Stratum V2 is a modern protocol with built-in encryption (the "NOISE" handshake). When enabled, the Connect panel shows a **Stratum V2 (NOISE)** line (`<host>:34254`) and, if configured, the **Sv2 authority public key** in Base58 — some firmware asks for this to authenticate the pool. Sv2-connected miners show a  icon on the Miners tab. Use this only if your firmware explicitly supports Stratum V2.

Not sure which to pick? Start on plain `3333` . Move to TLS only if you route mining traffic across an untrusted network, and to Sv2 only if your firmware advertises it.

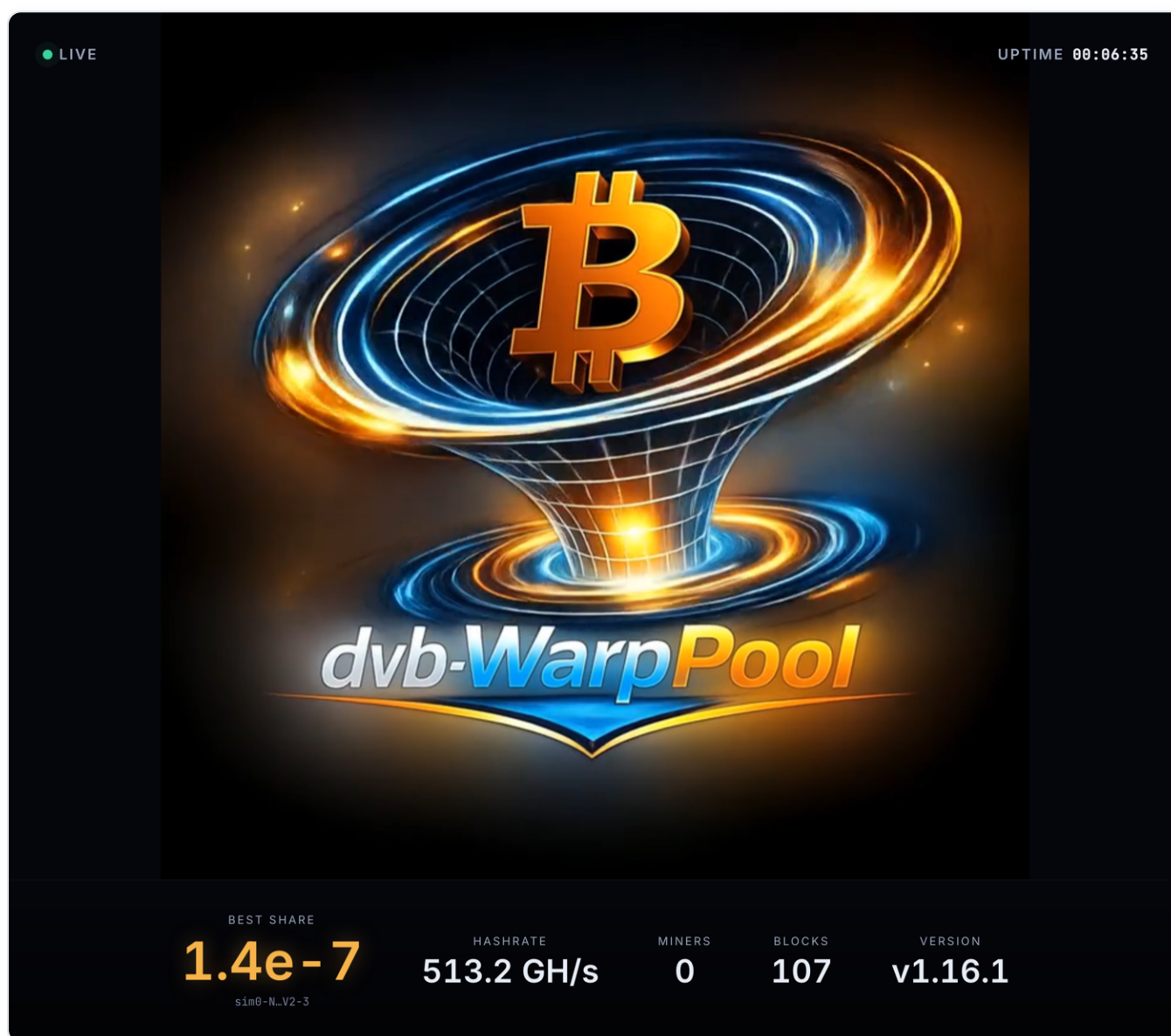
12 · Kiosk / screensaver mode

dvb-WarpPool has a built-in full-screen display mode — perfect for a wall monitor or a spare tablet showing your pool at a glance.

Open the **Display** menu (the monitor icon in the header). It offers:

- **Screensaver** — on/off (off by default). "Fullscreen display when idle."
- **Starts after** — 5, 10, 15 or 30 minutes of no interaction.
- **Show statistics** — on by default.

After the idle time, the screen goes full-screen with a looping video background, a "Live" badge, uptime, and a stat bar (best share, hashrate, miners, blocks and version). **Any key press or tap exits** and returns you to the normal interface.



Kiosk / screensaver mode: a full-screen live display with a statistics bar, ideal for a wall monitor.

It's a per-device setting. Like language and your card layout, the screensaver is stored in *this* browser only — set it up on each device you want to use as a display. Preview it immediately by adding `?screensaver=1` to the URL. If the device has "reduce motion" enabled, a static poster image is shown instead of the video.

13 · Updating the app

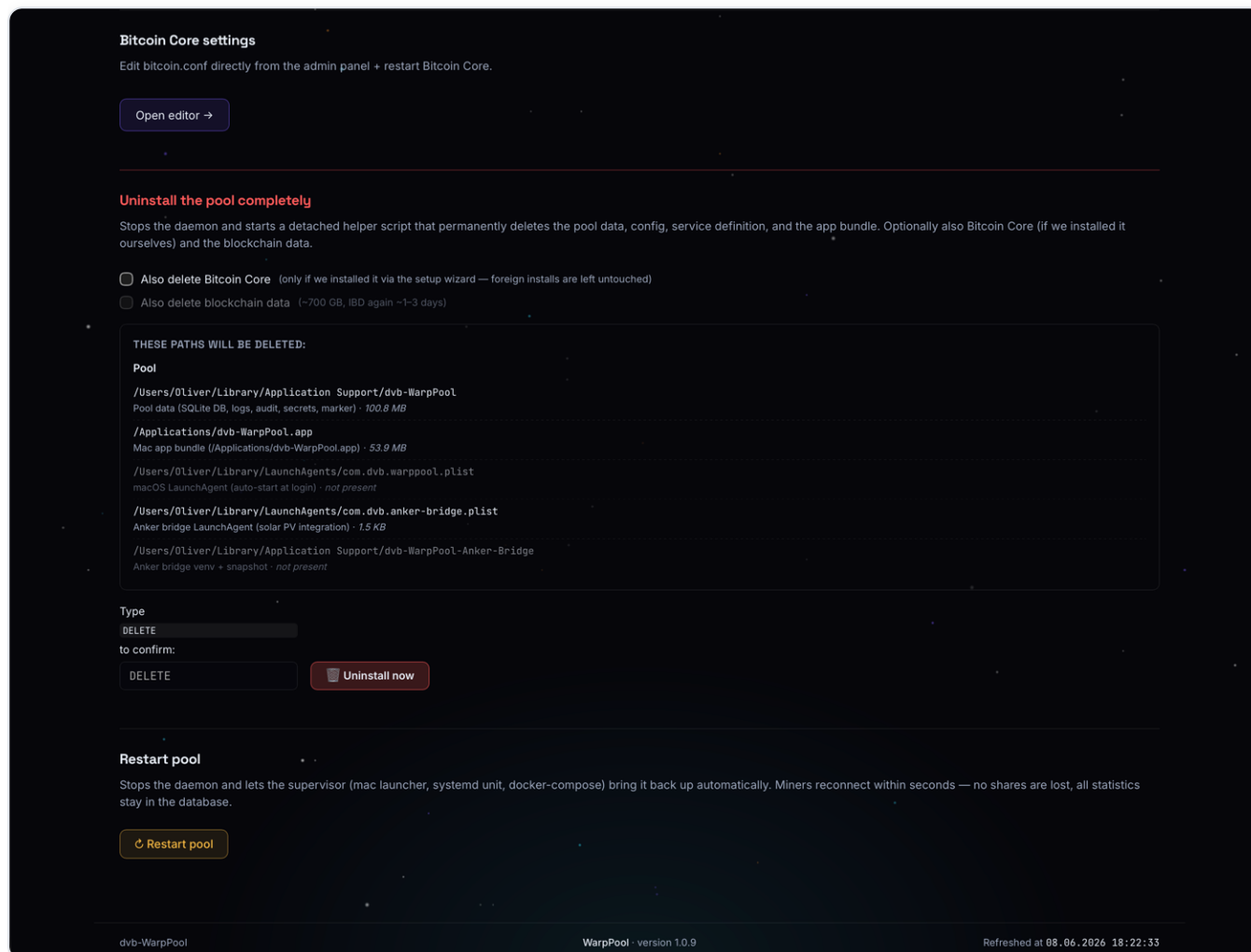
When a new dvb-WarpPool version is published to the community store, Umbrel shows an **Update** button on the app — just like any other Umbrel app. Click it and Umbrel pulls the new, digest-pinned image.

- Your configuration, database and statistics are preserved across updates.
- Miners reconnect automatically after the short restart.
- A brief flurry of reconnect messages right after an update is normal.

Not seeing the update yet? Umbrel refreshes community stores periodically. You can trigger a refresh from the App Store's three-dot menu.

14 • Uninstalling

You can remove dvb-WarpPool from Umbrel's app settings (long-press or open the app's settings and choose **Uninstall**), or from the app's own **Admin** → **Profile** → **Uninstall** section for a more thorough cleanup.



The in-app uninstaller shows exactly which paths will be removed and asks you to type DELETE.

The in-app uninstaller is deliberate and explicit: it previews the exact paths that will be removed, and to confirm you must type the word **DELETE** exactly into the field, then click "  **Uninstall now**".

Uninstalling deletes the pool's data (statistics, configuration, database). Your Bitcoin address and any coins already received by the network are of course unaffected — they live in your wallet, not in the pool. If you want to keep your statistics, take a backup first (chapter 9).

15 · Troubleshooting & FAQ

My miner won't connect

- Double-check the host (`umbrel.local` or the box's IP) and port `3333`.
- Make sure the worker/user field is your **Bitcoin address**, not a username.
- Confirm your miner and your Umbrel are on the same network.
- If your firmware is set to Stratum V2, either switch it to V1 on port `3333` or use the Sv2 port `34254`. If it's set to TLS but can't validate a self-signed certificate, use plain `3333` (chapter 11).

The pool shows no hashrate

- Give a new miner a minute or two to submit its first share.
- Very small miners submit rarely — the number will rise and fall.
- Check the miner's own screen: is it actually hashing and accepted?

"Bitcoin node not ready" or sync warnings

- Open the Bitcoin Node app and let it finish syncing to 100 %.
- The pool builds templates only once the node is synced.

I switched to IPC and the socket test fails

- On Umbrel you must enable "**IPC Mining Interface**" in the **Bitcoin** app's settings first (Bitcoin app $\geq$ 1.3.0, Core **v31.0**).
- Use the Umbrel socket path `/bitcoin/node.sock`.
- If in doubt, switch back to **GBT + ZMQ** — it always works. Remember the change only applies after "**Restart daemon now**".

Two menu items open a page titled "Miners"

That's expected — see the box at the start of chapter 7. **Miners** (the menu) is your read-only login list; **Devices** (the menu) is the interactive device manager. Both pages happen to carry the heading "Miners".

A tab is missing when I'm logged out

The Miners tab, Hardware tab and Energy card can be hidden from anonymous visitors. Log in, or turn their visibility toggles back on under Admin → Profile.

The "Live" indicator flickers

The small Live/Offline pill reflects the browser's live connection to the app. A brief flicker is cosmetic and does not affect mining — your miners stay connected and your shares keep counting.

When will I find a block?

Solo mining is probabilistic. Expected time to a block scales with the whole network's hashrate versus yours, so for small setups it can be very long — but every share has a real, non-zero chance, and the full reward is yours when it lands.

Are my rewards safe?

Yes. The pool never holds coins. A found block pays the reward directly to the address you configured, via the Bitcoin network. The pool only builds the work and broadcasts the solved block.

16 · Support & links

Documentation	docs.warppool.org
Source & issues	git.warppool.org/dvb-projekt/dvb-WarpPool
Feature comparison	docs.warppool.org/comparison.html
Community store	git.warppool.org/dvb-projekt/dvb-projekt-Umbrel-Community-App-Store
Contact	dvbprojekt@gmx.de

dvb-WarpPool is free and open-source software (AGPL-3.0-or-later, with a commercial licence available). This manual describes Version 1.24.0. Screens may differ slightly between releases. Mining is inherently probabilistic; nothing here is a promise of reward. Always keep control of your own Bitcoin keys.



Happy mining — and may your best share be a block.