



Your own Bitcoin solo-mining pool

Public 0% Solo Pool — Operator Manual

Running dwb-WarpPool as an open, non-custodial, zero-fee pool

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Contents

1 What a public 0% pool is

2 Turning on per-worker mode

3 What miners enter

4 Public wallet pages & the owner panel

5 Operator privacy

6 Accepting donations (optional)

7 Public hardening profile

8 TLS

9 Behind a reverse proxy

10 Deployment checklist

11 Support & links

1 · What a public 0% pool is

A public 0% pool turns dvb-WarpPool into an **open, non-custodial, zero-fee solo pool**: any miner who connects mines to *their own* Bitcoin address — taken from the Stratum login — and the full block reward goes straight to whoever finds the block, on-chain. The pool never holds funds. There is nothing to withdraw, and nothing to trust.

Technically this is **per-worker payout mode**. In the default `single` mode the whole reward pays one operator address — the ordinary "solo + friends" setup, where every miner works for *your* wallet. In **per-worker** mode each miner supplies its own address as the Stratum username, and the coinbase is built per-connection to pay exactly that address: **one output, the full subsidy, no fee**.

The four properties that define it

- **Non-custodial.** The pool never touches anyone's coins. The Bitcoin network pays the finder directly.
- **Per-worker.** Different miners can use different addresses; each keeps the full reward for the blocks it finds.
- **Full reward to the finder.** A single coinbase output pays the whole subsidy plus fees to the address in the winning miner's login — 0% skim.
- **Fail-closed.** The daemon refuses to start if a fee or operator donation is configured together with per-worker mode, so you cannot accidentally run a "public" pool that quietly skims the reward.

Honesty guardrail — please read. dvb-WarpPool has **not yet found a mainnet block**. The consensus path (per-worker coinbase → a real Bitcoin Core node accepts the block → the reward pays the finder) is verified end-to-end on regtest and signet, but the first mainnet block is still "**not yet**". Advertise the pool for exactly what it is — a fresh, open, non-custodial solo pool — and **never** as "battle-tested". If you publish a landing page, keep that guardrail visible.

Contrast with `single` mode. If you only want to mine your own rigs, or a fixed group of friends, all paying one wallet, stay in `single` mode — see the main *User Manual*. This operator manual is specifically about opening the pool up so strangers can point their miners at it and each keep what they find.

2 · Turning on per-worker mode

There are two routes to the same result: the setup wizard (recommended for a new install) or a one-line edit in `config.toml`. Both write the same `payout_mode = "per_worker"` flag.

Route A — the setup wizard

When you install through the setup wizard, its **Mining** card offers a **Pool type** choice: **Private solo pool** versus **Public 0% pool**. Picking **Public 0% pool** does three things for you:

- writes `payout_mode = "per_worker"`;
- hides the pool-wide **payout-address** field (it is unused in this mode — each miner brings its own);
- forces the **pool fee** to 0 and hides the fee fields.

No hand-editing is required.

The setup wizard's Mining card: choosing “Public 0% pool” switches the pool to per-worker payouts and hides the payout-address and fee fields.

Route B — `config.toml`

If you manage the config by hand, one flag is the whole feature switch:

```
[mining]
payout_mode = "per_worker"
# payout_address is IGNORED in per_worker mode (each miner brings its own).
# pool_fee_percent / operator_donation_percent MUST be 0 — the daemon
# refuses to start otherwise (full reward goes to the finder).
```

Fail-closed on fee or donation

The daemon **fails closed** on startup if a non-zero `pool_fee_percent` or `operator_donation_percent` is configured together with `per_worker`. It will not boot until the fee and donation are back at zero. This is a

deliberate safety invariant: a per-worker pool pays the finder the *full* reward, so there is no configuration in which it can silently take a cut.

Typos never pay the wrong person. An invalid or wrong-network login address is **rejected** at `mining.authorize` (Stratum V1) or `channel-open` (Stratum V2). There is **no fallback** to an operator address — a mistyped address is refused, never quietly redirected.

3 · What miners enter

A miner joining your public pool configures its Stratum login exactly as on any solo pool, with one rule: **the username is the miner's own Bitcoin address**, optionally followed by a rig label after a dot.

```
Username: bc1qyour-own-address.rig1
Password: x (anything – it is not used)
```

- Everything **before the first dot** is the payout address; anything after it is a free rig label used only for statistics.
- The password can be anything (commonly `x`).

Supported address types

Any valid mainnet address works. The pool accepts:

Type	Example prefix
P2PKH (legacy)	1...
P2SH (incl. wrapped SegWit)	3...
P2WPKH (native SegWit)	bc1q...
P2WSH (native SegWit script)	bc1q...
P2TR (Taproot)	bc1p...

Wrong address = refused, not redirected. If the login is not a valid address for this network, the miner is rejected at authorize time. There is no fallback address, so a typo simply fails to connect instead of paying the block reward to the wrong recipient.

4 · Public wallet pages & the owner panel

Every address that mines on your pool gets its own login-free status page — the "look up my address" flow a public solo pool is expected to have. Miners bookmark their own; nobody needs an account.

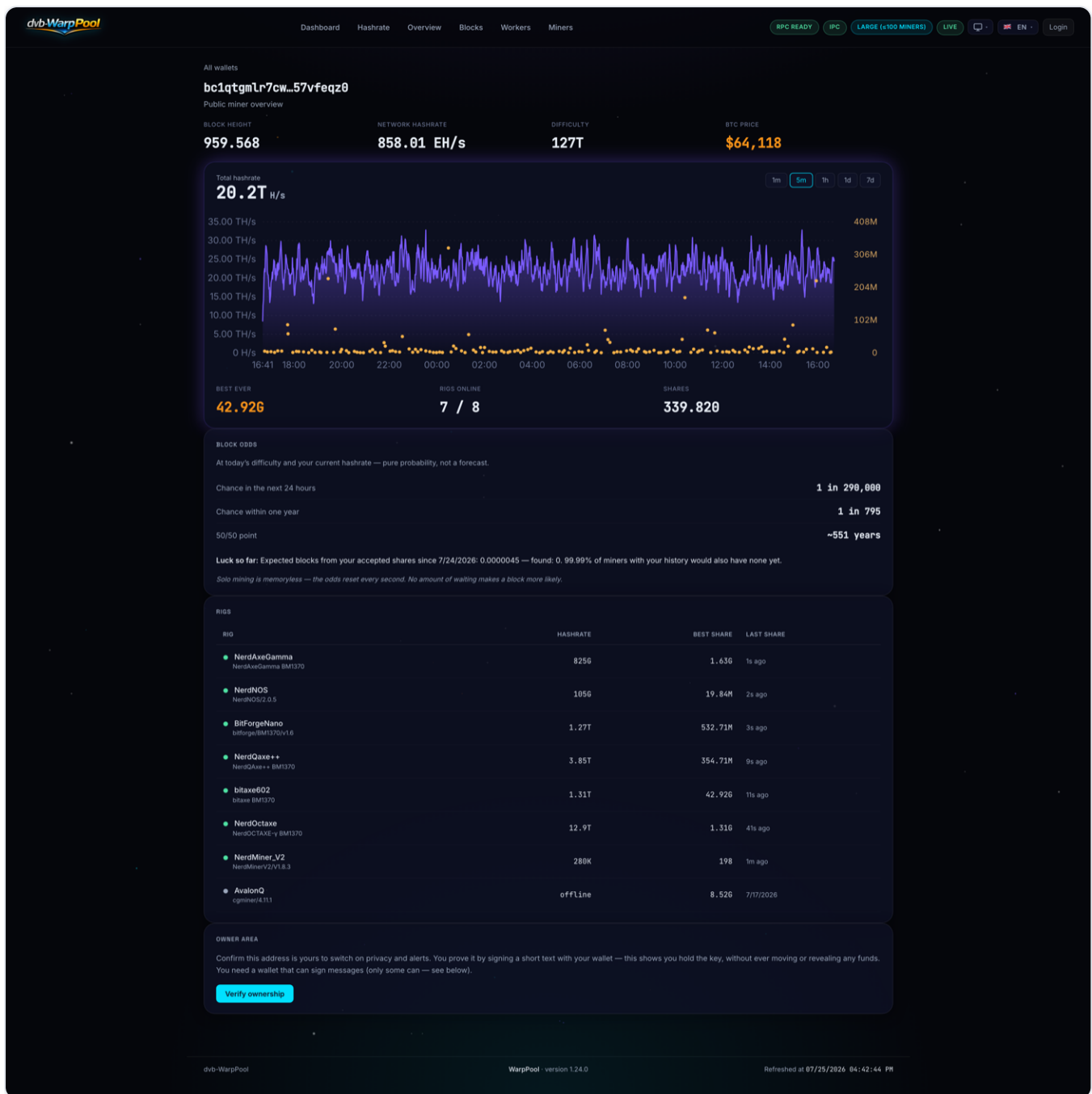
The public page at `/users/<address>`

Open `/users/<address>` and you see that address's:

- **Aggregate hashrate** over 1 m / 5 m / 1 h / 1 d / 7 d windows, summed across every rig logged in under the address;
- a **per-rig breakdown** — one row per `address.rig` login;
- **lifetime accepted shares** and the **best-ever share difficulty**;
- the **first-seen** time;
- an honest **block-odds panel** (see below).

No login, no operator involvement — anyone who has the address can open it.

The **block-odds panel** replaces the old single "estimated time to block" — a mean that reads as "never" for a home rig and hides the point of solo mining: the process is **memoryless**, every second a fresh draw with nothing getting closer. Instead it shows the real distribution: the **chance in the next 24 hours** and **within a year** (long odds as "1 in N", percentages floored so they never overstate), the **50/50 point** (median, not average), and **luck so far** — expected vs. found blocks with an honest "N % of miners with your history would also have none yet". A memorylessness footnote makes the core point explicit: no amount of waiting makes a block more likely.



A public per-wallet page at `/users/<address>`: aggregate hashrate, per-rig breakdown and best share — no login required.

ckpool-compatible JSON. The same numbers are served at `GET /api/users/<address>` in the ckpool field format (`hashrate1m` , `hashrate1hr` , `bestshare` , `worker[]` , ...), so miner firmware and stats tools such as `ckstats` can read it directly. Both routes are plain HTTP under the status port, behind the same reverse proxy as the dashboard.

The opt-in owner panel

By default a wallet page is public. A miner who wants more control can **prove ownership** of the address and unlock an owner panel — entirely per-miner, nothing the operator configures:

1. The page hands out a short one-time **challenge message**.
2. The miner signs it in their own wallet's *Sign Message* box — the standard BIP-137 "verify address" feature in Electrum, Sparrow, Bitcoin Core and hardware wallets. **No private key leaves the wallet, no**

funds move, no account is created — the pool only checks the signature.

3. A valid signature sets a short-lived owner cookie for that address and reveals two controls:

- **Privacy** — hide the address from the public wallet list and blank its `/users/<address>` data for everyone but the verified owner (the direct link still works, for them).
- **Notifications** — point a personal ntfy topic or webhook at this address's milestones: *block found*, a new *personal-best share* (across all its rigs), first entry into the pool's *all-time top 100*, and *rig-offline*. Each has its own cooldown against spam, and a found block sends one headline rather than three alerts.

Taproot works too now. Ownership signing covers single-key **P2PKH / P2WPKH / P2SH-P2WPKH** addresses (BIP-137) and **Taproot (P2TR)** via **BIP-322** — sign with a wallet that supports it, such as Sparrow. The owner panel needs **no operator config** — it is driven entirely by the miner.

5 · Operator privacy

A public mainnet pool should not hand out an enumerable list of everyone's address and rig setup. dvb-WarpPool gives you **two independent layers** of control. Both default to the open behaviour, so hardening here is opt-in.

Layer A — config: directory & leaderboard exposure

Two keys in `[privacy]` set the default exposure of the whole UI. In both cases the **logged-in operator still sees the full data** — these only affect anonymous visitors, so keep admin auth enabled.

```
[privacy]
# Hide the browsable Workers/wallet directory from anonymous visitors. Each
# /users/<address> page still works by direct link; the logged-in operator
# still sees the full directory (so keep admin auth enabled).
wallet_directory_public = false
# Mask the Bitcoin address in the public best-shares leaderboard, server-side.
# The logged-in operator still sees full addresses.
leaderboard_addresses_public = false
```

With this posture, miners reach their own page by link, but the pool doesn't publish a browsable list of everyone, and leaderboard addresses are masked server-side. It touches neither payouts nor block construction.

Layer B — Admin-UI visibility toggles

Under **Admin** → **Profile** a set of visibility toggles hide whole views from anonymous visitors:

- the **Devices** tab (the `/miners` route — the interactive device manager with per-device telemetry);
- the **Hardware** tab (host resources and size-profile picture);
- the **Energy** card on the dashboard.

Which "Miners" does the toggle hide? The visibility toggle controls the **Devices** tab — the `/miners` route with live device telemetry — **not** the Miners/workers listing. This matters because two menu items in the UI lead to pages titled "Miners"; the toggle is about the device-manager view.

Devices-tab visibility

Default: visible to everyone. When disabled, the "Devices" tab is hidden from the navigation for anonymous visitors; opening the page directly redirects them to the home page. Logged-in admins always see the tab.

☐ Devices tab visible to all visitors

Save

Hardware-tab visibility

Default: visible to everyone. When disabled, the "Hardware" tab is hidden from the navigation for anonymous visitors; a direct call to /hardware redirects them to the home page. Logged-in admins always see the tab.

☐ Hardware tab visible to all visitors

Save

Energy card visibility

Default: visible to everyone. When disabled, the Energy card on the dashboard and the energy section in the overview are hidden from anonymous visitors. Logged-in admins always see them.

☐ Energy card visible to all visitors

Save

Bitcoin Core settings

Edit bitcoin.conf directly from the admin panel + restart Bitcoin Core.

Open editor →

Admin → Profile: visibility toggles hide the Devices/Hardware/Energy views from anonymous visitors; addresses in the public leaderboard are masked server-side.

Recommended posture for public mainnet. Set `wallet_directory_public = false` and `leaderboard_addresses_public = false`, and hide the Devices, Hardware and Energy views from anonymous visitors. Miners still reach their own `/users/<address>` page by link; the operator keeps the full picture when logged in.

6 · Accepting donations (optional)

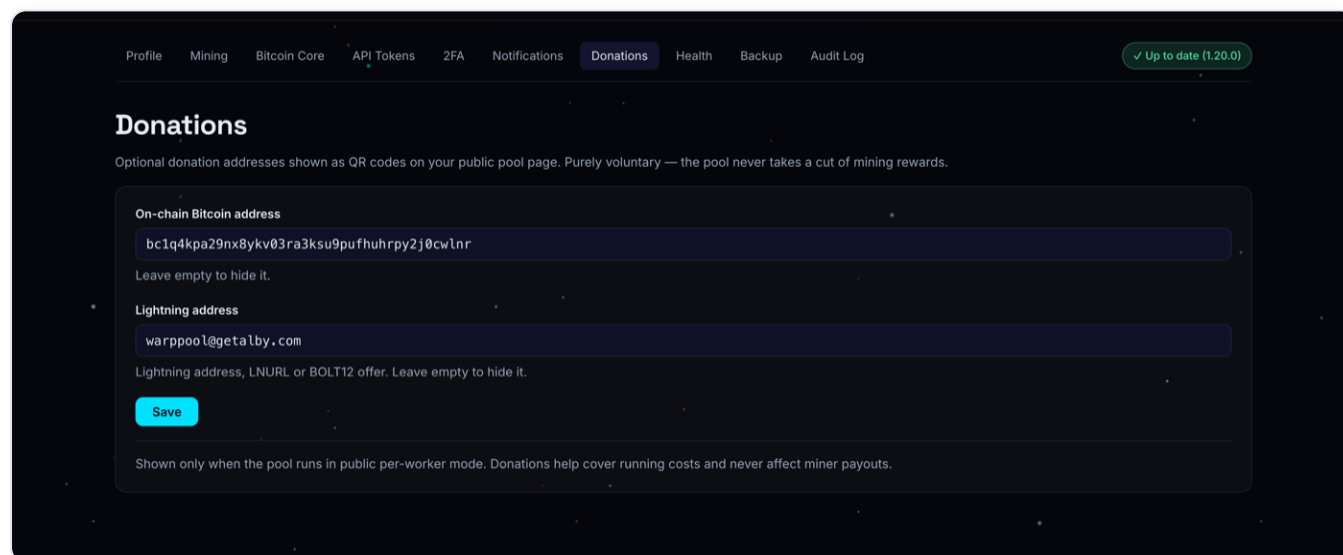
Because a per-worker pool takes **0%** of every reward, the only way to fund hosting is a voluntary donation. The dashboard has built-in support for this, and the whole feature appears **only in per-worker mode** — a private solo pool never shows it.

Setting the addresses

Set them under **Admin** → **Donations**. The nav entry is **hidden unless the pool runs in per-worker mode**.

Field	What to enter
On-chain	Any valid Bitcoin address. It is validated on save and shown as a <code>bitcoin:</code> QR code the visitor's wallet can open directly.
Lightning	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 with copy buttons and QR codes appears at the **bottom of the public dashboard**.

The screenshot shows the 'Donations' settings page in a dark-themed dashboard. At the top, there's a navigation bar with links: Profile, Mining, Bitcoin Core, API Tokens, 2FA, Notifications, Donations (highlighted), Health, Backup, and Audit Log. A green badge on the right says 'Up to date (1.20.0)'. Below the navigation bar, the title 'Donations' is followed by a subtitle: 'Optional donation addresses shown as QR codes on your public pool page. Purely voluntary — the pool never takes a cut of mining rewards.' The main form has two sections. The first is 'On-chain Bitcoin address' with a text input containing 'bc1q4kpa29nx8ykv03ra3ksu9pufhuhry2j0cwlnr' and a note 'Leave empty to hide it.' The second is 'Lightning address' with a text input containing 'warppool@getalby.com' and a note 'Lightning address, LNURL or BOLT12 offer. Leave empty to hide it.' Below these inputs is a blue 'Save' button. At the bottom of the form, a note states: 'Shown only when the pool runs in public per-worker mode. Donations help cover running costs and never affect miner payouts.'

Admin → Donations (per-worker pools only): set an on-chain and/or Lightning tip address; a Support card then appears on the public dashboard.

Donations never touch the block reward. These addresses are stored as pool settings (not `config.toml`), so saving takes effect immediately with **no restart**. They are plain operator metadata — they are **never mixed into coinbase construction**, so setting one cannot affect the fail-closed rule that a per-worker pool pays the finder the full reward. A "donation" here is a visitor sending sats to a displayed address, not a share of anyone's block reward.

dvb-WarpPool

Dashboard

Hashrate

Overview

Blocks

Workers

Miners

RPC READY

IPC

LARGE (≈100 MINERS)

LIVE

EN

Login

Dashboard

Live status of your Bitcoin solo pool.

How to connect your miner

POOL

POOL HASHRATE LIVE

23.02

TH/s

24h avg 21.97 TH/s

SHARE RATE

20.0

/min

3.33 /worker

BEST SHARE

883.48M

bc1qtg...eqz0.NerdOctaxe

upd. 15h ago

UPTIME

3h 31m

WORKERS

1

6 miner

ACTIVE MINERS

1 / 6

1 worker · 6 miner

1 SV2

BLOCKS

0

POOL FEE

0.00 %

NETWORK

NETWORK HASHRATE

848.19

EH/s

DIFFICULTY

127.17 T

LAST DIFF CHANGE

-5.00 %

at Block #957,600

DIFF FORECAST

+1.14 %

at Block #959,616

NEXT DIFF

9d 2h

1,323 blocks remaining

BLOCK HEIGHT

958.293

BTC PRICE

\$64,587

56,420 €

upd. 1m ago

CHAIN

main

Bitcoin Core 31.1.0

POOL HASHRATE (24H)

Full view →

40.0 TH/s

35.0 TH/s

30.0 TH/s

25.0 TH/s

20.0 TH/s

15.0 TH/s

10.0 TH/s

5.00 TH/s

0 TH/s

16:31

18:00

20:00

22:00

00:00

02:00

04:00

06:00

08:00

10:00

12:00

14:00

16:00

1.10G

828M

552M

276M

0

ACTIVE WORKERS

USER	HASHRATE	DIFF	SHARES	LAST SEEN
bc1qtg...eqz0.NerdQaxe++	3.51 TH/s	24.55k	2.00 /min	2s ago
bc1qtg...eqz0.BitForgeNano	2.64 TH/s	9.24k	4.00 /min	8s ago
bc1qtg...eqz0.NerdOctaxe	10.17 TH/s	28.42k	5.00 /min	10s ago
bc1qtg...eqz0.bitaxe602	1.50 TH/s	6.98k	3.00 /min	29s ago
bc1qtg...eqz0.NerdAxeGamma	1.97 TH/s	4.59k	6.00 /min	31s ago
bc1qtg...eqz0.NerdMiner_V2	323.1 KH/s	0.006	0.80 /min	36s ago

All workers →

BEST SHARES

All Time

Per Worker

Rank	Worker	Difficulty	When	Hash
1	bc1qtg...eqz0.NerdOctaxe	883.48M	15h ago	4dc7f73dd6dc...1f8c80216f83
2	bc1qtg...eqz0.bitaxe602	715.61M	17h ago	60070fa3cef6...647e48f1dbc8
3	bc1qtg...eqz0.NerdOctaxe	138.78M	20h ago	1ef2c44f1042...1552cea85f43
#4	bc1qtg...eqz0.NerdOctaxe	65.02M	21h ago	420eb2f9de7e...5f6ead458156
#5	bc1qtg...eqz0.BitForgeNano	63.51M	11h ago	43a05f10d24a...636eb94080d
#6	bc1qtg...eqz0.NerdQaxe++	57.28M	1h ago	4afb3da9eeb2...681a6844d170
#7	bc1qtg...eqz0.NerdOctaxe	45.17M	30m ago	5f176ce100a5...55648c612e03
#8	bc1qtg...eqz0.NerdQaxe++	43.16M	17h ago	6381132ac061...e98d5c261f57
#9	bc1qtg...eqz0.NerdQaxe++	33.86M	20h ago	7edb12996e47...00b0a1299fb8
#10	bc1qtg...eqz0.NerdOctaxe	32.73M	10h ago	83388640ee3c...011d6e88cf8e

Show all (50)

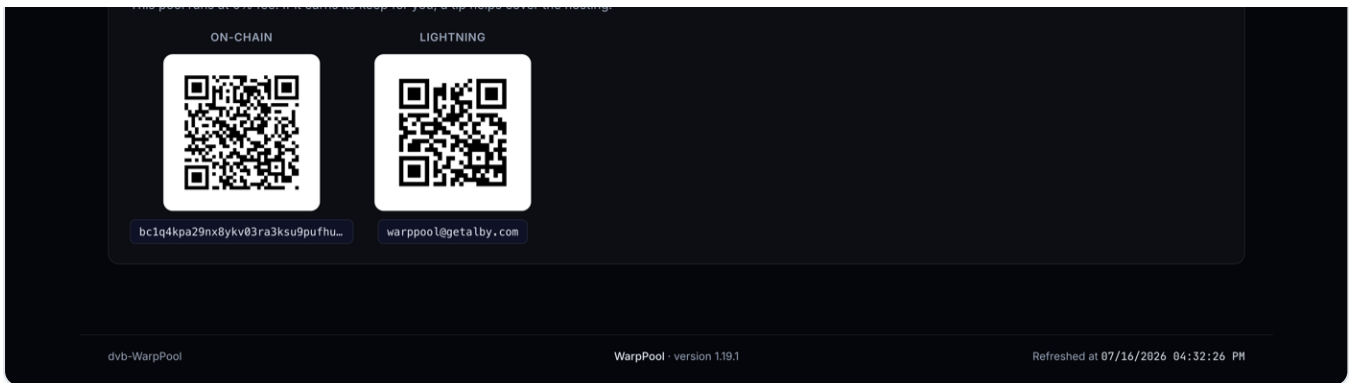
RECENT BLOCKS

No blocks found yet.

Solo mining is a marathon — hashrate × luck × patience.

Support the pool

This pool runs at 0% fee. If it earns its keep for you, a tip helps cover the hosting.



The public dashboard as an anonymous visitor sees it — live pool and network stats, a best-shares leaderboard with masked addresses (each miner keeps its rig label), and the optional Support card with donation QR codes at the bottom.

Announcing maintenance to your miners

A public pool has visitors you cannot reach on Discord. Under **Admin** → **Banner** you can put a short notice — a maintenance window, a planned node resync — as a scrolling strip along the top of the pool page, where everyone mining with you will see it. You set how long it should run (minutes, hours or days) and it disappears on its own when that time is over, so a forgotten notice cannot linger; a Stop button ends it early. The text is shown as plain text and is capped at 200 characters. Announcing planned downtime this way is simply good manners on a pool other people rely on.

7 · Public hardening profile

A pool exposed to the internet needs the abuse controls a friends-only pool can skip. Every key below already exists; none is per-worker-specific — they apply to any public deployment.

```
[stratum]
# Bound how many simultaneous V1 connections one source IP may hold. On a
# public pool this stops a single host from hogging slots. Leave 0 only if you
# expect many miners behind one NAT.
max_connections_per_ip = 50

[ratelimit]
enabled = true
connects_per_sec = 5
connect_burst = 20
auths_per_sec = 1.0
auth_burst = 10

# Auto-ban IPs that keep tripping the connect limit (escalating). Loopback and
# private LAN are never banned.
autoban_enabled = true
autoban_strikes = 3
autoban_base_secs = 60
autoban_max_secs = 86400
autoban_window_secs = 600

# Ban a worker that floods invalid shares (share-flood defence). Off by
# default; turn on for a public pool.
reject_ban_enabled = true
reject_ban_min_samples = 100
reject_ban_ratio = 0.9

# Optional subnet access control. `ban_cidrs` denies ranges outright;
# `allow_only = true` flips to a strict whitelist (only allow_cidrs connect).
# ban_cidrs = ["203.0.113.0/24"]
# allow_only = false
# allow_cidrs = ["192.168.0.0/16"]
```

Invite-only variant

Combine per-worker payouts with an **address allowlist** so only known addresses may mine. A miner whose payout address is not listed is rejected on both transports (V1 authorize and Sv2 channel-open):

```
[mining]
payout_mode = "per_worker"
address_allowlist = ["bc1qalice...", "bc1qbob..."]
```

An empty `address_allowlist` (the default) leaves the pool open to anyone. Note that `allow_only` / `allow_cidrs` gate *which networks* may connect, while `address_allowlist` gates *which payout addresses* may mine — the two are independent.

8 · TLS

Firmware that only trusts public certificate authorities needs a real certificate. The relevant keys live in

`[stratum]`:

```
[stratum]
stratum_tls_listen = ":3334"
tls_cert_path = "/etc/dvb-warppool/tls/cert.pem"
tls_key_path = "/etc/dvb-warppool/tls/key.pem"
tls_reload_secs = 300
```

Leave the two paths **unset** to use the daemon's auto-generated self-signed certificate — fine for NerdMiner/Bitaxe-class firmware that lets you pin it.

Renewals take care of themselves. A real certificate from Let's Encrypt is replaced every couple of months, and whatever issued it — Caddy, certbot, your own PKI — simply rewrites those two files. The pool notices that and starts serving the new certificate on its own. You do not have to restart it, and miners that are connected at the time stay connected: they keep the certificate they already agreed on, and only new connections get the fresh one. `tls_reload_secs` is how often the pool looks (300 seconds by default; set it to `0` to switch the check off). If a renewal is caught half-written, the pool keeps serving the old certificate and tries again on the next check rather than dropping the listener.

Stratum V2. If you also run Stratum V2, it listens on its own `sv2_listen` address (default `:34254`). The Sv2 transport is always NOISE-encrypted, so it needs no separate TLS certificate. Miners additionally need the pool's NOISE authority public key to connect at all.

9 · Behind a reverse proxy

When the status UI is served over HTTPS through nginx or Caddy, set three keys in `[server]`:

```
[server]
status_public_url = "https://pool.example.com"
trust_proxy_headers = true      # so per-IP limits see the real client IP
cookie_secure = true           # UI is HTTPS
# status_tls_listen = ":18443"  # or terminate TLS at the proxy instead
```

`status_public_url` lets the UI build absolute URLs for web-push and email links. Set `cookie_secure = true` whenever the UI is reached over HTTPS.

Only trust proxy headers you control. With `trust_proxy_headers = true` the daemon trusts the `X-Forwarded-For` header to identify the real client IP. Enable it **only** when a proxy you control actually sets that header — otherwise a client could **spoof its IP** straight past your per-IP limits and bans.

10 · Deployment checklist

Run through this before opening the pool to the public:

- ☐ `payout_mode = "per_worker"`, with **no** pool fee or operator donation (the daemon starts — it fails closed otherwise).
- ☐ Bitcoin Core reachable; consider `[node] template_source = "ipc"` for lower latency (needs Core $\geq$ 31 built with IPC — GBT stays the default).
- ☐ `[ratelimit] enabled = true` with `autoban_enabled` and `reject_ban_enabled` on.
- ☐ `max_connections_per_ip` set (unless your miners sit behind one NAT).
- ☐ TLS in front of Stratum (your own certificate for public-CA-only firmware).
- ☐ Reverse proxy: `trust_proxy_headers` and `cookie_secure` set correctly.
- ☐ Test a miner with `your-address.rig1`; confirm it appears at `/users/<address>` and that its shares are accepted.
- ☐ If you publish a landing page, keep the honesty guardrails: no "battle-tested"; the mainnet block is "not yet".
- ☐ Optional `[legal]` footer (terms/privacy links) for a public or commercial deployment.

11 · Support & links

Online guide	docs.warppool.org/public-pool-setup.html
Source & issues	git.warppool.org/dvb-projekt/dvb-WarpPool
Feature comparison	docs.warppool.org/comparison.html
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. Solo mining is inherently probabilistic; nothing here is a promise of reward. A public 0% pool is non-custodial — the pool never holds anyone's coins, and the finder is paid the full reward directly by the Bitcoin network.



Open, non-custodial, zero-fee — and may the finder keep it all.