Bitcoin Miner WireGuard Hub

Setup Guide

Version 1.0.37

BTC MINER TOOLS

This guide configures the supported remote network for Bitcoin Miner: one publicly reachable Ubuntu/Debian Linux WireGuard Hub, one or more Mac or Linux peers, and private mining connections on the fixed `10.20.0.0/24` subnet.

The Hub is a private WireGuard rendezvous point. It does not mine unless you install the Linux Worker on it separately. TCP port `38473` remains inside WireGuard; only the Hub's WireGuard UDP port is reachable from the Internet.

Topology and example addresses

Device	Example address
Linux Hub	`10.20.0.1`
Mac running the Coordinator	`10.20.0.2`
Remote Mac Worker	`10.20.0.3`
First Linux Worker	`10.20.0.11`

> Worked example: Use these values for a first installation. Advanced users may choose other unused suffixes inside `10.20.0.0/24`.

The apps deliberately recognize the `10.20.0.x` product subnet. It is not an in-app preference. Never expose TCP `38473` on a public IP.

Before you begin

You need:

- An Ubuntu/Debian VPS with a public IPv4 address or public DNS name for the Hub.
- The Linux package on the Hub and every Linux Worker.
- The official WireGuard app on every Mac that must reach remote Workers.
- A unique `10.20.0.x` address for every WireGuard machine.

Download the current Linux package from:

```
http://btcminertools.com/Downloads/SHA-BTC-Linux-Worker-v3.2.tar.gz
```

On each Linux machine:

```
tar -xzf SHA-BTC-Linux-Worker-v3.2.tar.gz
cd LinuxWorker
```

The archive creates the `LinuxWorker` directory and retains the executable permissions of both setup scripts.

1. Install the Linux Hub

On the Hub:

```
cd LinuxWorker
sudo ./setup-vpn-hub.sh init
```

Use these answers for the worked example:

> Hub address x: 1 → `10.20.0.1`
> WireGuard UDP port: press Return for `51820`
> Public Hub hostname or IP: the Hub's public DNS name or IPv4 address

The installer creates `/etc/wireguard/wg0.conf`, enables IP forwarding and starts `wg-quick@wg0`. It does not install the mining Worker.

Firewall handling:

- Active UFW: the installer allows the selected UDP port automatically.
- FFG detected: the installer calls `ffg allow PORT` automatically and reports the result.
- Neither detected: the installer prints a warning. Configure the UDP port in the local and VPS-provider firewalls manually.

Confirm the Hub:

```
sudo ./setup-vpn-hub.sh show
ip -4 addr show wg0
sudo systemctl status wg-quick@wg0 --no-pager
```

The example Hub address is `10.20.0.1/24`. Keep the printed Hub public key; every remote peer needs it.

2. Install and register a Linux Worker

On a remote Linux Worker:

```
tar -xzf SHA-BTC-Linux-Worker-v3.2.tar.gz
cd LinuxWorker
sudo ./setup-vpn-worker.sh
```

Use these answers for the first Linux Worker:

```
Worker address x: 11 → 10.20.0.11
Public Hub hostname or IP: the public Hub address from step 1
WireGuard UDP port: press Return for 51820
Hub public key: paste the key printed by the Hub
Maximum mining CPU percent: press Return for 85
```

The installer creates the Worker's WireGuard tunnel, builds and installs `sha-btc-worker`, and configures TCP port `38473` through FFG or active UFW. If neither is detected, its final summary prints a manual firewall warning.

The installer prints the Worker public key. Return to the Hub and register it:

```
cd LinuxWorker
sudo ./setup-vpn-hub.sh add-worker
```

```
Worker address x: 11
Worker display name: de-du
Worker public key: paste the key printed by the Linux Worker
```

Repeat with `.12`, `.13` and so on for additional Linux Workers.

Do not try to add these endpoints in the Coordinator yet. The Coordinator Mac must join WireGuard first.

3. Optionally let the Hub mine

The Hub does not have to be a mining Worker. If it should only route WireGuard traffic, skip this section.

To use spare Hub CPU for mining, run the same Worker installer on the Hub:

```
cd LinuxWorker
sudo ./setup-vpn-worker.sh
```

The installer detects the managed Hub configuration and behaves differently:

- it reuses the Hub's existing `wg0` interface and `10.20.0.1` address;
- it does not create a second WireGuard interface or key pair;
- it does not add the Hub as its own peer;
- it adds the Hub Worker name to the existing Hub configuration;
- it installs `sha-btc-worker` on `10.20.0.1:38473`.

```
Hub Worker display name: hub or a location name such as de-du
Maximum mining CPU percent: press Return for 85
```

When installed, the Hub Worker has two roles: it can mine when selected, and its connection supplies the centrally named Linux Worker registry. Without the Hub Worker, remote mining still works, but each Worker endpoint must be added to the Coordinator individually.

4. Configure Mac WireGuard tunnels

Each physical Mac needs at most one WireGuard tunnel for this mining network. Bitcoin Miner Worker and Bitcoin Miner Coordinator on the same Mac share that tunnel and the same `10.20.0.x` address.

Do not create separate Worker and Coordinator tunnels on one Mac.

Coordinator Mac in the worked example

In the WireGuard app, choose Add Empty Tunnel. The app generates one public/private key pair. Copy the public key, then on the Hub run:

```
cd LinuxWorker
sudo ./setup-vpn-hub.sh add-peer
```

```
Peer address x: 2 → 10.20.0.2
Peer display name: Mac Coordinator
Peer public key: paste the Mac's public key
```

Use this tunnel on the Mac:

```
[Interface]
PrivateKey = <Mac private key>
Address = 10.20.0.2/32

[Peer]
PublicKey = <Hub public key>
Endpoint = <public-hub-host-or-ip>:51820
AllowedIPs = 10.20.0.0/24
PersistentKeepalive = 25
```

If Bitcoin Miner Worker also runs on this Mac, it automatically uses the same `.2` tunnel. The Coordinator reaches that Worker locally as Local · Mac; no second WireGuard Worker registration is required.

Separate remote Mac Worker

Only a Worker on another remote Mac needs its own tunnel. Create one on that Mac and register it on the Hub with:

```
sudo ./setup-vpn-hub.sh add-worker
```

```
Worker address x: 3 → 10.20.0.3
```

Use the same profile structure but set `Address = 10.20.0.3/32` and use that Mac's own key pair.

5. Activate the Coordinator and add Workers

Activate the WireGuard tunnel on the Coordinator Mac first. Bitcoin Miner Coordinator should show:

```
WireGuard 10.20.0.2
```

Now test a Linux Worker:

```
nc -vz 10.20.0.11 38473
```

Then choose the matching path:

Pure Hub without mining Worker

Add every remote Worker individually in the Coordinator Setup Assistant:

```
10.20.0.11:38473
```

```
10.20.0.12:38473
```

Do not add `10.20.0.1:38473`; a pure Hub has no service listening there.

Hub with optional mining Worker

Add the Hub once:

```
10.20.0.1:38473
```

The resulting WireGuard · Linux row is the Hub's own mining Worker. The same connection supplies the registry; click Refresh to import all named Linux Workers. Select Use for the Hub only if it should also mine.

Remote Mac Worker

Add its endpoint, for example:

```
10.20.0.3:38473
```

A Worker on the Coordinator Mac itself appears as Local · Mac and needs no manual endpoint.

6. Verify the installation

On the Hub:

```
sudo wg show wg0
sudo systemctl status wg-quick@wg0 --no-pager
```

On a Linux Worker:

```
ip -4 addr show wg0
sudo ss -ltnp | grep 38473
sudo systemctl status sha-btc-worker --no-pager
```

Every active peer should show a recent WireGuard handshake after it sends or receives traffic.

7. Stop, disable or uninstall

Linux Worker

Stop mining until the next start or reboot:

```
sudo systemctl stop sha-btc-worker
```

Stop mining and prevent automatic startup:

```
sudo systemctl disable --now sha-btc-worker
```

Remove the Worker program and systemd service while retaining its configuration and WireGuard tunnel:

```
cd LinuxWorker
sudo ./setup-vpn-worker.sh uninstall
```

The retained files in `/etc/sha-btc-worker` allow a later reinstall. Removing a remote Worker completely also requires removing its managed WireGuard configuration and its peer entry on the Hub. Back up those files before deleting them.

WireGuard Hub

Stop the Hub tunnel until the next start or reboot:

```
sudo systemctl stop wg-quick@wg0
```

Stop the Hub and prevent automatic startup:

```
sudo systemctl disable --now wg-quick@wg0
```

Permanently remove the managed Hub with:

```
cd LinuxWorker
sudo ./setup-vpn-hub.sh uninstall
```

If the optional Hub Worker is installed, the command refuses to continue until you run `sudo ./setup-vpn-worker.sh uninstall`. Type `REMOVE` at the confirmation prompt. The Hub installer stops `wg-quick@wg0`, saves the WireGuard configuration and keys in a timestamped directory below `/root`, and then removes only the files it manages. WireGuard packages remain installed. Remove the Hub UDP rule from FFG, UFW and the VPS-provider firewall separately when it is no longer needed.

8. Boot persistence

On the Hub:

```
sudo ./setup-vpn-hub.sh autostart
```

The Linux Worker installer enables both WireGuard and `sha-btc-worker`. Verify after a reboot with:

```
sudo systemctl status wg-quick@wg0 --no-pager
sudo systemctl status sha-btc-worker --no-pager
```

Troubleshooting

No WireGuard handshake

- Verify the public Hub hostname/IP and UDP port.
- Verify the Hub and VPS-provider firewalls allow that UDP port.
- Check every key and ensure every `10.20.0.x` address is unique.
- Confirm a Mac profile uses `AllowedIPs = 10.20.0.0/24` and `PersistentKeepalive = 25`.

The Coordinator cannot reach a Worker

- Confirm the Coordinator tunnel is active before testing private addresses.
- Test `nc -vz WORKER_ADDRESS 38473` from the Coordinator Mac.
- Check that the Linux Worker listens on its private address.
- Confirm the Worker firewall permits TCP `38473` on the WireGuard interface.
- Confirm the Hub permits WireGuard-to-WireGuard forwarding.

Named Linux Workers are not imported

- Automatic registry import requires the optional Hub Worker on `10.20.0.1:38473`.
- Add that Hub endpoint only after the Coordinator tunnel is active.
- Without the Hub Worker, add every Worker endpoint individually.

Security checklist

- [ ] The selected WireGuard UDP port is open only on the Hub.
- [ ] TCP `38473` is not exposed on a public IP.
- [ ] Every machine has one unique private address and private key.
- [ ] One Mac does not have duplicate Worker and Coordinator tunnels.
- [ ] The Coordinator selects a Worker only after its endpoint test succeeds.