

drif-protocol

A breakthrough in self-hosted, sovereign solo mining.

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Introduction

This guide documents the Umbrel edition of drif-protocol—enabling sovereign solo Bitcoin mining on your Umbrel Home device.

No third-party pools, complete control of rewards, minimal overhead.

System Requirements

Umbrel Home (Raspberry Pi or equivalent) with Umbrel OS and Bitcoin app installed.

SSH access to Umbrel (via Terminal or PowerShell).

USB SHA-256 miner (e.g., Bitaxe Gamma, GekkoScience).

A non-custodial Bitcoin address to receive mining rewards.

Step 1: SSH into Umbrel

Open Terminal (macOS/Linux) or PowerShell (Windows) and run:

```
ssh umbrel@
```

Enter your Umbrel password to connect.

Step 2: Enable Docker Compose

Install the plugin:

```
sudo apt install docker-compose-plugin
```

Symlink for compatibility:

```
sudo ln -sf /usr/libexec/docker/cli-plugins/docker-compose /usr/bin/docker-compose
```

Verify: docker compose version

Step 3: Configure Bitcoin Core

Edit Umbrel Bitcoin config:

```
cd ~/umbrel/app-data/bitcoin/data/bitcoin
```

```
sudo nano umbrel-bitcoin.conf
```

Ensure it includes or add:

```
- rpcuser=YOUR_RPC_USER
```

```
- rpcpassword=YOUR_RPC_PASSWORD
```

```
- rpcallowip=10.21.0.0/16
```

```
- rpcbind=0.0.0.0
```

```
- server=1
```

```
- txindex=1
```

```
- zmqpubrawblock=tcp://0.0.0.0:28332
```

Save & exit: CTRL+O, Enter, CTRL+X.

Step 4: Restart Bitcoin Node

Restart the Bitcoin app:

```
sudo docker restart bitcoin_bitcoind_1
```

Monitor logs to confirm config load:

```
sudo docker logs -f bitcoin_bitcoind_1
```

Step 5: Clone & Build CKPool

Clone the official Docker CKPool repo:

```
cd ~
```

```
git clone https://github.com/golden-guy/docker-ckpool.git ckpool
```

```
cd ckpool
```

Build the Docker image:

```
sudo ./build_image.sh
```

Step 6: Configure ckpool.conf

Open the config:

```
nano conf/ckpool.conf
```

Replace with the JSON below (update placeholders):

Configuration JSON

```
{
  "btcd": [{
    "url": "127.0.0.1:8332",
    "user": "YOUR_RPC_USER",
    "pass": "YOUR_RPC_PASSWORD",
    "notify": true
  }],
  "btcaddress": "YOUR_NON_CUSTODIAL_BTC_ADDRESS",
  "btcsig": "/mined by drifora/",
  "serverurl": ["0.0.0.0:3333"],
  "startdiff": 64,
  "maxdiff": 524288,
  "zmqblock": "tcp://127.0.0.1:28332",
  "logdir": "logs"
}
```

Step 6 Continued: Save & Exit

Save and exit nano: CTRL+O, Enter, CTRL+X.

Step 7: Launch CKPool

Start the pool:

```
sudo docker-compose up -d
```

Follow logs:

```
sudo docker-compose logs -f
```

Expect:

- Connected to bitcoind: 127.0.0.1:8332
- Mining solo to any incoming valid BTC address username

Step 8: Configure Your Miner

In your miner's dashboard:

- **Pool URL**: stratum+tcp://INPUT_UMBREL_HOST_IP:3333
- **User**: YOUR_NON_CUSTODIAL_BTC_ADDRESS
- **Worker**: axel or custom tag
- **Password**: x

Step 9: Verify Operation

Check for accepted shares and connection logs.

Monitor your miner's hashrate (may take a minute).

Uncontrollables & Caveats

Bitcoin RPC settings must include txindex and ZMQ.

Port 3333 conflicts require updating `serverurl` and restarting CKPool.

Firewall/AV may block Docker or port 3333.

Umbrel performance varies by hardware; monitor CPU and storage.

Network must be stable for consistent mining.

drif-protocol — A sovereign solo mining method by JEX (@onchain_soul), distributed via Solosatoshi.