HOW TO MINE BitcoinZ - A comprehensive guide on mining BitcoinZ (BTCZ) with commodity hardware

Hello world! Firstly - we want to thank you for your interest and support for the BitcoinZ project. We know @BTCZCommunity will continue to grow and mature, a very important and fundamental part of that growth - as BTCZ is a pure PoW/ASIC-resistant, decentralized coin - is mining support!

INTRODUCTION:

This guide is broken down into sections. The concepts from each section are important parts of the mining process and/or related to BitcoinZ as a whole. The guide will walk you through each - and then in conclusion will tie all these concepts together as to provide a complete and comprehensive guide.

Mining, wallets, keys, and crypto in general can be a daunting subject matter - the main goal for this guide is to make BitcoinZ mining easy for everyone! Although, at the same time educational/technical enough so that one can not only do it - but can hopefully *understand the how and why* of it all!

I have seen a lot of confusion online when it comes to mining. This guide plans to (hopefully) fix that! Most of the general methods in this guide apply to mining in general - if something is BitcoinZ specific I will make note of it.

So, let's get to it! First off - here are some important links pertaining to BTCZ mining and the project in general:

[ANN]: https://bitcointalk.org/index.php?topic=2166510.0;all

BTCZ Webpage: https://bitcoinz.global/

Twitter: https://twitter.com/BTCZCommunity

Slack: https://bitcoinzcoin.slack.com/

Block explorer: https://explorer.bitcoinz.site/

Mining Pools: https://www.miningpoollists.com/bitcoinz/

Mining Calculator: https://whattomine.com/coins/207-btcz-equihash

CONTENTS:

I. WALLETS

Wallets are a necessary and fundamental element of the BitcoinZ ecosystem. Not unlike the actual wallet in your pocket, these wallets are essential to sending, storing, and receiving your BTCZ coins. Playing such an important role - it is crucial to have at least a basic understanding of how they work, and the various versions and types.

Before diving into the different types of wallets - let's take a minute and discuss one aspect all the wallets have in common (at least fundamentally) - the use of private/public keys, and associated passwords and seeds.

This is where most people either get bored, confused, or frustrated. It's normal - this can be a dense subject matter. Although, for the purposes of having a wallet to store coins earned from mining (or elsewhere) - it is not necessary to understand all of the complicated math, algorithms and super advanced technical skills that make this work. Now, that's not to say that knowledge isn't helpful - but it is not needed to understand this process to safely mine, store, send and receive BTCZ.

WALLET TYPES, FUNCTIONALITY, AND TERMINOLOGY

Wallet - Typically holds a seed(s) and/or private keys. Allows tracking of balances and creation of transactions. Basically what we as humans use to "interface" with a blockchain. Most newer wallets have a GUI as to be "user-friendly" - a wallet is the program/webpage/device you use to access your coins.

Seed - Used by deterministic wallets (more on that coming up) to generate private keys. Usually in the form of a Mnemonic phrase consisting of 12-24 words, in a particular order. It is of utmost importance to backup this seed.

Passphrase/Password - Used to encrypt a deterministic wallet seed, a wallet.dat/wallet file, or a private key. Passwords can be any string of alphanumeric characters - not unlike a password you would set for any account. This adds an extra layer of security - if someone got your seed/private key or wallet file -they would still need the password to spend/steal coins. Just as important as a seed.

Private Key - Used to decrypt/spend coins. Keep this a secret! Anyone that has access to it can spend your coins.

Public Key - A traditional public key is used to encrypt/sign something that will be decrypted/verified by its corresponding private key. Public keys are derived from a private key, although the opposite is not true- you cannot derive the private key from the public key (without knowing additional information). The public key is also needed to generate wallet addresses. (See Fig 1.)

BitcoinZ -address - Essentially, a wallet/BitcoinZ address is created by performing a one-way mathematical hash function on a public key. ***You must use a transparent (t-address) to mine to. DO NOT mine to a z-address (private)***

1. **Traditional (randomly generated) wallets**

With a conventional wallet, all the private/public key-pairs are generated randomly. The wallet will generate a buffer of new addresses (key-pairs) when the wallet is initialized. Once the so it is important to make backups more often - because once that keypool buffer is reached (usually ~100), the oldest will begin to be purged. So, for example, say you were storing coins in that purged address, doing a wallet backup at this point will not give you access to the wallet - as it didn't "save" the key-pair (if you had a backup of wallet file before the purge then you could get to it by simply restoring from that). So, unless you specifically saved the private key, for that specific address elsewhere - at this point (in the example) you cannot access the wallet.

2. **Sequential Deterministic (SD) Type I Wallets**

When setting up a sequential deterministic wallet, a sequence of characters (typically a 12-24 word mnemonic phrase) is randomly generated to act as the "seed" - this seed creates all the key-pairs. The seed is incremented and hashed repeatedly to generate new key-pairs (addresses). Using this method, the seed will always be hashed using the same function/algorithm (for example, SHA) and can only generate a finite number of keys (this amount is determined/limited by the size/length of the seed). Once this limit is reached, typically a new seed is produced and the process continues.

3. **Hierarchical Deterministic (HD) Type II Wallets**

With a hierarchical deterministic wallet, a single keypair is created initially and is known as the master key-pair. This master keypair is used to generate child key-pairs, which in turn create child key-pairs - essentially making each key-pair

a deterministic wallet in it's own right. This continues in a upside down "tree" structure, with the master key acting as the "root" of the "tree" - with each child pair branching out from it. This also allows for the use of what's called a "Master

Public Key" which, among other functions - allowing new bitcoin addresses to be generated using just the public key. One advantage that an HD wallet has is that the

original seed is all that is needed to access any and all of your addresses (because they are all child keys of the master seed/key).

This covers the wallet types, there are other variations - different ways to use a Master Public Key, and Multi-signature wallets - although for sake of brevity on a long winded topic - I will not be covering those methods in this guide, although I will probably do an entire how-to on just that one subject.

Finally, there are some Deterministic wallets that utilize an additional and/or optional passphrase/password that will "lock/unlock" a wallet. The password adds an additional layer of protection - as both the password AND the seed are needed to access the wallet. When using "encryption-enabled" wallets, the password essentially decrypts your seed/key and opens the wallet. So, do NOT forget this password!

DIFFERENT PLATFORMS/OPERATING SYSTEMS

Now that we have covered the different types of wallets, let's briefly identify the different ways to interface them. Here are the BitcoinZ solutions for them:

ONLINE WALLET

Typically a website that hosts a wallet service over the Internet. The provider allows communication with the blockchain, and your keys are also sometimes stored (online) with the provider as well - such as with an exchange wallet - they hold the keys!

-BitcoinZ Wallet-

https://www.mybitcoinzwallet.com/

DESKTOP WALLET

You download a traditional desktop GUI program (some are command line only) and takes care of syncing to the blockchain. It gives the user an interface to access

copies of keys and wallet address for easy backup. These keys are stored in a wallet.dat (or similar) file. Encrypt the wallet file if it's supported.

-MyBitcoinZ Wallet 10.0.0 release-

https://github.com/anthony19114/mybitcoinz/releases/

- Support for OSX, Windows, Android, Linux.
- Wallet ran locally using a 12 word mnemonic phrase.
- Based on Copay.

-BitcoinZ Wallet 1.1.0_1.2 Windows & Linux-

https://github.com/bitcoinz-pod/bitcoinz-wallet/releases/

- Download and run bitcoinz-wallet.exe. No need to install.
- Merge ZENCash Swing Wallet UI 0.73.7

PAPER/COLD WALLET

The keys are printed onto paper., stored numerically and/or as a QR code. Then stored in a fire/water proof location.

BitcoinZ-mini and BitcoinZ Cold Wallet cannot be used for mining as t-addresses are needed to mine - the private z-addresses they generate cannot receive mining rewards

HARDWARE WALLET

The keys are stored on a hardware device. This is considered to be the safest (next to paper storage -although pros and cons of both) way to store funds. These typically come in the form of a USB device (such as the TREZOR or Nano Ledger wallets). Or, you can do a homebrew style USB wallet - using an offline version of a wallet and some fiddlin' around with Linux- one can make their own! Stay tuned, @BTCZCommunity has a similar open-source USB project in the works.

II. MINING HARDWARE, SOFTWARE, AND CONFIGURATION

Alright enough about wallets already - “I thought you said this was about mining”... Be patient - we are getting there. You’ll be glad later that you educated yourself now, as you will maybe avoid mistakes later! Now, there are certain steps that are necessary, and just good practice to prepare and mine BTCZ.

Before even starting a mining program - make sure you have the following:

- A wallet of one sort or another.
- Generate a “receiving” t-address NOTE: z-addresses CAN NOT BE MINED TO!. ONLY transparent (start with t) addresses can be used for mining.
- Backup the public/private keys for that address, and/or the associated seed.
- Test that the wallet functions by sending a small amount of BTCZ first - before pointing mining rewards to the address.

Once you have accomplished the above, it is NOW time to get into setting up a mining rig, safely, with the appropriate hardware and mining software. This guide aims to clear up some of the common things that newcomer’s and IT savvy alike - have seemed to have trouble grasping. Once the the core fundamentals are understood clearly, configuring mining software will no longer be a daunting or time consuming. Anyone with GPU or even CPU cycles to spare, can get in on the mining action!

AMD vs. NVIDIA GPU's

The two heavy hitters in the GPU (Graphics Processing Unit) manufacturing business - chances are if you have a discreet (separate) GPU, it's either made by AMD or NVIDIA.

When new cards are designed, they release what's commonly referred to as the Founder's Edition - which is the "Reference card" or "Reference board/PCB" edition of the card. Then, other third party companies - such as ASUS, Gigabyte, PNY- then acquire the card and make their own tweaks/improvements. The biggest change is usually the cooling system on the card, and sometimes they will "pre-overclock" a card a advertise it as running at different speeds than other cards may claim. With a few exceptions, usually using the "faster" card will yield better hashrates - although sometimes at the expense of burning more electricity - the trick is to find a balance.

The algorithm that BitcoinZ uses for its Proof-of-Work (PoW) blockchain network is Equihash. Just as a refresher, BTCZ complies to the following guidelines:

[BitcoinZ is Bitcoin 2.0]

- Algo: Equihash (GPU/PoW mining - we promote decentralization, hard forks are allowed to protect integrity of ASIC-resistance)

- Max supply 21B coins

- Current supply: 12500 coins every 2.5 minutes

- 2MB Block every 2.5 min (BCC/BCH = 8MB every 10 min)

- Tech: ZCL spirit, ZEC privacy, BTC fundamentals

- Anonymous transactions (zk-SNARKs privacy) - traditional Bitcoin transactions are publicly available

Not all algorithms are created equal - as some GPUs are much, much better at crunching certain ones. In the case of BitcoinZ, Nvidia GPU's beat out comparable AMD cards by quite a large margin.

On average, ***Nvidia GPU's are much more efficient*** at crunching Equihash. This is because of an Nvidia proprietary technology called CUDA. CUDA is a parallel computing platform and application programming interface (API) model, that allows general purpose programming using C/C++, FORTRAN, and other similar languages. As well as compatibility with in OpenCL and OpenACC frameworks.

Example hashrates:

Nvidia GTX 1080TI: ~ 700 Sol/s @ ~ 250 Watts

Nvidia GTX 1070: ~ 500 Sol/s @ ~ 100 Watts

AMD RX 570: ~ 325 Sol/s @ ~ 140 Watts

Nvidia GTX 1060: ~ 295 Sol/s @ ~ 90 Watts

Milage will vary from card to card, and between different mining software as well.

Don't be discouraged if you have AMD cards - BitcoinZ still needs miners regardless of speed! AMD cards do just as good a job at securing and decentralizing the network as any other - maybe just not the best choice if purchasing GPU's specifically for BitcoinZ/Equihash.

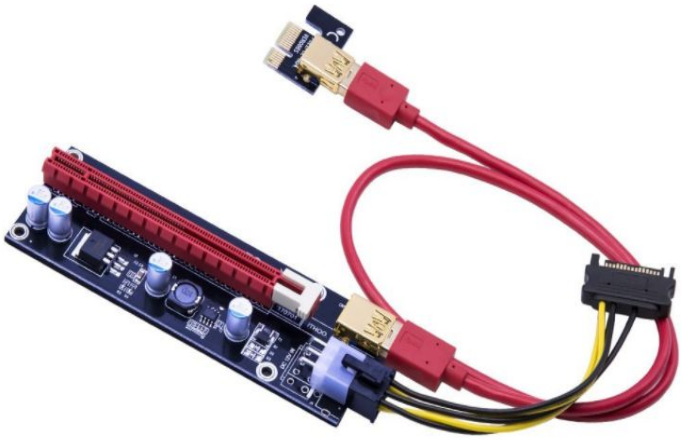
That being said, if you are in the market for a new card, the aforementioned GTX 1070 seems to hit the sweet spot of hashrate/power efficiency.

-I will be writing a separate guide entirely dedicated to the actual construction of a mining rig, so we will not be covering that in detail in this guide. Just be safe, use high quality PSU's, and make sure you have a reliable way to monitor power usage-

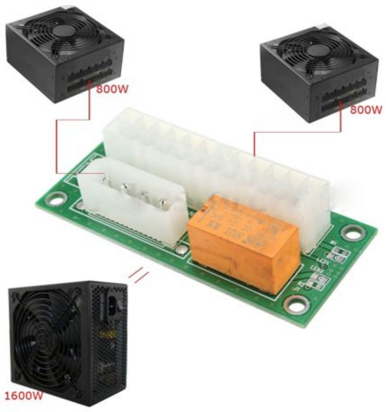
Some useful tools include:

The “Kill-A-Watt”

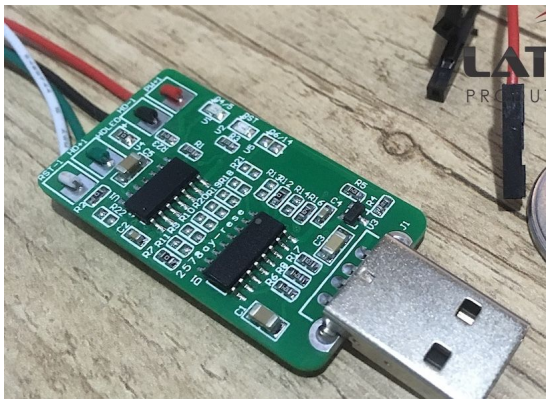
Powered PCIe Risers



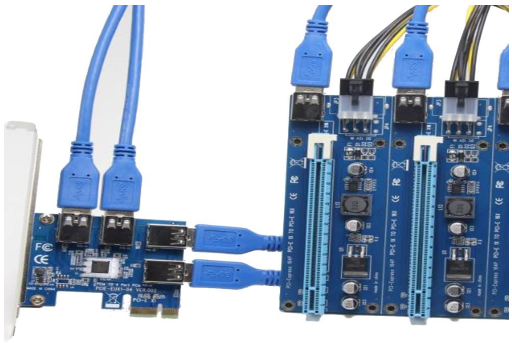
The “ADD2PSU” to join 2 or more PSU



The “USB Restart” to reboot your system after crash



The “Multiplier PCI Express board 1-To-4 PCIe”



III. MINING SOFTWARE AND MINING POOLS

Just as there is a disparity between GPU brands and algorithms, there are different mining applications, for both specific brand of GPU and/or the algorithm that needs to be computed. Once again, in the case of BitcoinZ - we are dealing with Equihash. There are a handful of miners that can get the job done.

Note: When using some of the following mining software - you will often see program or file names related to ZCash (ZEC), ZClassic (ZCL), and or ZENCash (ZEN) in your miner folder - this is NORMAL. All three of those currencies use Equihash - so the same mining software will work for BTCZ (this is not because we use Zcash technology and share the crypto space -which we obviously do) it's because of the algorithm.

This, I have noticed is another thing people get hung up or confused about - "which miner do I use". . . "what do I place in the .bat file"... "Where/what is the .bat file!?"

I hope I can clear this up and make it easy to understand. When figuring out which miner to use, you need to ask yourself the following questions:

1. What kind (AMD/Nvidia) of GPUs do I have/plan to use?
2. What coin(s) do I want to mine - and what algorithm does it use?
3. What mining pool you want to use (you can always switch) or solo mine?
4. What wallet address do I want to send mined coins to?
5. What tools will I use to under/overclock GPUs, and monitor power usage

Okay, so most of that info is easy enough to get, but let's cover a few things:

Some miners work only on AMD cards, some only on Nvidia, some work on both.

The above statement basically means that each miner was written to work with a specific framework/brand GPU, algorithm, or some combination of the two. Do not worry about if a miner works for a certain pool - chances are it does. We'll get to that in a bit.

Below are links to the most popular crypto-currency miners used today. These links are safe. ***Your anti-virus software may throw a false-positive when downloading some of these programs, it is due to the nature of the code, similar functions and calls are made by some malware - I assure you they are safe from the links below at least! So add to exclusions/turn-off firewall, and allow them network communication on your [private] network.***

Nvidia ONLY GPU Miners:

EWBF's CUDA Equihash Miner 0.3.4b

CCminer

AMD ONLY GPU Miners:

Claymore's ZCash AMD GPU Miner v12.6 (Windows/Linux)

SGminer

AMD + NVIDIA GPU Miners:

Genoil/ZECMiner

EQUIHASH-CPUMiner (CPU MUST HAVE AVX INSTRUCTION SET):

Nicehash/nheqminer

Okay, so now you need to decide if you are going to mine solo, or mine on a pool. For the average enthusiast miner, and for miners that have maybe ~8 GPU's or less - mining on a pool is the way to go. The reason being is that miner rewards go out to the "miner" that verified the last block in the blockchain first. This "miner" could be a single person with a whole lot of GPUs, it could be a big ming pool, it COULD be a single person, solo-mining with 5 GPU'S - and they just got ***extremely lucky*** and solved the block first - albeit being slower. This is highly unlikely to happen - and becomes harder as time passses.

An online mining pool, is basically a "pooling of resources" to work together and crunch the blockchain. As an individual miner on a pool, (assuming you are on fair

pool) you will get “shares” as mining rewards - paid in BTCZ - directly correlated to how much hash power you “put in” (and some other factors depending). Different pools have different payout schemes, and there is typically a fee usually around .5 - 2% - although a lot of pools are free/donation based.

Keep in mind the developer(s) of the mining software you may also charge a similar small fee.

This is fair, for both miner and software dev.

As most people will be mining on a pool, that will be the focus in this part of the guide. Stick around for upcoming guides on solo-mining, running nodes, and hosting a DNS seeder for BTZC soon!

MINER CONFIGURATION

No matter what mining software, or - “miner” you are using, the configuration is essentially the same - there are just minor syntax differences between the different configuration files, but all function similarly. To start, these are the four (4) steps we need to accomplish:

1. Pick the correct mining software, and download it.
2. Pick a wallet, generate a new wallet **t-address** for mined coins.
3. Select a mining pool, register/create “workers” if needed.
4. Configure the mining software to “point” at chosen pool.

Following is a breakdown of the steps above in detail:

Figure out the appropriate mining software to use - Pick one made for your OS and that it is brand appropriate for the GPU’s you plan to use. If you have multiple brand/mixed brand rig (AMD + Nvidia) you will need to install a miner for the other card(s). You can run both miners simultaneously.

Generate wallet address you wish to have your mined coins deposited to - It is best practice to point mining rewards towards an desktop or offline wallet. When storing large amounts amounts of coins - you want to own the private key - do not depend on an exchange wallet for long term storage.

Pick a mining pool (since the process for other types of mining is so similar yet less popular - it will be covered in an upcoming guide) - When picking a mining pool there are a few things to keep in mind and consider. Although pool mining in essence does not help with BTCZ's philosophy of decentralization - miners without expensive mining rigs would not do so well solo mining. Think of using pools as a compromise between decentralization and accessibility. If a pool is not very active with miners, which in turn ups the global hashrate and hence payouts - than mining on it with a couple GPU's would be like solo mining...but worse because of internet latency, and pool fees that go to the developer of the pool.

Lets walk through an example to help.

For this example we will use the BitcoinZ pool hosted by Suprnova.cc mining, although same methods apply to most pools

1. First step would be to register a free account (if necessary)
2. Pick the BitcoinZ pool
3. Add a worker+password (let's say "btcz-1" for worker name, and "x" as the password for this example) and click "add worker".
4. Then, insert your wallet address into "Payment address" box on the Pool/Account settings page,
5. Lastly, choose an auto-payout amount, and save settings.

See pics below and index end of document.

Suprnova

suprnova - reliable mining pools

Support: admin at suprnova.cc
Twitter: https://twitter.com/SuprnovaPools

Our Pools

	Coin	Name	Algorithm	Active Workers	Pool Hashrate	Network Hashrate	
	DCR	Decred	Blake14	31699	127993032.5 MH/s	353623808.48 MH/s	Start Mining
	ZEC	ZCASH	Equihash	5845	8579.38 H/s	334690.94 H/s	Start Mining
	LBC	Lbry.io Credits	LBRY	5111	4547841.3 MH/s	8225660.99 GH/s	Start Mining
	ZEN	ZENCash	Equihash	3361	7170717.35 H/s	11480195 H/s	Start Mining
	MONA	MonaCoin New Algo !	Lyra2REV2	3339	1128687.41 GH/s	2617321.02 GH/s	Start Mining
	BTCZ	BitcoinZ	Equihash	1717	2795.57 H/s	4272.91 H/s	Start Mining

Secure | https://btcz.suprnova.cc/index.php?page=account&action=edit

Apps Bookmarks CCNA/NETWORKING NERDiT CRYPTO BILLS/DOCS LINUX WINDO

suprnova.cc btcz.suprnova.cc Suprnova Pool Mainpage

- Edit Account
- My Workers
- Transactions
- Earnings
- Notifications
- Invitations
- QR Codes
- Statistics
- Help
- Other

ACCOUNT DETAILS

Username

User Id

API Key

E-Mail

Timezone

America/New_York

Payment Address

Donation Percentage Donation amount in percent (1 - 100%)

0.00

Automatic Payout Threshold

0.1 - 8000 BTCZ. Set to '0' for no auto payout. A 0.01 BTCZ TX fee will apply

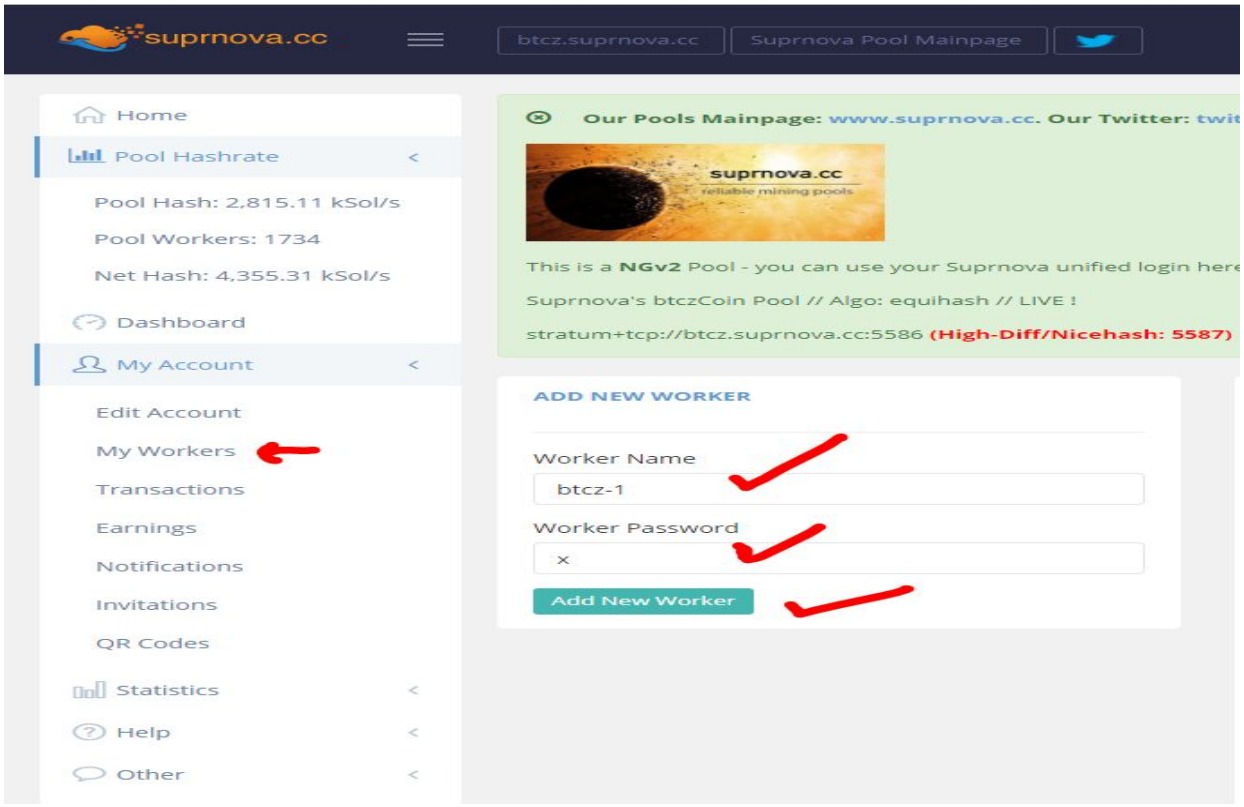
100

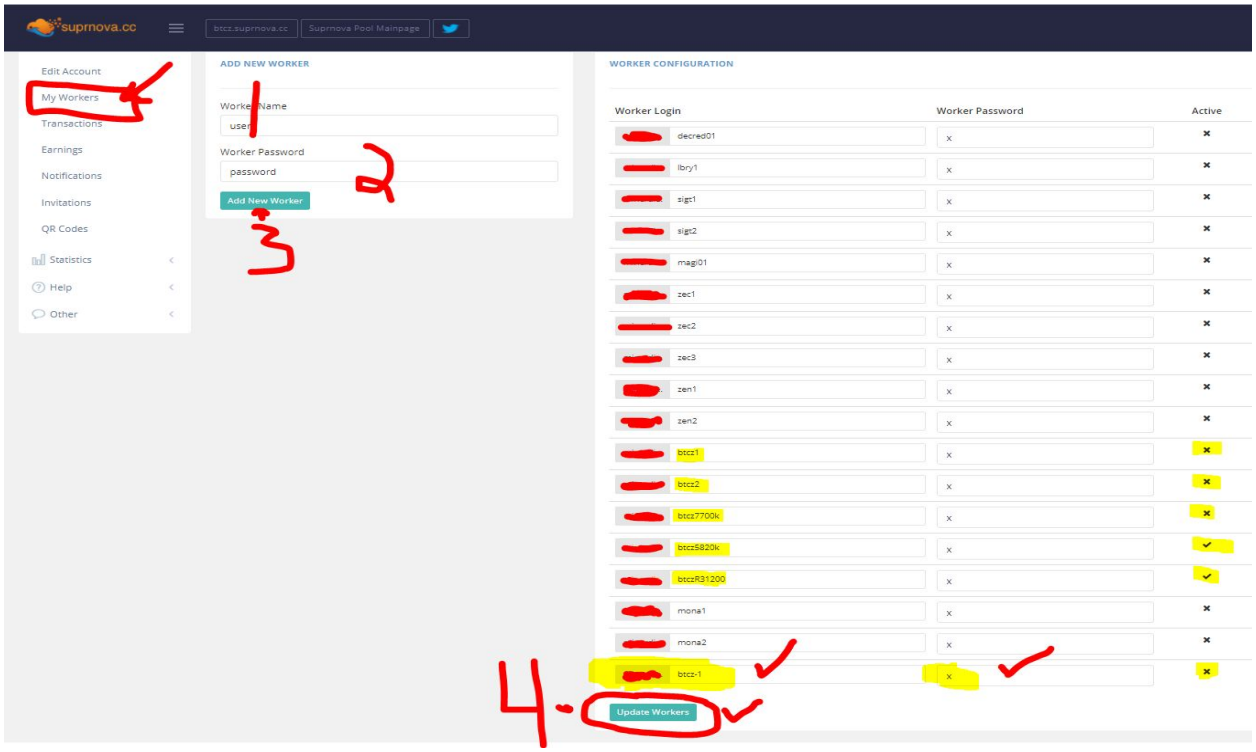
Anonymous Account

Hide username on website from others. Admins can still get your user information.

4 Digit PIN The 4 digit PIN you chose when registering

Update Account


suprnova.cc
btcz.suprnova.cc
Suprnova Pool Mainpage
Home
Pool Hashrate
Pool Hash: 2,815.11 kSol/s
Pool Workers: 1734
Net Hash: 4,355.31 kSol/s
Dashboard
My Account
Edit Account
My Workers
Transactions
Earnings
Notifications
Invitations
QR Codes
Statistics
Help
Other
Our Pools Mainpage: www.suprnova.cc. Our Twitter:
suprnova.cc
reliable mining pools
This is a NGv2 Pool - you can use your Suprnova unified login here
Suprnova's btczCoin Pool // Algo: equihash // LIVE !
stratum+tcp://btcz.suprnova.cc:5586 (High-Diff/Nicehash: 5587)
ADD NEW WORKER
Worker Name
btcz-1
Worker Password
x
Add New Worker


suprnova.cc
Edit Account
My Workers
Transactions
Earnings
Notifications
Invitations
QR Codes
Statistics
Help
Other
ADD NEW WORKER
Worker Name
Worker Password
password
Add New Worker
1
2
3
WORKER CONFIGURATION
Worker Login
Worker Password
Active
decred01
lbry1
sigt1
sigt2
magi01
zec1
zec2
zec3
zen1
zen2
btcz1
btcz2
btcz7700k
btcz5820k
btczR31200
mona1
mona2
btcz-1
Update Workers
4.

A note on what's called the "auto-payout" and/or "minimum payout threshold" on a mining pool - because I have noticed a whole lot of people get confused by this - and immediately start thinking something is wrong because they "Haven't gotten any coins,,!..and it's been TEN minutes already!" Two things:

You can (usually) pick the "automatic payout threshold" and must change it yourself if you want to be paid out more often or in a different amount from the default setting. There is usually a minimum (and maximum) also. This is often the reason new miners get nervous/scared thinking their miner is not working - most of the time they have not waited long enough - so have not hit the threshold, and the pool has not sent the coins yet...they will come - blockchains can be slow, but they are correct!

Next step after selecting a pool, is to actually prepare the mining software. This typically involves creating/editing just a couple files - a lot of times just one.

Let's dp a quick recap before diving into that, just to re-establish that, at this point, know and have done the following:

- Created a wallet and address to get mined coins sent to
- Make a backup of the wallet's private key - and store safely!
- Register account for desired mining pool and create a worker (if needed)
- Determine and download the appropriate mining software

If you have done these steps, move onto last but not least:

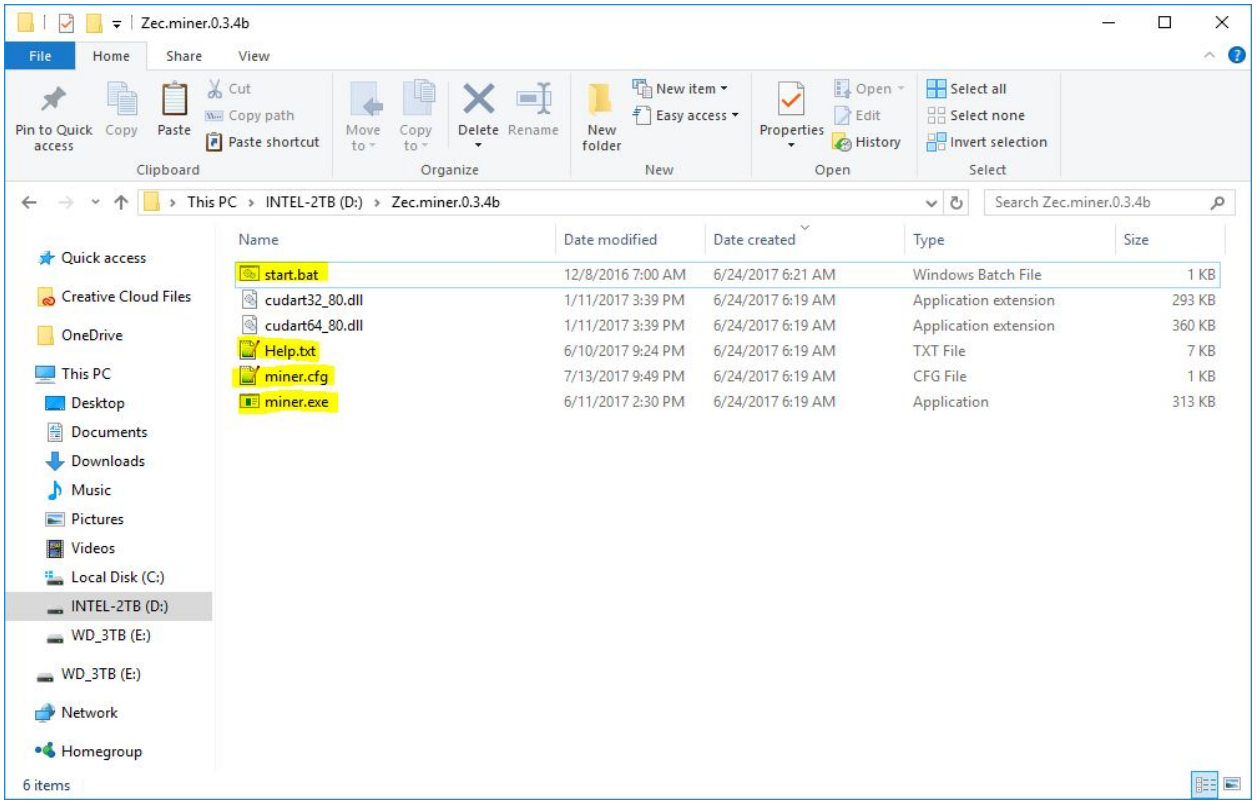
Configuring the mining software to "point" at the chosen pool and/or wallet - Some pools, require no registration or account. You simply "point" the miner to the given URL:port and your wallet address (more on this in next section) and then start mining! Some pools require you to register an account with them (usually free) before using them. Typically, these pools require you to make what's called a "worker" and give it a password (covered in previous section). To demonstrate this, we will continue with the same example using Suprnova.

The following section (miner configuration) seems to give a lot of people a headache.

Let's break it down.

Regardless of what miner you choose, and no matter if it's for Windows or Linux (very few small, simple differences) you must configure it so that it at least knows 1) where to mine to and 2) where to send the coins. To do this, you must edit some files that may or may not be in the folder where the miner is. The main file we need to edit is one ending with a .bat (Windows batch file) or .sh (Linux shell script) file extension. These extensions dignify those files as what are called "scripts" - a fundamental part of operating systems, program design, and scripting.

I am using [EWBF's CUDA Equihash Miner 0.3.4b] for this example - although I personally use this miner for my Nvidia rig. It is well written and stable. When you unzip and open up the folder for the first time, you will see the following files (image below) - or something similar if using another miner.

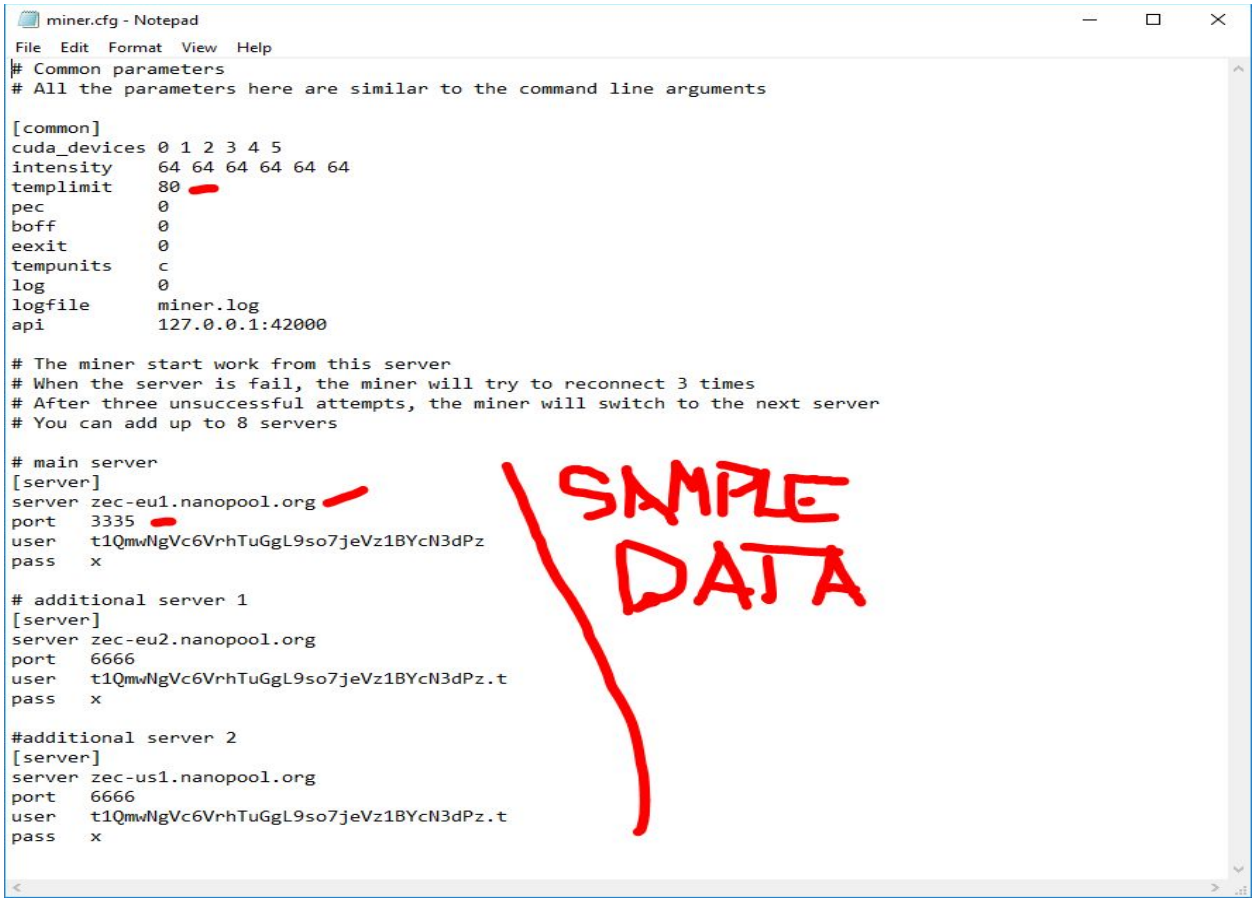


Make note of the four highlighted files:

start.bat - This is where most of the magic happens - and depending on the miner it may be the only file you have to edit. This is the file you click on/run to start the miner.

Help.txt - Definitely take the time to read this if one is provided -similar to a "ReadMe" file, that has info, instructions, and examples concerning the mining software.

miner.cfg - This file is sometimes not included - ***as it is not necessarily needed on most miners. If one is not there just create a new text document and save it as *whatever.bat/.sh, open in editor, put your info, done.*** First here's a look at the miner.cfg file - as it comes in with EWBF miner.



“There are zec-* URL’s and random wallet addresses and ports..what is this?”

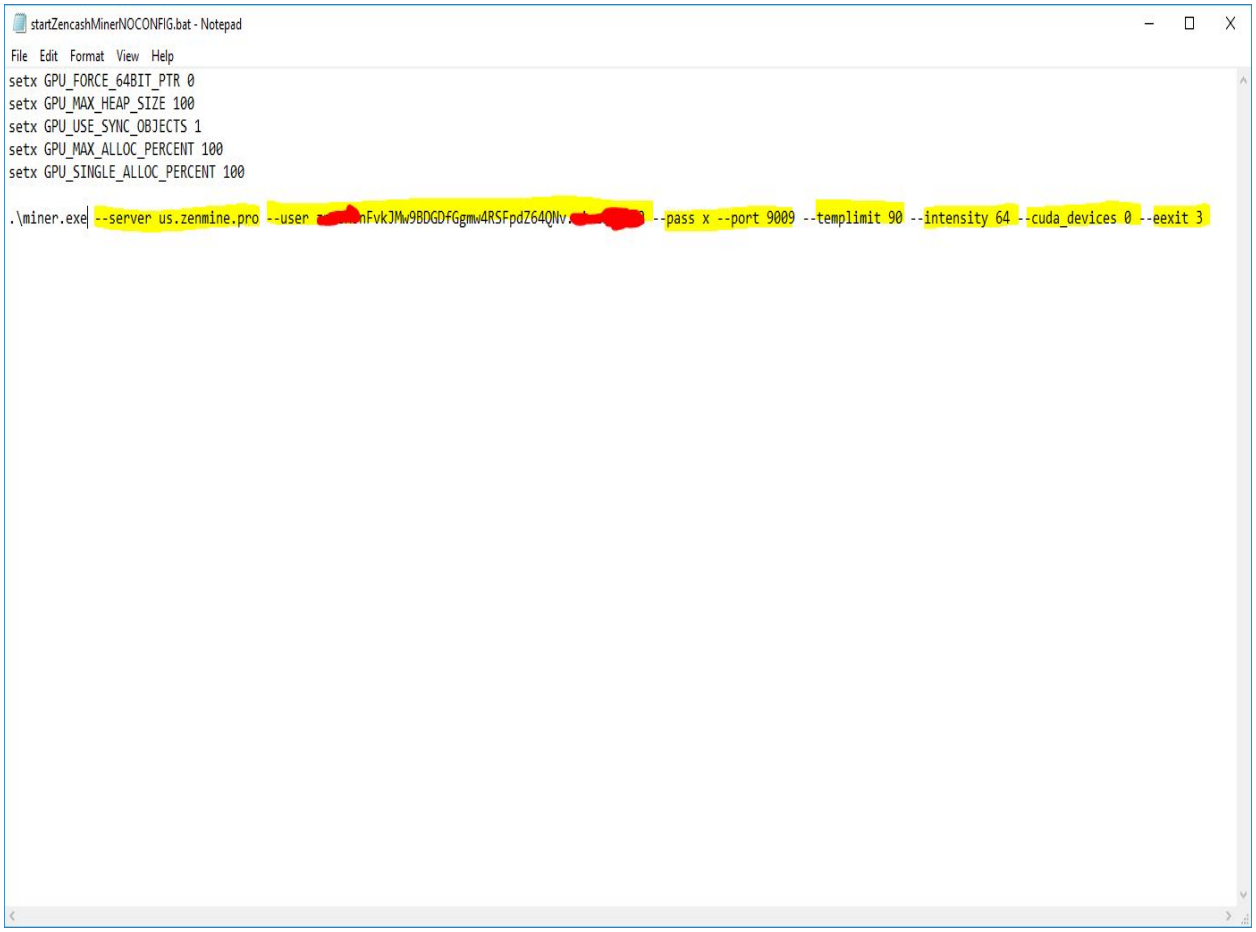
This is just placeholder data - there to serve as an example of how the miner can be configured! DO NOT mine to these pools/addresses!

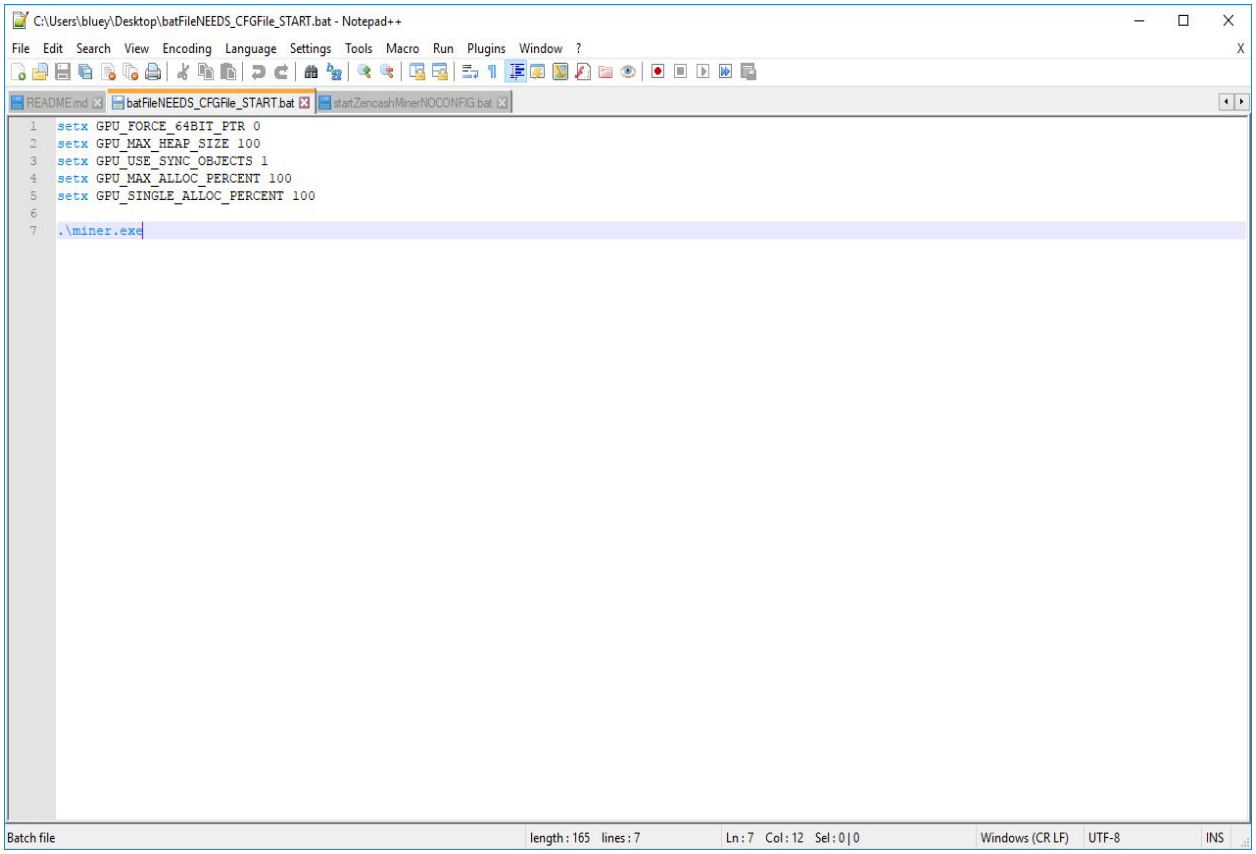
There are two different ways to run a miner - as follows:

- WITH a *.cfg file - filled in with correct info
- WITHOUT a *.cfg file - the .bat/.sh file contains all the parameters

The parameters in the the .cfg file, WILL be executed/followed - if there are NO parameters specified in the .bat/.sh file. If there are ANY arguments (options) in the .bat file - then the .cfg file is trumped/ignored.

Take a look at some pics, and then we will discuss.





The first image is a sample of a .bat file that has all the arguments itself - no need to to populate miner.cfg file. It will not use use it this way.

The second image, is a .bat file that does only one thing - run “miner.exe” - once it runs, if there are no option flags/arguments - it will then look to, and rely on the information in “miner.cfg” to know what pool/wallet/port to mine to.

***miner*.exe -** This is the actual “miner” binary. It’s called/executed by *miner*.exe/.sh file - (with the local commands listed, or global omne

.\miner.exe - (Windows) or ./miner.sh - (Linux/UNIX)\

****The mining pool of your choice will have instructions on what information to fill in for the main arguments/options of the miner (either defined the in miner.cfg file one line at a time - or in the startup .bat/.sh script file)*****

IV. CONFIGURE WATCHDOG SCRIPT (LINUX)

-community contribution made by @LatinoMiner-

In order to correctly start the EWBF miner at boot time on Linux, the system initialization has to be completed with all network services full working beforehand. Instead of creating an autostart script we can create a “miner watchdog script” that will check every 5 minutes to see if the miner process is running. If the process is not present - the script will then launch the miner again. With this solution we don’t need to configure any autostart entries.

The installation of the script is made up two steps:

1. **Create a file in your /home directory and save it as a .sh script “miner-reload.sh” for example -and add the following text:**

#!/bin/sh
COMMAND="/home/latinominer/0.3.4b/./miner --config /home/latinominer/0.3.4b/miner.cfg &"
NOHUPCOMMAND="nohup /home/latinominer/0.3.4b/./miner --config /home/latinominer/0.3.4b/miner.cfg &"
pgrep -f -x "$COMMAND" > /dev/null 2>&1 || $NOHUPCOMMAND

2. **Add the .sh script to the crontab and execute every 5 minutes:**

- **type the command “crontab -e” and add the line below:**

****/5 * * * * /bin/sh /home/username/miner_reload.sh***

After that, the script miner_reload.sh will restart the EWBF miner when it, for whatever reason, freezes or stops running!

V. START THE MINER! MINE + SUPPORT BTCZ!

When first starting the miner - have GPUs at stock settings - then tweak if temps/power allows! Stay tuned for more guides and thanks for mining! I/we will be adding to and editing this document as needed and will provide to the @BTCZCommunity.

IF THIS GUIDE HELPED YOU AT ALL, PLEASE CONTRIBUTE TO THE PROJECT ANY WAY YOU CAN. IT IS A OPEN-SOURCE, OPENLY DEVELOPED, "FAIRCORE" COIN - CHECK US OUT!

Slack: **bitcoinzcoin.slack.com**

[ANN]: https://bitcointalk.org/index.php?topic=2166510.0/

Discord: https://discordapp.com/invite/u3dkbFs/
Twitter: https://twitter.com/BTCZCommunity/
Telegram: https://t.me/joinchat/CDzlaRGMvBm4P2Z76sNclQ/
Facebook: https://www.facebook.com/BitcoinZCommunity/
Reddit: https://www.reddit.com/r/BTCZCommunity/

AUTHOR #0 (DRAFT v0.99): "J. NERDiT"

NERDiT Solutions: https://www.nerditsolutions.net/about

"nerdbits" blog: https://www.nerditsolutions.net/

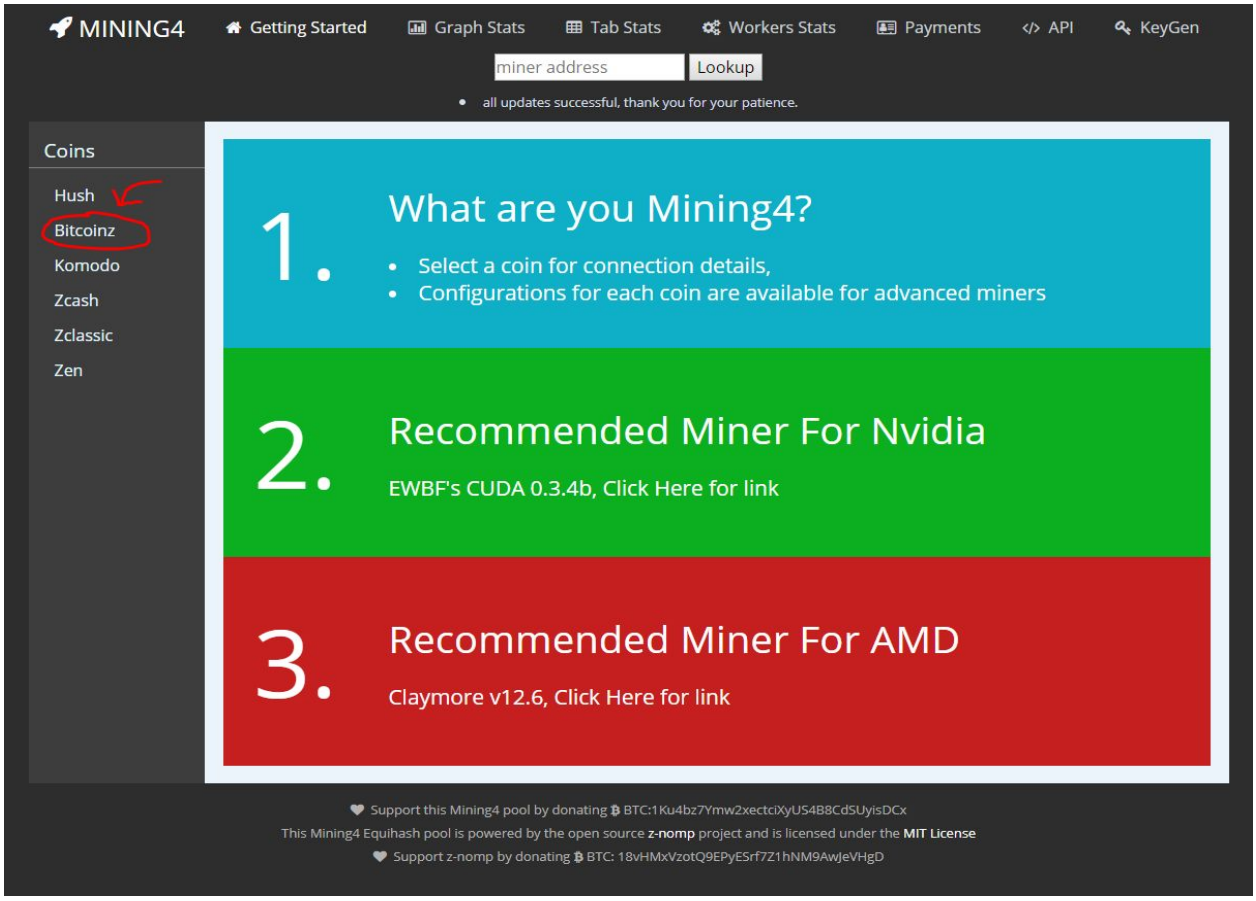
Email: jeremy@nerditsolutions.net/ - info@nerditsolutions.net/

Google+: https://plus.google.com/u/0/105948681313492225846/ - https://plus.google.com/u/1/107364728687551144568/

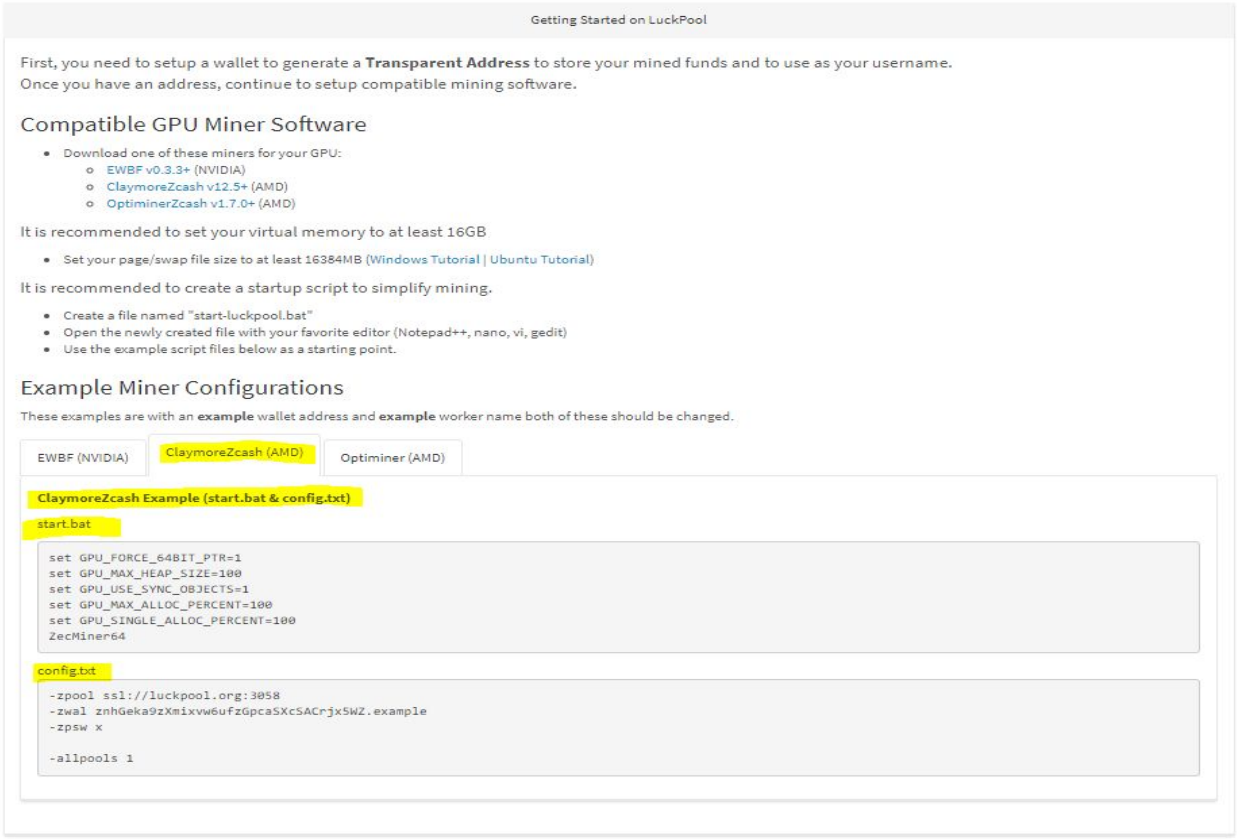
Twitter: https://twitter.com/BTCZCommunity/

ADDENDUM-1 FOLLOWING IS LIST OF MINING POOLS/EXAMPLES

POOL: http://equi.mining4.co.uk/getting_started/



POOL: https://luckpool.org/getting_started/



Getting Started on LuckPool

First, you need to setup a wallet to generate a **Transparent Address** to store your mined funds and to use as your username.
Once you have an address, continue to setup compatible mining software.

Compatible GPU Miner Software

- Download one of these miners for your GPU:
  - EWBF v0.3.3+ (NVIDIA)
  - ClaymoreZcash v12.5+ (AMD)
  - OptiminerZcash v1.7.0+ (AMD)

It is recommended to set your virtual memory to at least 16GB

- Set your page/swap file size to at least 16384MB (Windows Tutorial | Ubuntu Tutorial)

It is recommended to create a startup script to simplify mining.

- Create a file named "start-luckpool.bat"
- Open the newly created file with your favorite editor (Notepad++, nano, vi, gedit)
- Use the example script files below as a starting point.

Example Miner Configurations

These examples are with an **example** wallet address and **example** worker name both of these should be changed.

EWBF (NVIDIA) | ClaymoreZcash (AMD) | Optiminer (AMD)

ClaymoreZcash Example (start.bat & config.txt)

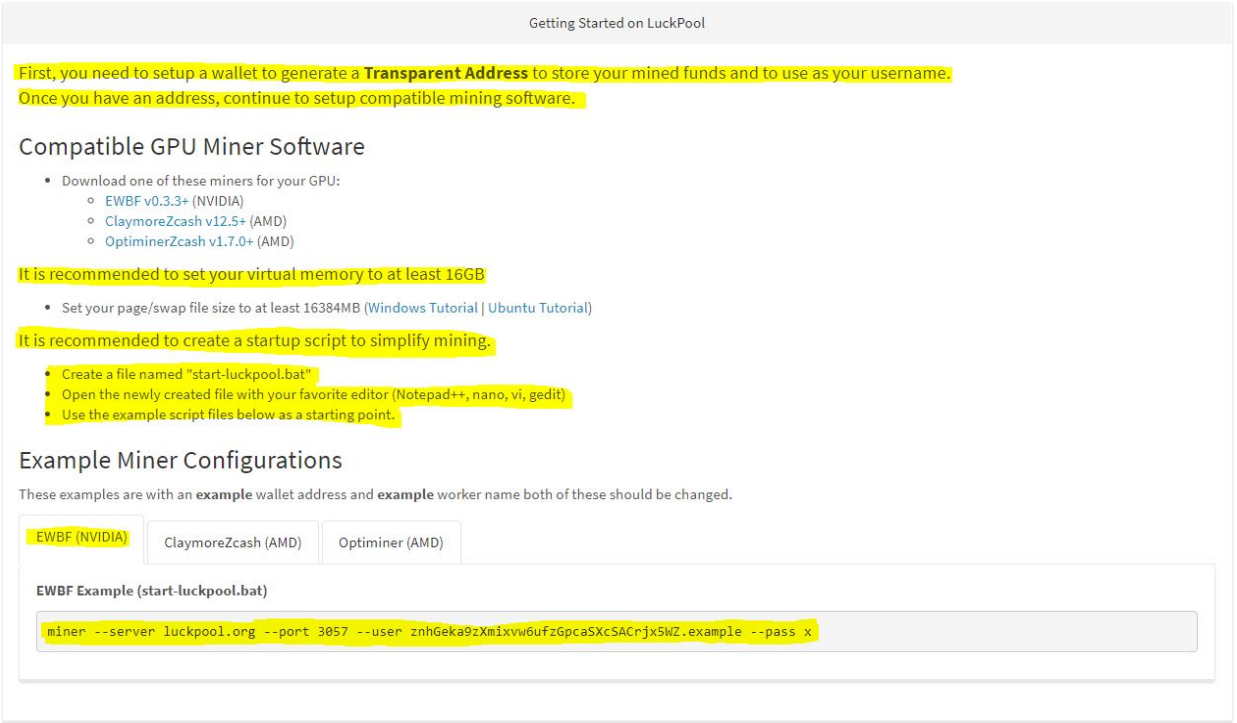
start.bat

```
set GPU_FORCE_64BIT_PTR=1
set GPU_MAX_HEAP_SIZE=100
set GPU_USE_SYNC_OBJECTS=1
set GPU_MAX_ALLOC_PERCENT=100
set GPU_SINGLE_ALLOC_PERCENT=100
ZecMiner64
```

config.txt

```
-zpool ssl://luckpool.org:3058
-zwal znhGeka9zXmixvw6ufzGpcaSXcSACrjx5WZ.example
-zpsw x

-allpools 1
```



Getting Started on LuckPool

First, you need to setup a wallet to generate a **Transparent Address** to store your mined funds and to use as your username.
Once you have an address, continue to setup compatible mining software.

Compatible GPU Miner Software

- Download one of these miners for your GPU:
  - EWBF v0.3.3+ (NVIDIA)
  - ClaymoreZcash v12.5+ (AMD)
  - OptiminerZcash v1.7.0+ (AMD)

It is recommended to set your virtual memory to at least 16GB

- Set your page/swap file size to at least 16384MB (Windows Tutorial | Ubuntu Tutorial)

It is recommended to create a startup script to simplify mining.

- Create a file named "start-luckpool.bat"
- Open the newly created file with your favorite editor (Notepad++, nano, vi, gedit)
- Use the example script files below as a starting point.

Example Miner Configurations

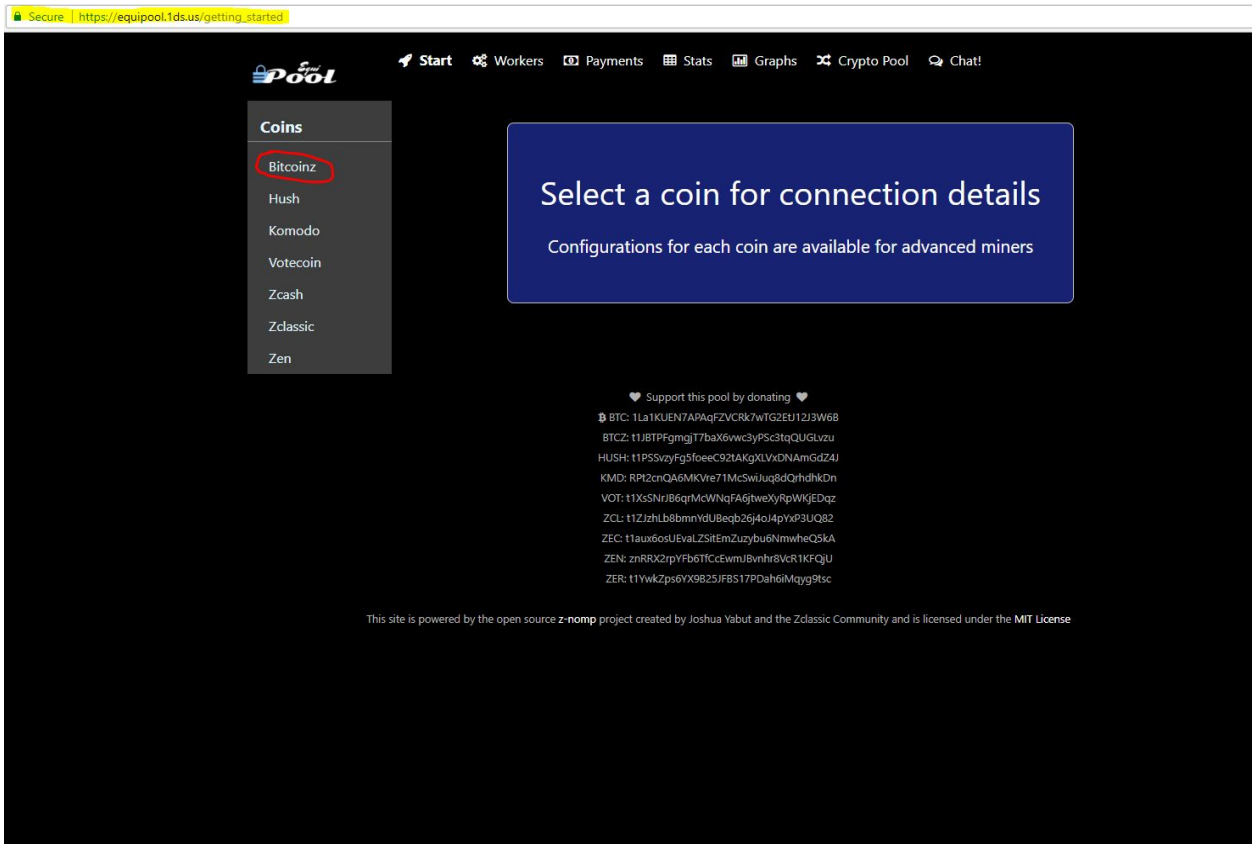
These examples are with an **example** wallet address and **example** worker name both of these should be changed.

EWBF (NVIDIA) | ClaymoreZcash (AMD) | Optiminer (AMD)

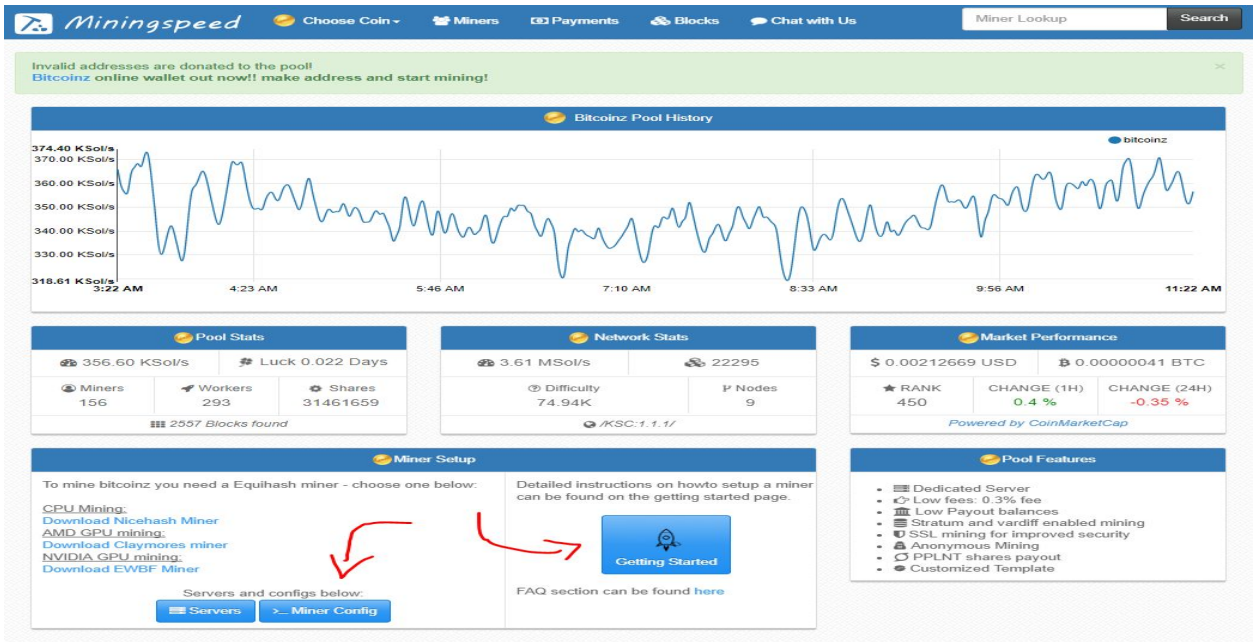
EWBF Example (start-luckpool.bat)

```
miner --server luckpool.org --port 3057 --user znhGeka9zXmixvw6ufzGpcaSXcSACrjx5WZ.example --pass x
```

POOL: https://equipool.1ds.us/getting_started/



POOL: https://pool.miningspeed.com/



Bitcoinz Miners And Configuration

To mine Bitcoinz just use any ZCASH (EquiHash) miner

CPU Mining:

Download Nicehash Miner

Start your miner using the following command.

```
nheqminer.exe -l mining.miningspeed.com:3071 -u t1MS7wXH4gVV4LLvGSJrFqXnqwvzuYf1wge.computer1 -p :
```

Claymore Miner - AMD GPU (Windows/Linux)

Download Claymores miner

Start your miner using the following command

```
ZecMiner64.exe -zpool mining.miningspeed.com:3072 -zwal t1MS7wXH4gVV4LLvGSJrFqXnqwvzuYf1wge.compu
```

SSL/TLS mining

```
ZecMiner64.exe -zpool ssl://mining.miningspeed.com:3074 -zwal t1MS7wXH4gVV4LLvGSJrFqXnqwvzuYf1wge
```

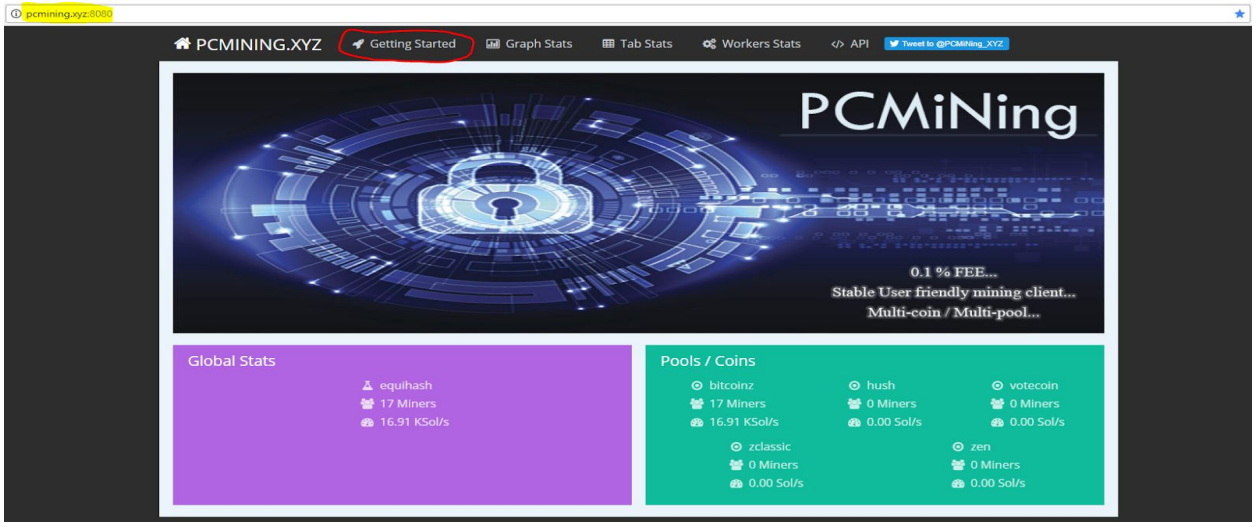
EWBF Miner - NVIDIA GPU (Windows/Linux)

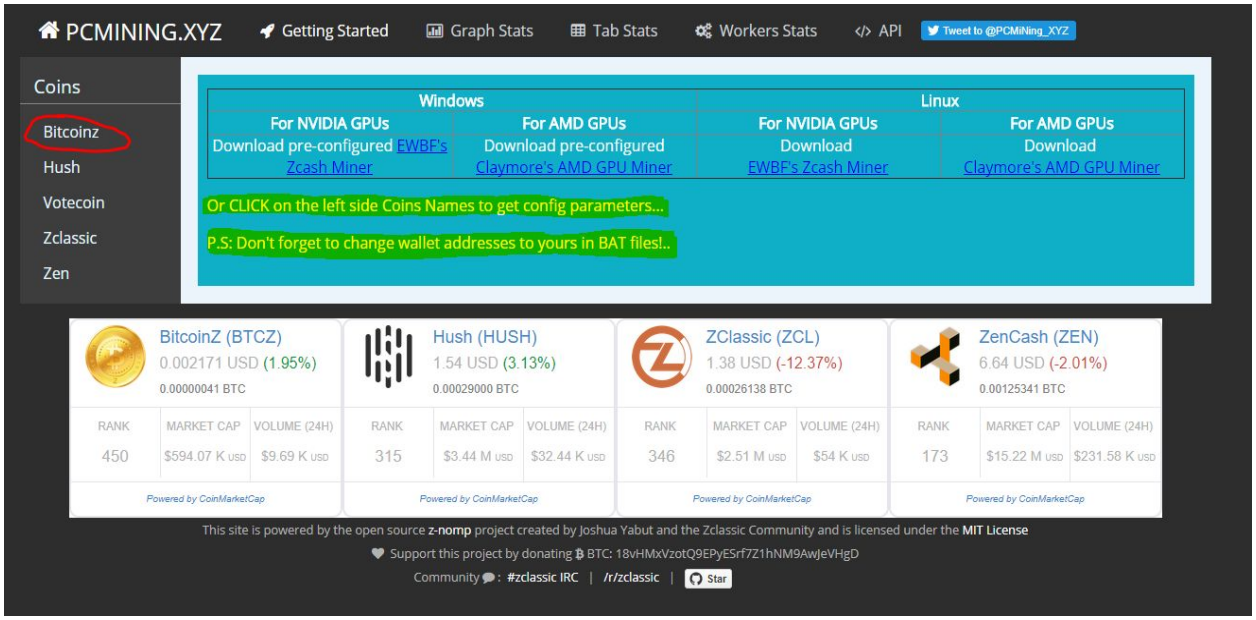
Download EWBF Miner

Start your miner using the following command

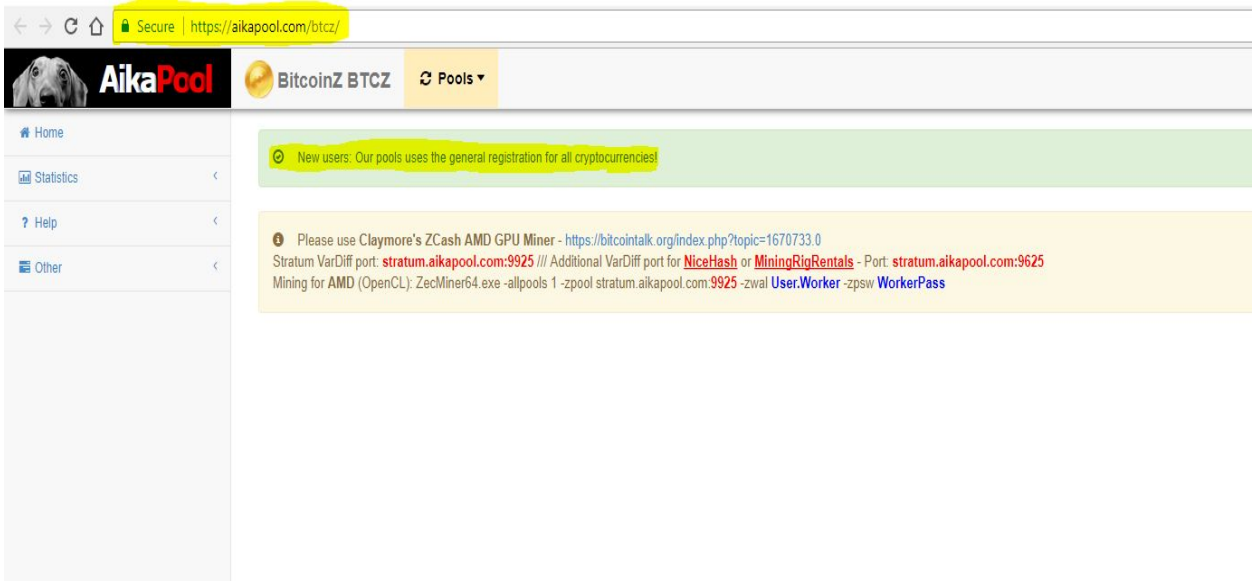
```
miner.exe --server mining.miningspeed.com --user t1MS7wXH4gVV4LLvGSJrFqXnqwvzuYf1wge.computer1 --
```

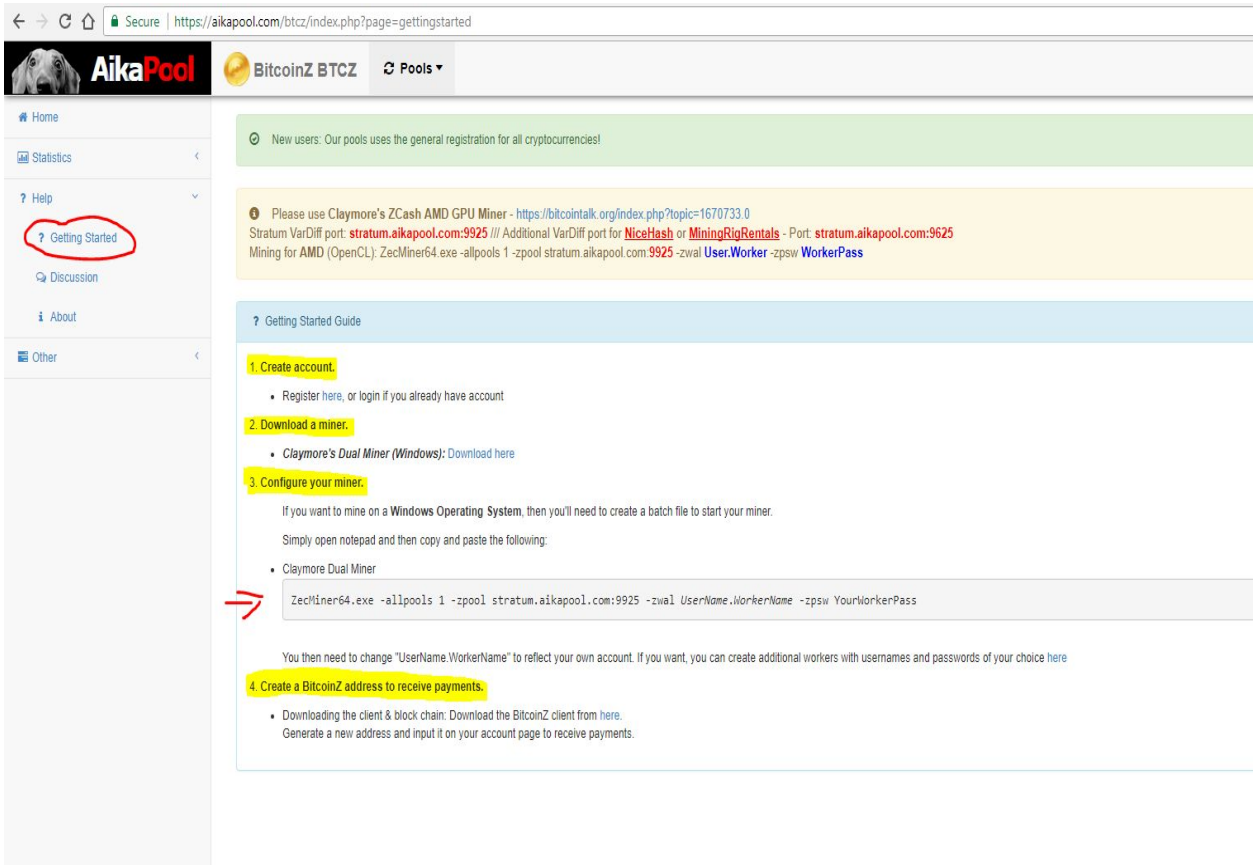
POOL: http://pcmining.xyz:8080/getting_started/



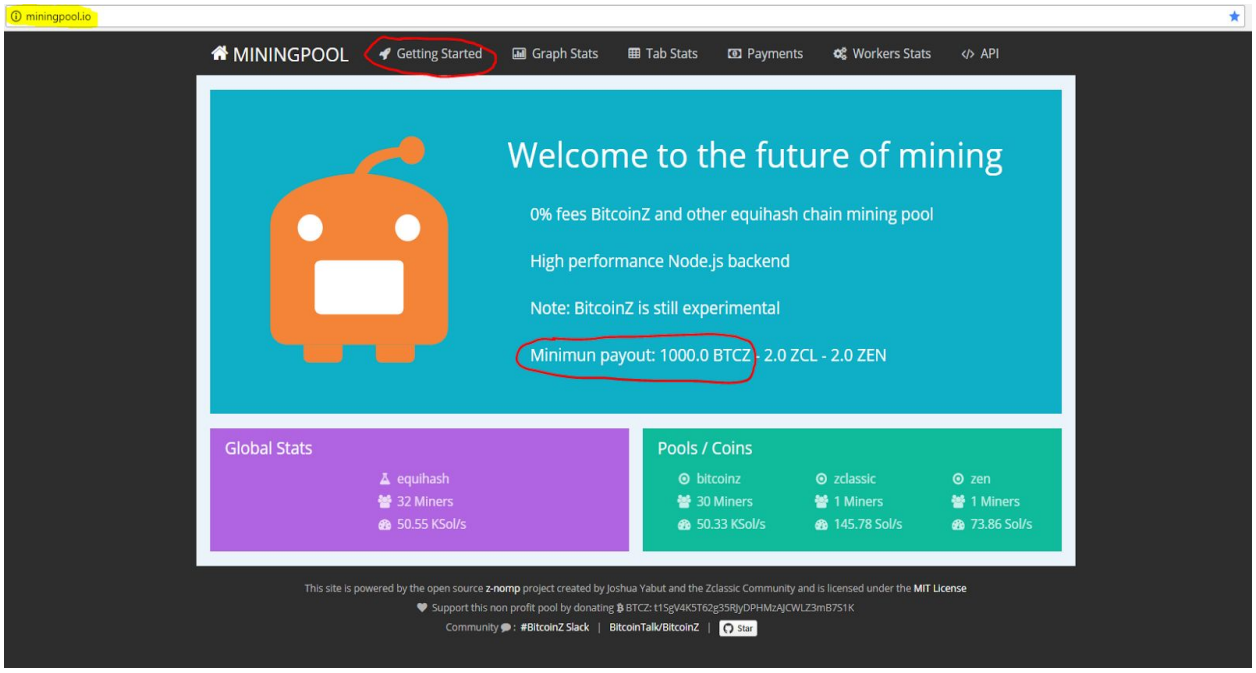


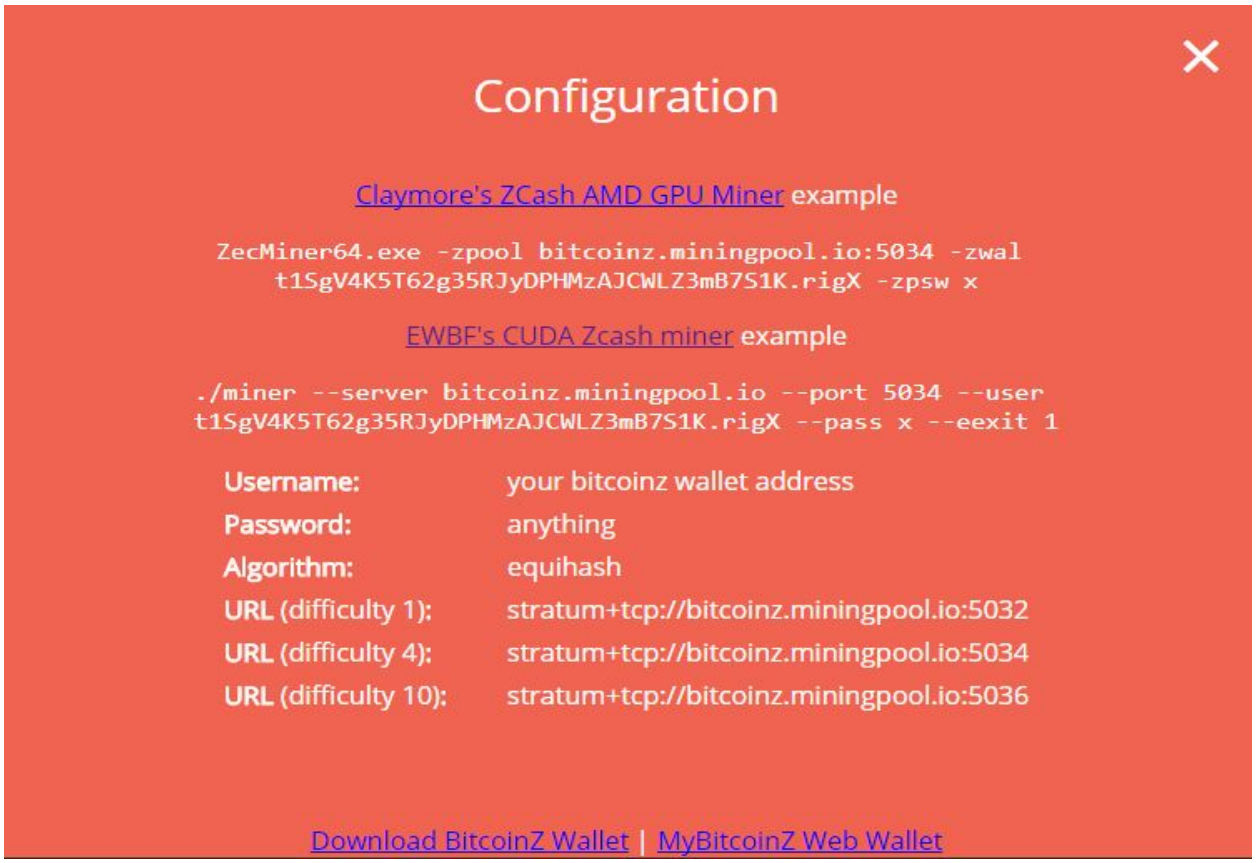
POOL: https://aikapool.com/btcz/



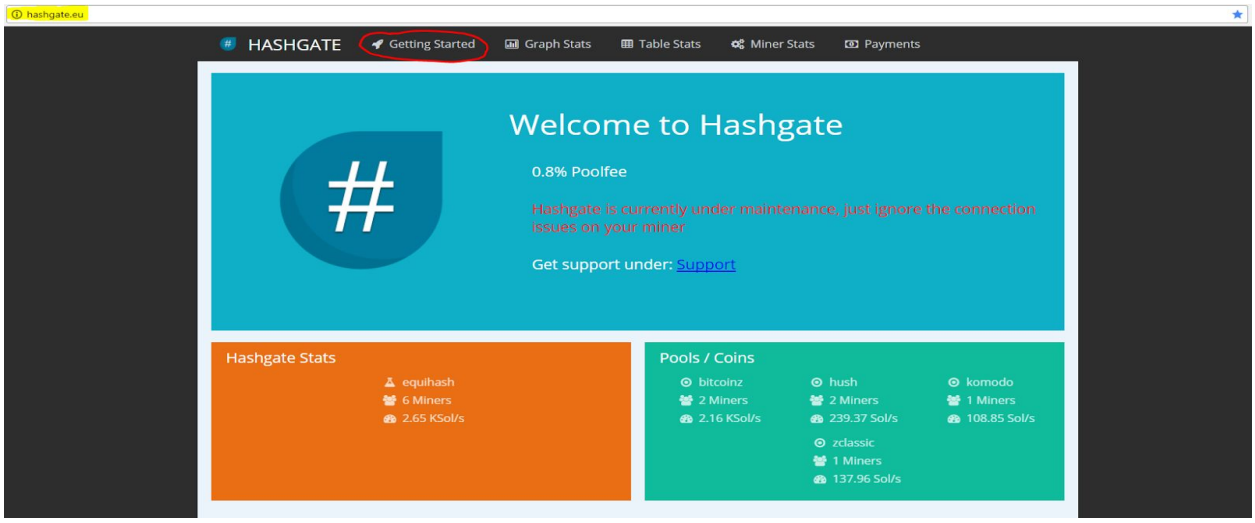


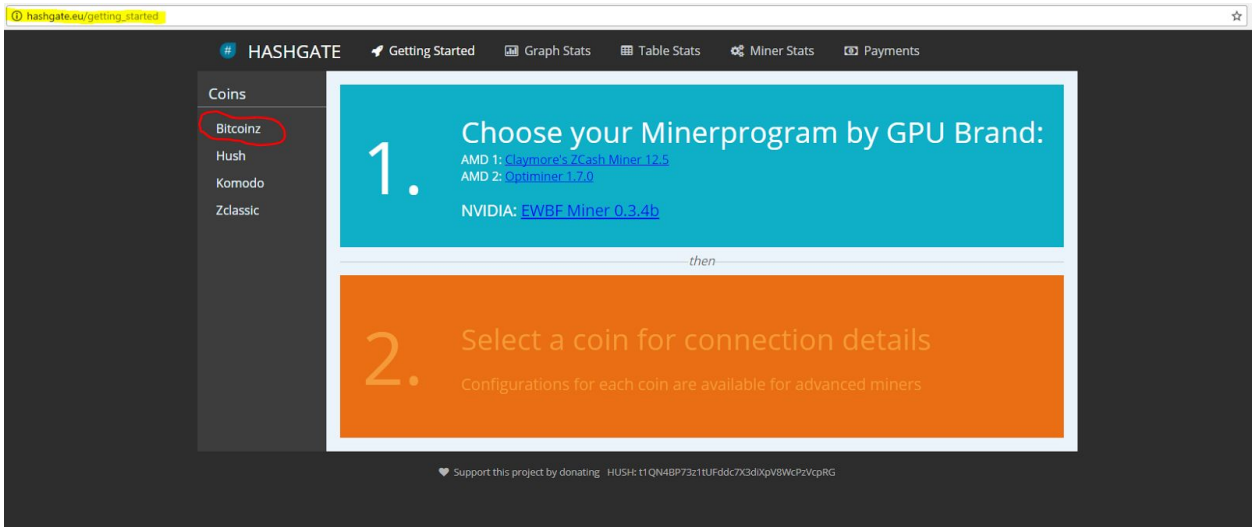
POOL: http://miningpool.io/

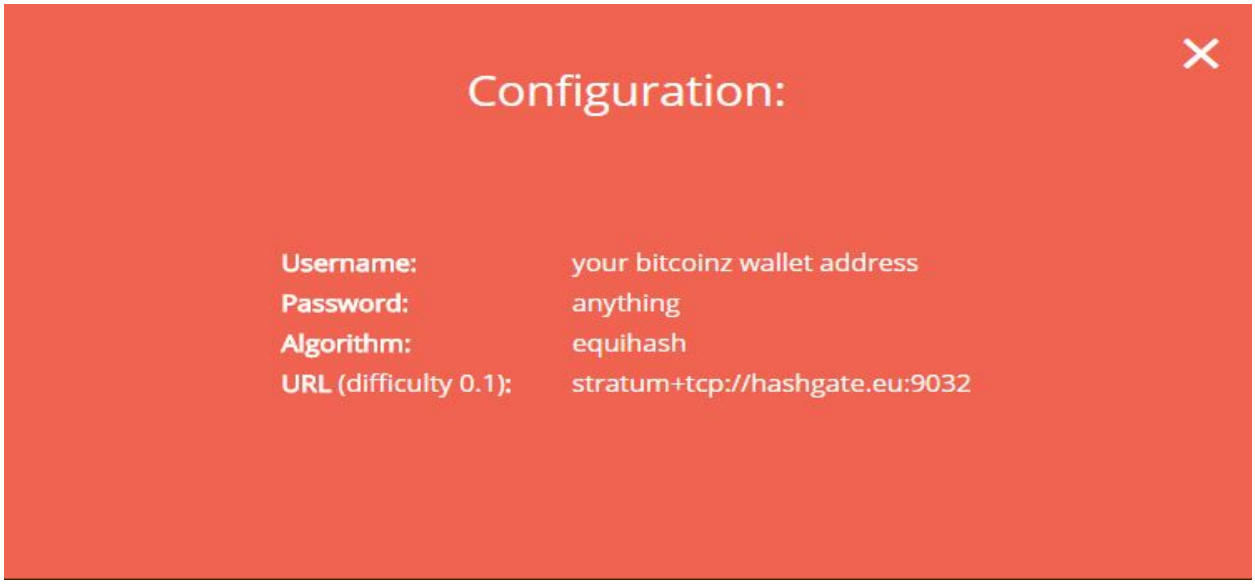




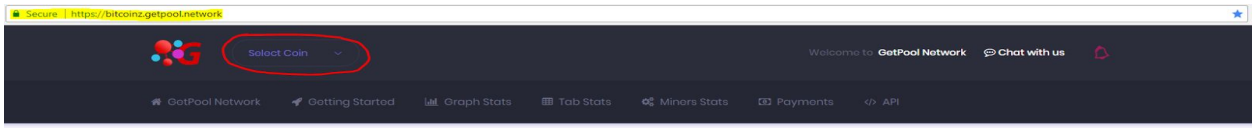
POOL: http://hashgate.eu/

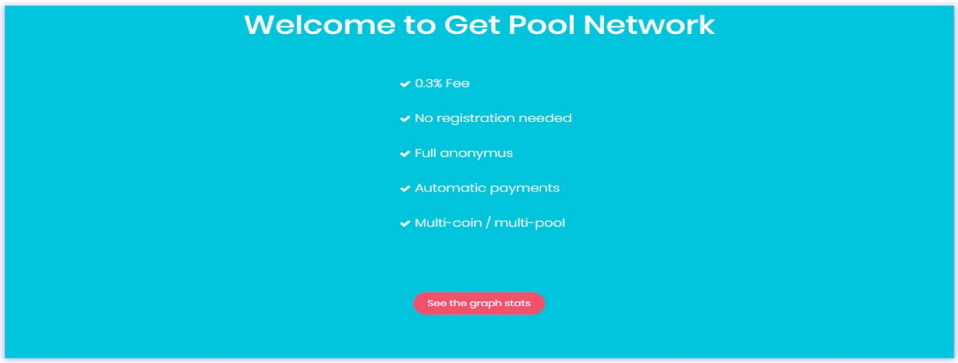






POOL: https://bitcoinz.getpool.network/





How to Connect

Connect with a server closest to your location for highest performance.

US Server	
Username	Your BiitcoinZ Wallet Address
Password	x
Algorithm	Equihash
URL (CPUs & Small GPUs)	btczpool.com port: 3032
URL (GPU Rigs)	btczpool.com port: 3033
URL (Massive Farms):	btczpool.com port: 3034

Europe Server	
Username	Your BiitcoinZ Wallet Address
Password	x
Algorithm	Equihash
URL (CPUs & Small GPUs)	eu.btczpool.com port: 3032
URL (GPU Rigs)	eu.btczpool.com port: 3033
URL (Massive Farms):	eu.btczpool.com port: 3034

Download and Install BitcoinZ Mining Software

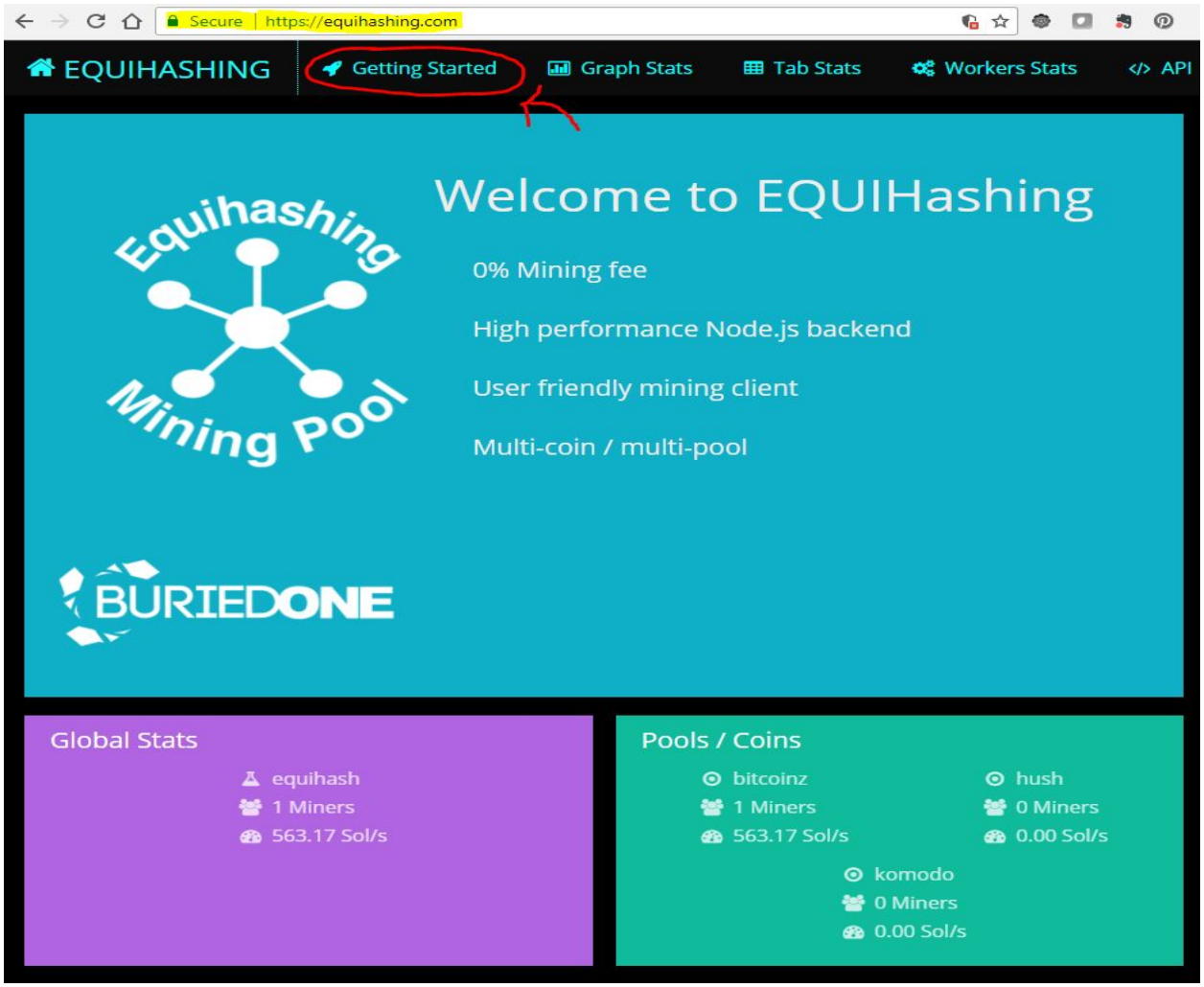
EWBF Miner for NVIDIA GPUs (Equihash Version) - Click Here to Download

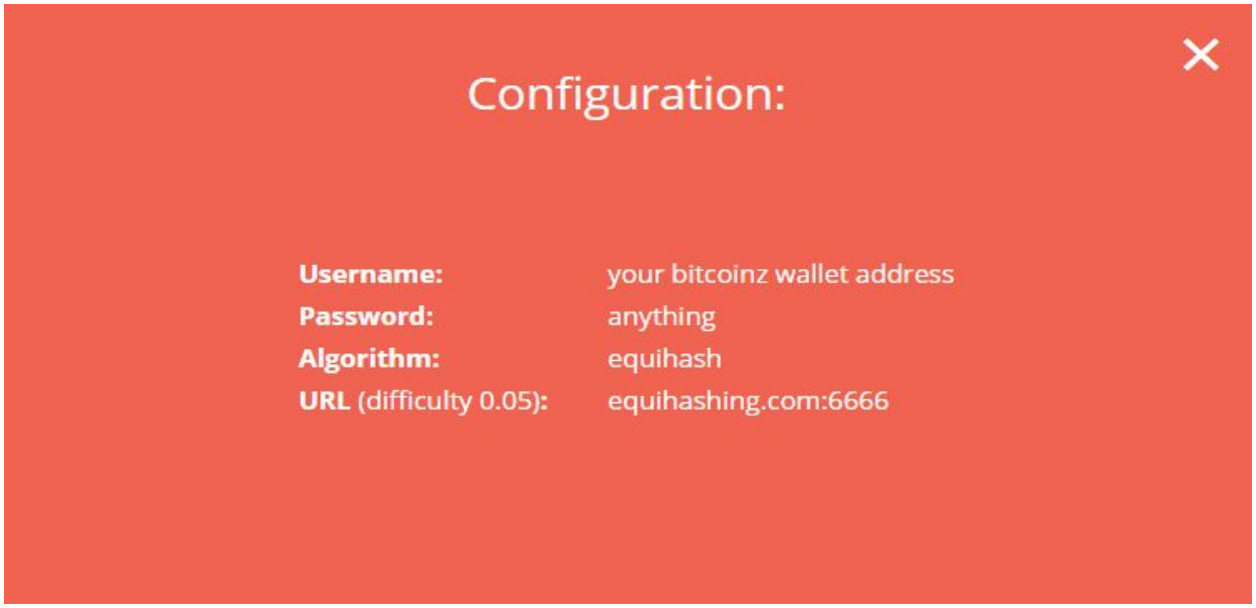
Start your miner with the following command :
miner --server btczpool.com --port XXXX --user t_address.rigname --pass x --pec
Full start command example:
miner --server btczpool.com --port 3032 --user t1J8cr8T5nPcogt4cSAp3tDDeYAeHF6s7t4.Nvidia01 --pass x --pec

Claymore Miner for AMD GPUs (Equihash Version) - Click Here to Download

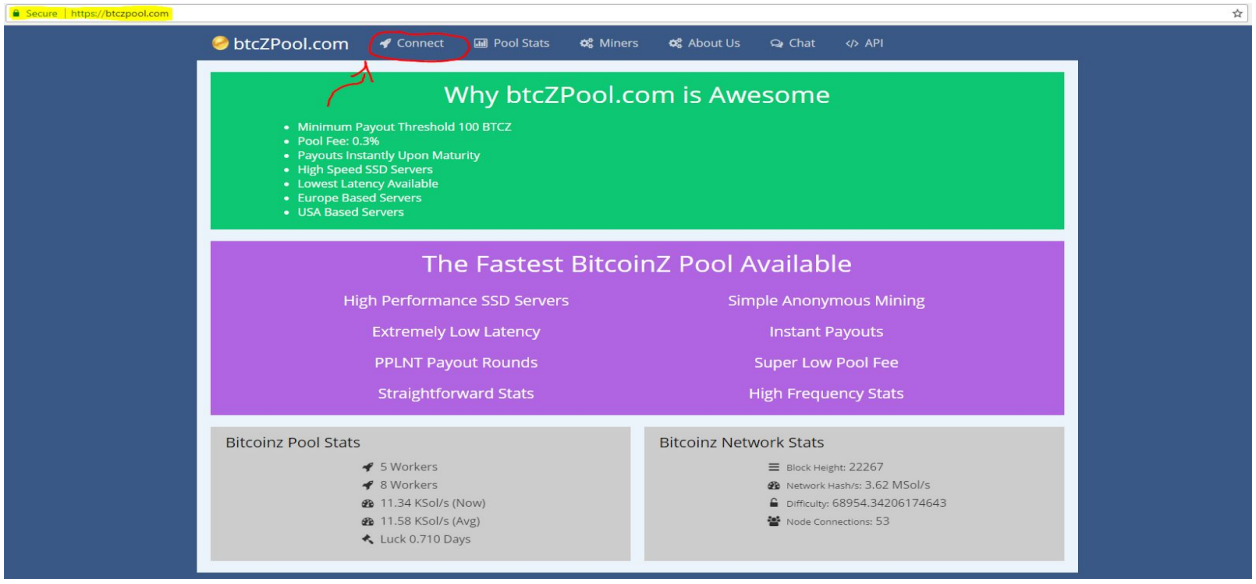
Start your miner with the following command :
ZecMiner64.exe -zpool btczpool.com:XXXX -zwal t_address.rigname -zpsw x -allpools 1
Full start command example:
ZecMiner64.exe -zpool btczpool.com:3032 -zwal t1J8cr8T5nPcogt4cSAp3tDDeYAeHF6s7t4.AMD01 -zpsw x -allpools 1

POOL: https://equihashing.com/getting_started/





POOL: https://btczpool.com/



How to Connect

Connect with a server closest to your location for highest performance.

US Server	
Username	Your BiitcoinZ Wallet Address
Password	x
Algorithm	Equihash
URL (CPUs & Small GPUs)	btczpool.com port: 3032
URL (GPU Rigs)	btczpool.com port: 3033
URL (Massive Farms):	btczpool.com port: 3034

Europe Server	
Username	Your BiitcoinZ Wallet Address
Password	x
Algorithm	Equihash
URL (CPUs & Small GPUs)	eu.btczpool.com port: 3032
URL (GPU Rigs)	eu.btczpool.com port: 3033
URL (Massive Farms):	eu.btczpool.com port: 3034

Download and Install BitcoinZ Mining Software

EWBF Miner for NVIDIA GPUs (Equihash Version) - Click Here to Download

Start your miner with the following command :
miner --server btczpool.com --port XXXX --user t_address.rigname --pass x --pec
Full start command example:
miner --server btczpool.com --port 3032 --user t1J8cr8T5nPcogt4cSAp3tDDeYAeHF6s7t4.Nvidia01 --pass x --pec

Claymore Miner for AMD GPUs (Equihash Version) - Click Here to Download

Start your miner with the following command :
ZecMiner64.exe -zpool btczpool.com:XXXX -zwal t_address.rigname -zpsw x -allpools 1
Full start command example:
ZecMiner64.exe -zpool btczpool.com:3032 -zwal t1J8cr8T5nPcogt4cSAp3tDDeYAeHF6s7t4.AMD01 -zpsw x -allpools 1

POOL: http://www.mineflowpool.pl/

Port numbers

cryptocurrency	Harbor	Stratum Url
BitcoinZ	3036	mineflowpool.pl:3036 stratum + tcp: //mineflowpool.pl: 3036
'Classic	3033	mineflowpool.pl:3033 stratum + tcp: //mineflowpool.pl: 3033

Sample configurations

In place of **YOUR ADDRESS,** paste your address in the **NAME NAME of the** optional name identifying the excavator in question, and paste the port number in place of the **PORT** , eg 3032 for Zcash.

EWBF (NVIDIA GeForce) | ClaymoreZcash (AMD Radeon) | Optimal (AMD Radeon)

The mineflowpool.bat file

```
miner --server mineflowpool.pl --port PORT --user TWOADDESPORTFELA . NAME - password x
```

Sample configurations

In place of **YOUR ADDRESS,** paste your address in the **NAME NAME of the** optional name identifying the excavator in question, and paste the port number in place of the **PORT** , eg 3032 for Zcash.

EWBF (NVIDIA GeForce) | ClaymoreZcash (AMD Radeon) | Optimal (AMD Radeon)

Start.bat file

```
set GPU_FORCE_64BIT_PTR = 1
set GPU_MAX_HEAP_SIZE = 100
set GPU_USE_SYNC_OBJECTS = 1
set GPU_MAX_ALLOC_PERCENT = 100
set GPU_SINGLE_ALLOC_PERCENT = 100
ZecMiner64
```

Config.txt file

```
-zpool mineflowpool.pl PORT - call your friend . NAME- SPsw x -allpools 1
```

Sample configurations

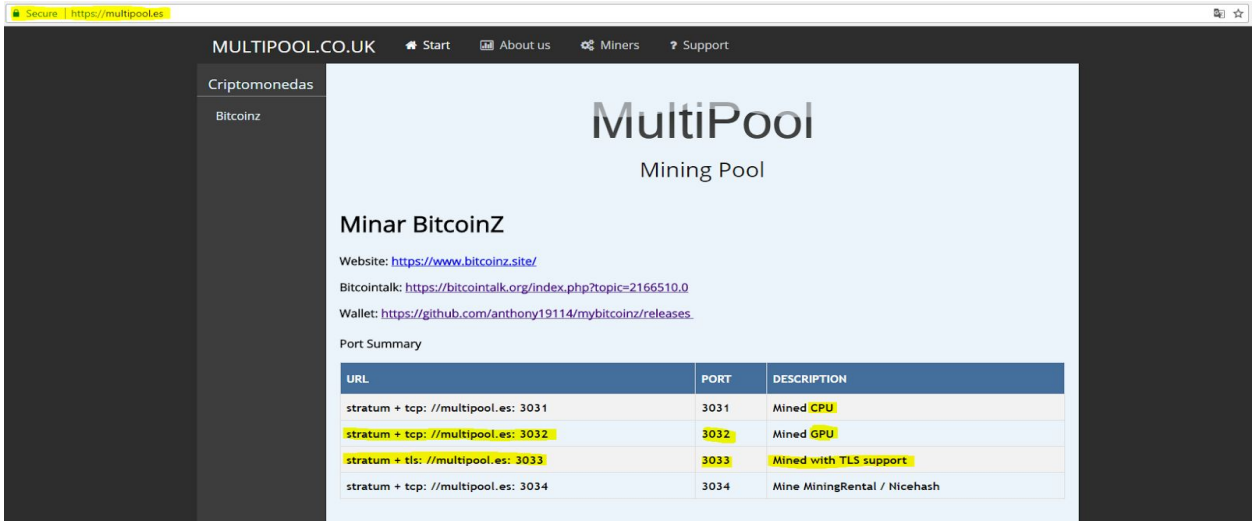
In place of **YOUR ADDRESS,** paste your address in the **NAME NAME of the** optional name identifying the excavator in question, and paste the port number in place of the **PORT** , eg 3032 for Zcash.

EWBF (NVIDIA GeForce) | ClaymoreZcash (AMD Radeon) | Optimal (AMD Radeon)

Start-luckpool.bat file

```
set GPU_FORCE_64BIT_PTR = 1
set POOL = zstratum + tls: //mineflowpool.pl: PORT set POOL = mineflowpool.pl: PORT set USER = YOUR PASSWORD . NAME
đặt PASSWORD = x optiminer -s% POOL% -u% USER% -p% PASSWORD% -m 8080 pause
```

POOL: https://multipool.es/



Minar BitcoinZ with CPU

1. Nheqminer

Download Nheqminer here

Command to start the miner

```
nheqminer.exe -l server: port -u addressWallet.idWorker -px -t threads
```

Example:

```
nheqminer.exe -l multipool.com:3031 -u t1xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.computer1 -px -t 8
```

If you use the pc and want to background, the value of [-t] decreases.
Recommendation Core i3: -t 2 // Core i5: -t 4 // Core i7: -t 6

Minar BitcoinZ with AMD GPU

1. Claymore's

Download Claymore's ZCash GPU Miner here

Commands to start the miner, with and without TLS

```
ZecMiner64.exe -zpool server: port -zwal addressWallet.idWorker -zpsw x -allpools 1 threads
```

TLS Option

```
ZecMiner64.exe -zpool ssl: // server: port -zwal addressWallet.idWorker -zpsw x -allpools 1 threads
```

Examples:

```
ZecMiner64.exe -zpool multipool.es3030 -zwal t1xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.host1 -zpsw x -allpools 1
```

TLS Option

```
ZecMiner64.exe -zpool ssl: //multipol.com: 3033 -zwal t1xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.host1 -zpsw x -allpools 1
```

Minar BitcoinZ with Miningrentals

Hire equihash at Minirentals.com here

Miningrentals example:

```
Adress: stratum + tcp: //multipool.es: 3034 - User: t1xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.idPassword worker: x
```

Minar BitcoinZ with NVIDIA GPU

1. Claymore's

Download Claymore's ZCash GPU Miner here

Commands to start the miner, with and without TLS

```
ZecMiner64.exe -zpool server: port -zwal addressWallet.idWorker -zpsw x -allpools 1 threads
```

TLS Option

```
ZecMiner64.exe -zpool ssl: // server: port -zwal addressWallet.idWorker -zpsw x -allpools 1 threads
```

Examples:

```
ZecMiner64.exe -zpool multipool.es3030 -zwal t1xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.host1 -zpsw x -allpools 1
```

TLS Option

```
ZecMiner64.exe -zpool ssl: //multipol.com: 3033 -zwal t1xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.host1 -zpsw x -allpools 1
```

2. EWBF's CUDA miner

Download EWBF's CUDA Miner here

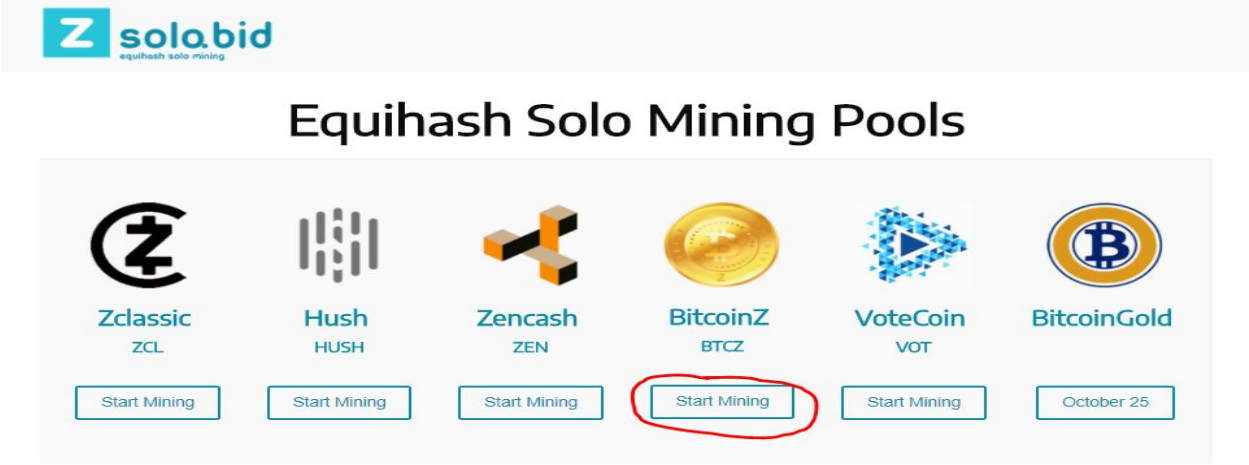
Command to start the miner

```
miner.exe --server server --user addressWallet.idWorker -pass x --port port
```

Example:

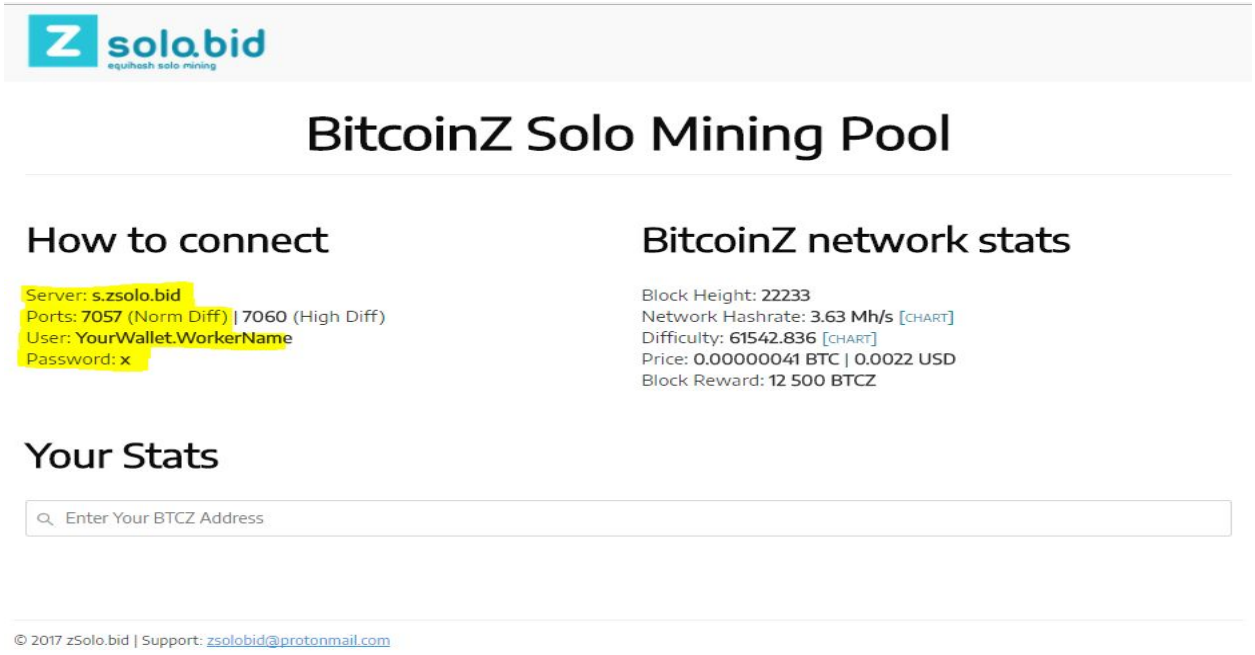
```
miner.exe --server multipool.es --user t1xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.computer1 --pass x --port 3032
```

POOL: https://zsolo.bid/



How to connect

	ZCL Zclassic	HUSH Hush	ZEN Zencash	BTCZ BitcoinZ	VOT VoteCoin
Server	s.zsolo.bid				
Port	3057 (Norm Diff) 3060 (High Diff)	4057 (Norm Diff) 4060 (High Diff)	5057 (Norm Diff) 5060 (High Diff)	7057 (Norm Diff) 7060 (High Diff)	8057 (Norm Diff) 8060 (High Diff)
User	WalletAddress or WalletAddress.WorkerName *e.g. t1CVMnyXStuGKykkFxJ6Lh8DTVJdTMtR34.rig1*				
Password	x				



POOL: http://btz.pool.sexy/#/