Knyk's guide on how to start SCRYPT-Mining with GHash.io

1. Introduction

If you are reading this you probably want to know how you can start mining SCRYPT-Cryptocoins with GHash.io and what “SCRYPT” is.
So read on and in a few minutes you should know everything that is necessary to start mining.

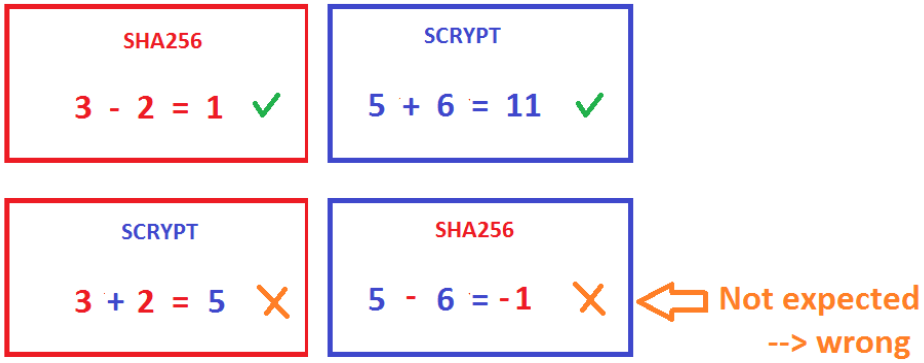
2. What is “SCRYPT”?

SCRYPT vs. SHA256

SCRYPT and SHA256 are both so called “proof-of-work”-algorithms. As the name tells they are used to confirm that you actually worked for the coins you get.

But if they are both “proof-of-work”-algorithms why can’t I just take my GHs from CEX.io and use them for SCRYPT-Coins?

To keep it simple: The math behind those algorithms is different. Imagine that your GHs from CEX.io (using SHA256) would subtract number a from b. (They don’t do so. I just want to keep it simple.) So subtracting would be their work and telling the pool the result their proof-of-work.
SCRYPT would then just be adding number a to b and tell the pool the result. And here is why you can not mine SCRYPT-Coins with your SHA256-Hashes at CEX.io:
If you’d tell them to mine SCRYPT-Coins they would do their work (subtracting a from b) while the pool would expect them to be added. So you can not proof that you have done work. Which means you can’t mine SCRYPT-Coins



Getting ready

So now that you know what SCRYPT is, let's get ready to mine coins.
No matter which operating system you use:

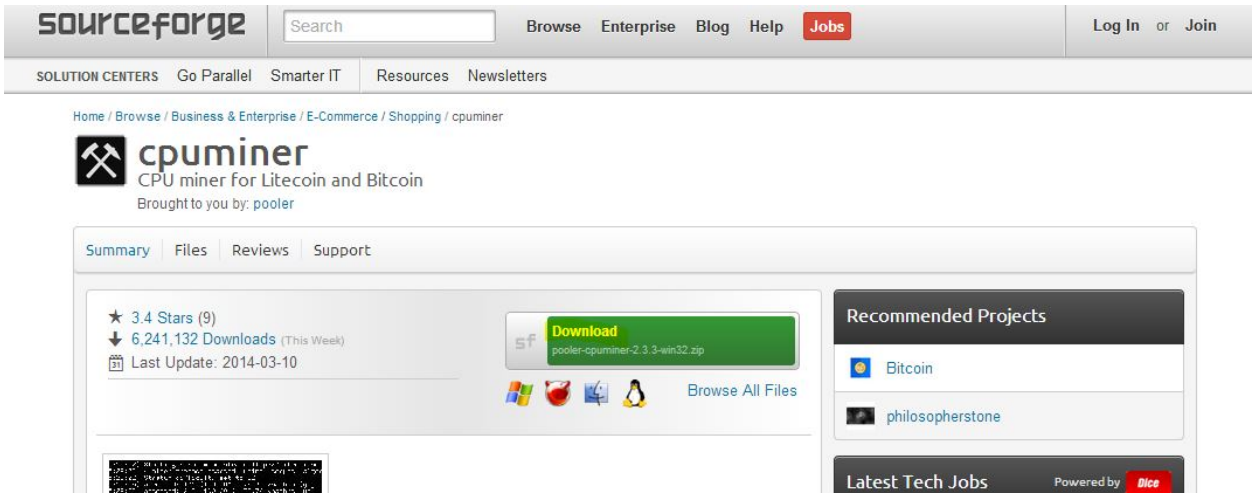
- ➢ Be sure that all **drivers are up-to-date.**
- ➢ If you are planning to mine 24/7: Find a nice place for the computer where it doesn't have to struggle with dust and where it is not to hot. Also the place shouldn't be wet. - A nice place for a Computer.

3. Windows

Preparing your Computer

What do we need to prepare? On Windows we just need to find and download the software that will be mining for us.
We need:

- "cpuminer" - You can get it from here: http://sourceforge.net/projects/cpuminer/
  Just click download.



- "CGMiner" - That's where it gets a bit tricky: You need version **3.7.2**
  I use the version here: http://k-dev.net/cgminer/

Martin "Kalroth" Danielsen's personal cgminer 3.7.2 build.
If you feel like donating for whatever reason: BTC: 1DNBcSEENBwDKrcTyTW61ezWhzsPy5imkn - LTC: LbK4zPvLbXQmCE9B8JdRdJ19LQduDbPHbc
But check if your local charity doesn't support cryptocoins first, they need it more than I do.

Source: http://github.com/Kalroth/cgminer-3.7.2-kalroth.
Commits: http://github.com/Kalroth/cgminer-3.7.2-kalroth/commits.

Compiled and tested on Windows 7 64-bit with one R9 290 and one 6970.

Full change log

Latest version

* 2014-03-24 Windows binary
* 2014-03-24 modified sources files only

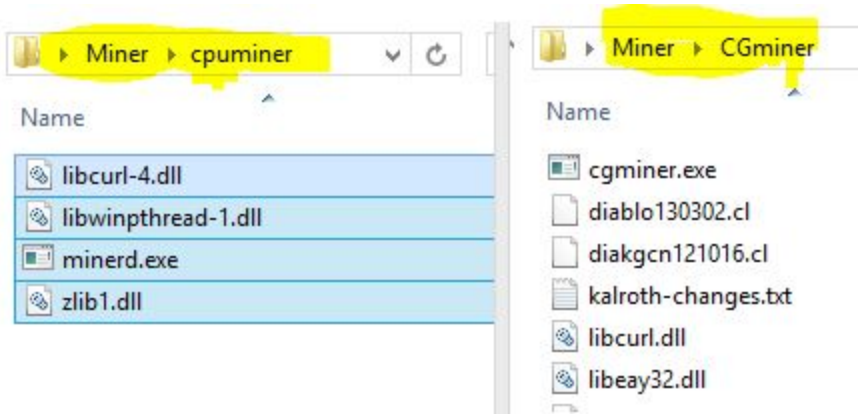
Scrypt optimizations

Lantis' optimized scrypt binaries, see this thread for more information.

Archives

* 2014-03-09 Windows binary
* 2014-03-09 modified sources files only
* 2014-03-04 Windows binary
* 2014-03-04 modified sources files only
* 2014-03-03 Windows binary
* 2014-03-03 modified sources files only
* 2014-02-04 Windows binary
* 2014-02-04 modified sources files only
* 2014-02-01 Windows binary
* 2014-02-01 modified sources files only
* 2014-01-30 Windows binary
* 2014-01-30 modified sources files only
* 2014-01-24 Windows binary
* 2014-01-24 modified sources files only
* 2014-01-23 Windows binary
* 2014-01-23 modified sources files only

Now that you have downloaded everything create a folder for mining somewhere.
Inside that folder you create one folder “CGminer” and one folder “cpuminer”. Put the content of the downloaded ZIP-files in the corresponding folders. It should look like this:



Miner configuration

cpuminer:

So let's configure the software to mine for us.

Right click somewhere in your "cpuminer" folder, select "New" and create a text document. Delete EVERYTHING in the name field (including the .txt) and name it: **mine.bat**

If Windows complains about something just click "Yes".

If your computer doesn't so you the .txt open the editor, click "File → save as…" In filetype select all files and give it the name **mine.bat.** Save it into your "cpuminer" folder.

If you haven't already, open it with the editor so you can edit it.

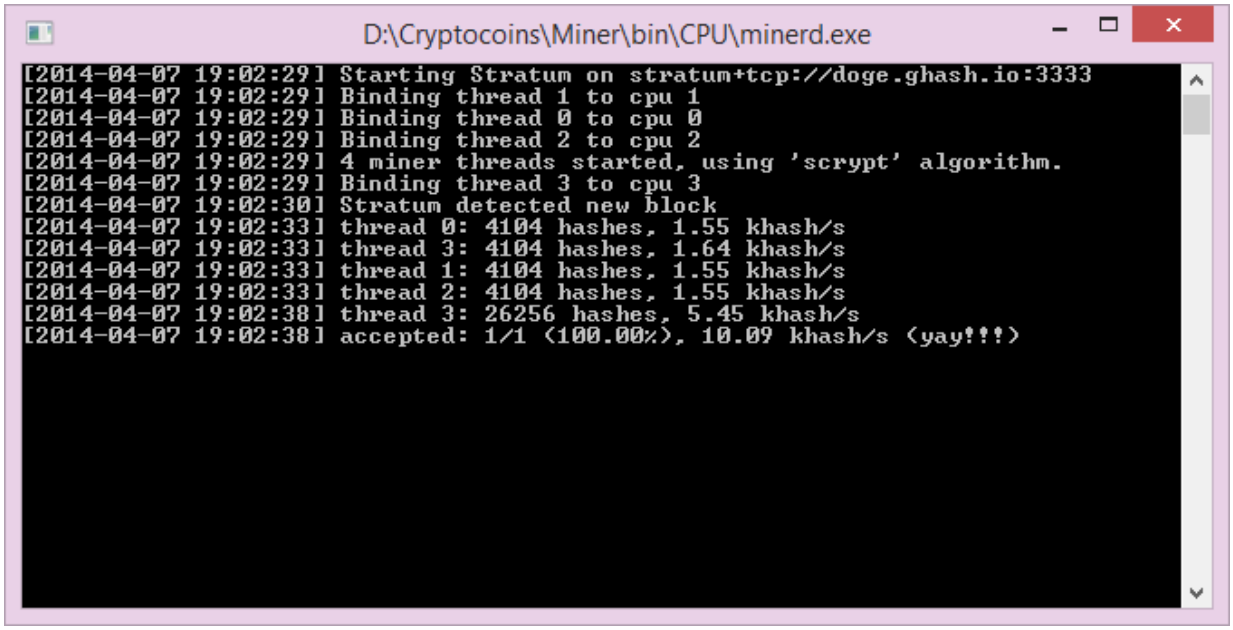
Type in the following:

start minerd.exe --url=stratum+tcp://doge.ghash.io:3333 -u USERNAME.WORKER_CPU -p random

Note that you have to replace USERNAME with your CEX.io Username. WORKER_CPU is the name of your worker. You can change it if you want to. The -p at the end gives the password "random". You don't need this. Just leave it there in case you will have to set a password in the future.

Also note that I used the URL to mine Dogecoins. If you want to mine LTC just replace the doge in the URL with ltc. It should look like this: *stratum+tcp://ltc.ghash.io:3333* just look through GHash.io to find these URLs.

Save the file. If everything is right and you doubleclick your .bat-file your CPU should start mining:



(Your filepath in the top of the window will look a little different)

Hey! It started mining!

Now the last thing we need to do is getting your GPU (Graphics Card) to work. For this we use CGminer.

CGminer:
Configuring CGminer is pretty much the same as configuring cpuminer.
Create a .bat file in your CGminer folder and open it to edit it.
Now here is the difference: The line you need to type in is different. It has to look like this:

start cgminer.exe --scrypt -o stratum+tcp://doge.ghash.io:3333 -u USERNAME.GPU -p random

Basicly the same as above: USERNAME is your CEX.io name, GPU is your workers name. (You may change it if you want) And random is a password you don't need at the moment. Just leave it there.
Adresses are the same as above. Look through GHash.io to find it.
Save it. Doubleclick it.

And it should start mining:

That's it! You're done!
If something didn't work. I have something for you:

Preconfigured ZIP

https://dl.dropboxusercontent.com/u/2213313/Miner.zip

Just download it and unzip it. You'll find a file in it named "config". Open it in the editor. In the first line it says: "a=cexaccname" replace cexaccname with your cex.io username, save it and start the "DOGE.bat" - Done!
If you want to mine LTC open the DOGE.bat and replace the doge in the adress with ltc. (Find adresses @ GHash.io)

```
@echo off &setlocal
for /f "delims== tokens=1*" %%i in (config) do set "%%i=%%j"
start %~dp0\bin\CPU\minerd.exe --url=stratum+tcp://doge.ghash.io:3333 -u %a%.Homepc_CPU -p %b%
start %~dp0\bin\GPU\cgminer.exe --scrypt -o stratum+tcp://doge.ghash.io:3333 -u %a%.GPU -p %b%
```

Save it and start mining by opening the BAT.
Done.

4. Linux (Debian/Ubuntu) *(+ Server)*

Preparing your Computer

In order to get your Linux up for mining we need to do a little bit more than just downloading. I will use the terminal of a Ubuntu Server to demonstrate things but the same things should work on Ubuntu Desktops as well as on Debian.
If you are using a server system additionally do what is written in red. If not: Ignore it.
To open a terminal on your Desktop look through your programs for "Terminal" and open it.
When you're using a server you need to connect to it first. I'm using "PuTTy" for it. Google it, download it, type in your servers IP, click open and login.
First thing to do is:

```
sudo apt-get update
```

Type that in, hit enter, type in your passed if you're asked to. When It's finished we are ready to set up the software.
(in the following always type in your password and confirm with Y if you're asked to)

cpuminer:
type in the following commands:

```
sudo apt-get install yasm -y git make g++ build-essential libminiupnpc-dev

sudo apt-get install -y libboost-all-dev libdb++-dev libgmp-dev libssl-dev
dos2unix

sudo apt-get install build-essential libcurl4-openssl-dev

Server:
sudo apt-get install screen
```

Download cpuminer with:

```
cd
(to make sure you are in your home directory)

wget
http://sourceforge.net/projects/cpuminer/files/pooler-cpuminer-2.3.2.tar.gz

(one command)

tar xzf pooler-cpuminer-2.3.2.tar.gz
```

Unpack it with:

```
tar xzf pooler-cpuminer-2.3.2.tar.gz
```

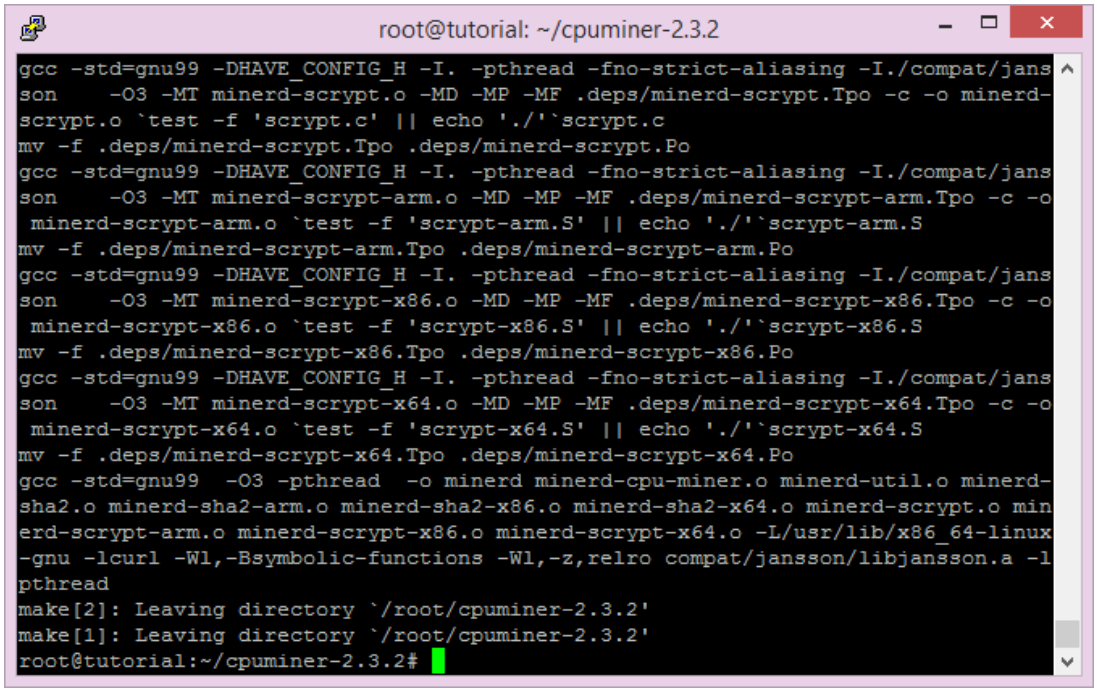
Go into the directory:

```
cd cpuminer-2.3.2
```

finally build and install cpuminer with those (can take a while):

```
./configure CFLAGS="-O3"

make
```



Okay, now lets cofigure it. Type:

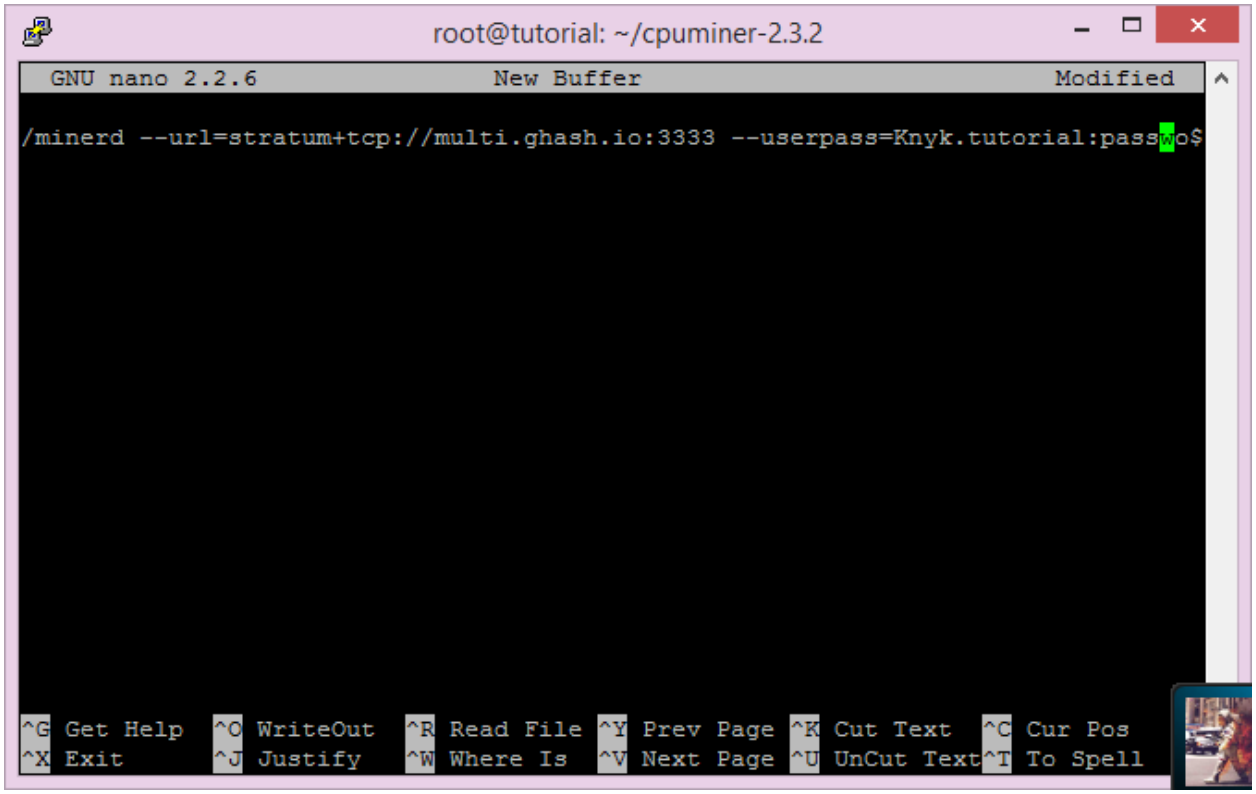
```
sudo nano
```

Now an editor opens. There you type in the following line:

./minerd --url=stratum+tcp://doge.ghash.io:3333 --userpass=USERNAME.CPU:password
(don't forget the dot in front of the /)

Note that you have to replace USERNAME with your CEX.io Username. CPU is the name of your worker. You can change it if you want to. The : at the end gives the password "password". You don't need this. Just leave it there in case you will have to set a password in the future.

Also note that I used the URL to mine Dogecoins. If you want to mine LTC just replace the doge in the URL with ltc. It should look like this: *stratum+tcp://ltc.ghash.io:3333* just look through GHash.io to find these URLs.



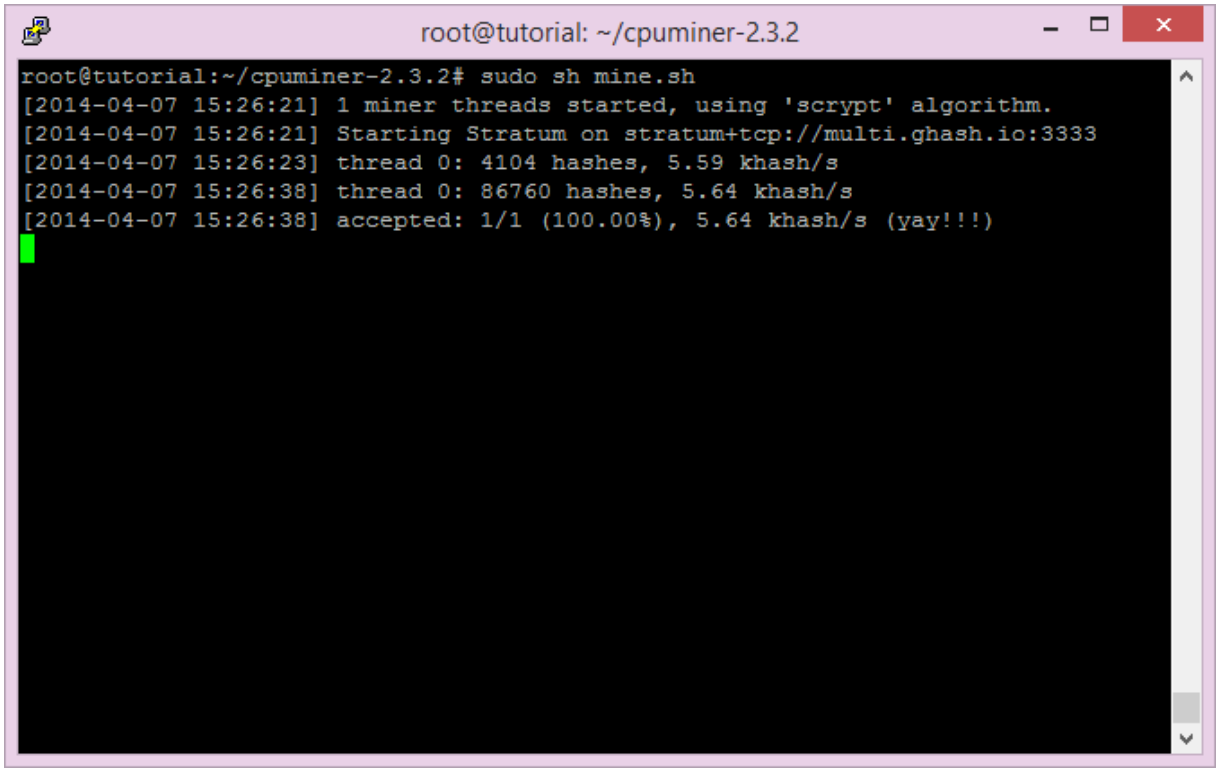
Save it by pressing CTRL+X and press Y. You will be asked for a filename to write to. Name it ***mine.sh***
Hit enter and you should be ready to start mining with cpuminer
For Servers no is the time to type in

sudo screen -S mine

so that the server continues mining when you close connection.

start it by typing:

```
sudo sh mine.sh
```



It mines!

cgminer:

Open a new terminal window.
Servers: Close connection and reconnect.

Type:

cd

sudo apt-get install libcurl4-openssl-dev pkg-config libtool libncurses5-dev libudev-dev screen xterm

```
sudo apt-get install git-core

sudo apt-get install byobu

sudo apt-get install autoconf

sudo apt-get install automake
```

```
Server:
sudo apt-get install screen
(if you haven't already)
```

Download CGminer with (you need version 3.7.2):

```
wget http://ck.kolivas.org/apps/cgminer/3.7/cgminer-3.7.2.tar.bz2
```

Be sure that your Graphics Card drivers are installed!
Servers should be able to install the drivers for AMD with the following commands after downloading and unpacking ***(Be carefull! I personally never did this because I have no GPU servers)***:

```
cd /opt
sudo tar xvzf /home/username/AMD-APP-SDK-v2.8.1.0-lnx32.tgz
cd /
sudo tar xvzf /opt/icd-registration.tgz
cd /opt
sudo tar xvzf AMD-APP-SDK-v2.8.1.0-RC-lnx32.tgz
sudo ln -s /opt/AMD-APP-SDK-v2.8.1.0-RC-lnx32/include/CL /usr/include
sudo ln -s /opt/AMD-APP-SDK-v2.8.1.0-RC-lnx32/lib/x86/* /usr/lib/
cd
mkdir ADL
mv ADL_SDK_5.0.zip ADL
cd ADL
unzip ADL_SDK_5.0.zip
sudo cp include/*.h /home/username/cgminer/ADL_SDK
```

unpack and build cgminer:

tar xvjf cgminer-3.7.2.tar.bz2

cd cgminer-3.7.2

CFLAGS="-O2 -Wall -march=native -I/opt/AMD-APP-SDK-v2.8.1.0-RC-lnx32/include" LDFLAGS="-L/opt/AMD-APP-SDK-v2.8.1.0-RC-lnx32/lib/x86" ./configure --enable-opencl --enable-scrypt

(one command, if there are any errors check your driver version and adjust this)

sudo make
sudo make install
cd cgminer

check if your drivers are working:

./cgminer -n

Servers: Here is the time to do:
screen -S cgminer

./cgminer

Start it by using:
./cgminer

It should ask you for a pool adress, a worker and a password.
Pool adress: ***stratum+tcp://doge.ghash.io:3333 or stratum+tcp://ltc.ghash.io:3333***
Look through Ghash.io for all)
Worker: YOURCEXIOUSER.GPU (replace YOURCEXIOUSER with your CEX.IO username. You may change GPU if you like.)
Password: leave blank

It should be mining now!

5. Wanna donate?

Congratulations! You successfully started SCRYPT-mining at CEX.io!
If you want to donate use these adresses:

BTC	1Jr2oB2W7bNk8WwnAqAXN8KmEnJoEw8mwW
LTC	LZ8RTB29Zd9v9YnnBb7kBgiftsrtGYNcqR
DOGE	DBvUSBZBrdcoNjSjiZ3ns6PHA3os3aeWK7