

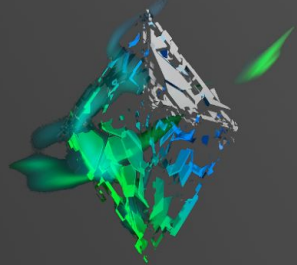
How to Mine



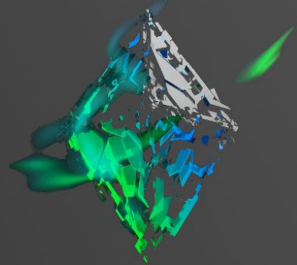
using the Blockchain

Summary

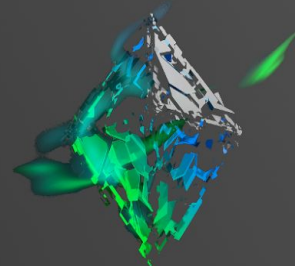
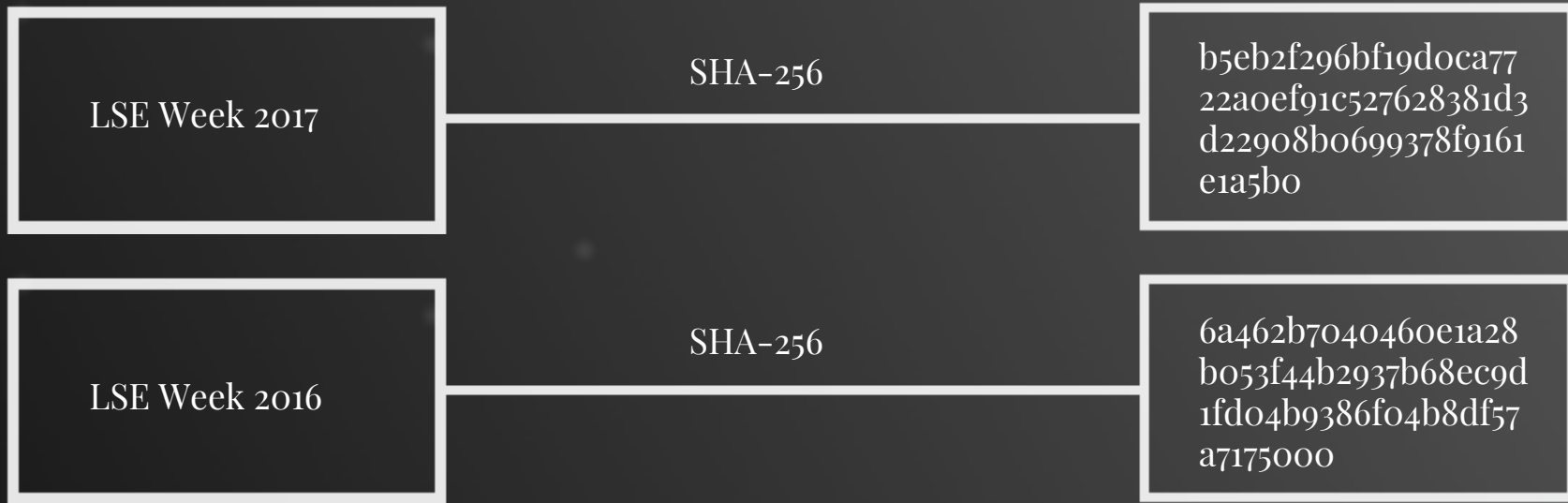
1. What is mining
2. How to mine
3. Which GPUs to buy
4. How to optimize
5. Issues and Advices
6. Misc



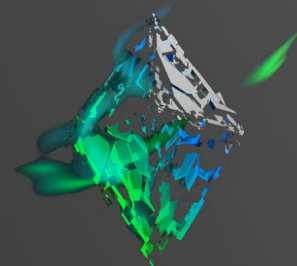
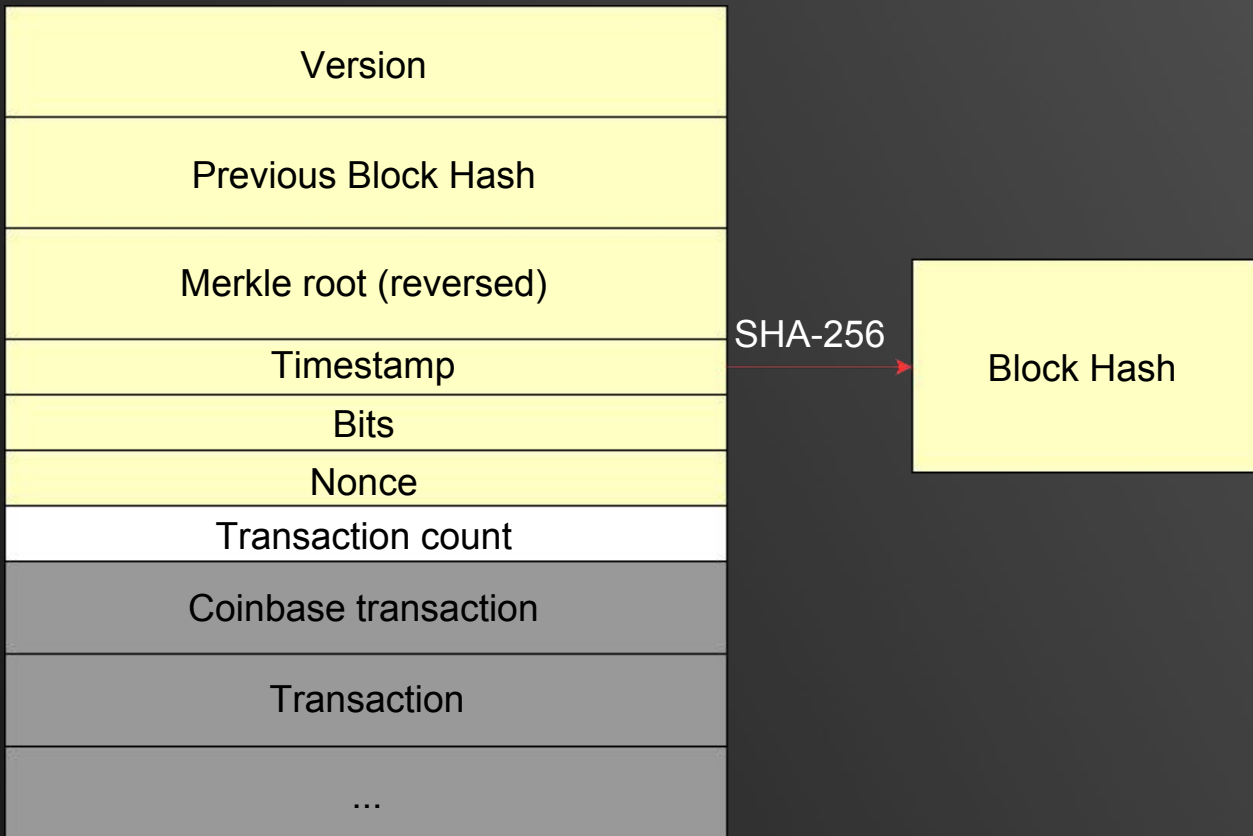
What is mining ?



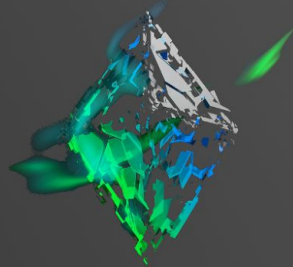
What is a Hash ?



Mine a Block - Bitcoin




How to mine ?



The Wallet...

Create a Wallet to store your coins



MyEtherWallet

Create New Wallet

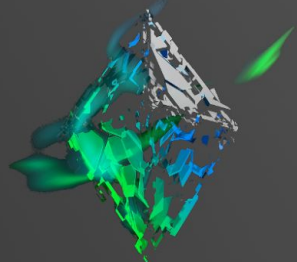
Enter a password

Do NOT forget to save this!

Create New Wallet

The image shows a screenshot of the MyEtherWallet website's 'Create New Wallet' page. At the top, there is a dark blue header with the MyEtherWallet logo and name. Below this, the main content area is white and contains the heading 'Create New Wallet'. Underneath the heading is a form with the label 'Enter a password'. The form consists of a text input field containing the text 'Do NOT forget to save this!' and a toggle button with an eye icon. Below the input field is a blue button labeled 'Create New Wallet'.

[Github.com/CryptoStudent/LSEWEEK](https://github.com/CryptoStudent/LSEWEEK)



Mining ...

- Mine with a Pool : Ethermine, Flypool, Mining Pool Hub, nanopool. Mining Pool Hub does algo-switching for maximum profitability.
- Solo Mining.

```
+-----+
|           EWBF's Zcash CUDA miner. 0.3.4b           |
+-----+
INFO: Current pool: eu1-zcash.flypool.org:3333
INFO: Selected pools: 1
INFO: Solver: Auto.
INFO: Devices: User defined.
INFO: Temperature limit: 90
INFO: Api: Disabled
-----
INFO: Target: 00083126e978d4fd...
CUDA: Device: 0 GeForce GTX 1070, 8192 MB i:64
CUDA: Device: 1 GeForce GTX 1060 3GB Not selected.
INFO: Detected new work: 722f62996da2a94c132b
CUDA: Device: 0 Selected solver: 0
Temp: GPU0: 64C
GPU0: 484 Sol/s
Total speed: 484 Sol/s
INFO 21:07:43: GPU0 Accepted share 8ms [A:1, R:0]
INFO: Detected new work: 5ffa1c269bba64e65fac
Temp: GPU0: 70C
GPU0: 484 Sol/s
Total speed: 484 Sol/s
INFO 21:08:14: GPU0 Accepted share 7ms [A:2, R:0]
INFO 21:08:15: GPU0 Accepted share 7ms [A:3, R:0]
```

```
GPU 0 DAG creation time - 6185 ms
Setting DAG epoch #133 for GPU #0 done
GPU 1 DAG creation time - 7723 ms
Setting DAG epoch #133 for GPU #1 done
SC: 07/13/17-21:10:43 - New job from hub.miningpoolhub.com:20550
GPU0 t=72C fan=72%, GPU1 t=57C fan=47%
ETH: 07/13/17-21:11:06 - New job from eu1.ethermine.org:14444
ETH - Total Speed: 47.958 Mh/s, Total Shares: 0, Rejected: 0, Time: 00:00
ETH: GPU0 28.786 Mh/s, GPU1 19.172 Mh/s
SC - Total Speed: 479.576 Mh/s, Total Shares: 0, Rejected: 0
SC: GPU0 287.859 Mh/s, GPU1 191.717 Mh/s
ETH: 07/13/17-21:11:13 - New job from eu1.ethermine.org:14444
ETH - Total Speed: 47.965 Mh/s, Total Shares: 0, Rejected: 0, Time: 00:00
ETH: GPU0 28.755 Mh/s, GPU1 19.210 Mh/s
SC - Total Speed: 479.649 Mh/s, Total Shares: 0, Rejected: 0
SC: GPU0 287.545 Mh/s, GPU1 192.104 Mh/s
SC: 07/13/17-21:11:16 - SHARE FOUND - (GPU 0)
SC: Share accepted (94 ms)!
GPU0 t=76C fan=74%, GPU1 t=63C fan=54%
ETH: 07/13/17-21:11:17 - New job from eu1.ethermine.org:14444
ETH - Total Speed: 48.049 Mh/s, Total Shares: 0, Rejected: 0, Time: 00:01
ETH: GPU0 28.849 Mh/s, GPU1 19.200 Mh/s
SC - Total Speed: 480.485 Mh/s, Total Shares: 1, Rejected: 0
SC: GPU0 288.490 Mh/s, GPU1 192.480 Mh/s
ETH: 07/13/17-21:11:19 - SHARE FOUND - (GPU 1)
ETH: Share accepted (16 ms)!
SC: 07/13/17-21:11:38 - SHARE FOUND - (GPU 1)
SC: Share accepted (78 ms)!
SC: 07/13/17-21:11:38 - New job from hub.miningpoolhub.com:20550
ETH: 07/13/17-21:11:44 - New job from eu1.ethermine.org:14444
```


Mining - MultiPoolMiner

Type : NVIDIA

Miner	Algorithm	Speed	BTC/Day	BTC/GH/Day	Pool
CcminerSp	Skein	850,23 MH/s	0,00213	0,00251	MiningPoolHub-DigibyteSkein
CcminerTpruvot	Skein	592,05 MH/s	0,00148	0,00251	MiningPoolHub-DigibyteSkein
CcminerKlaust	Groestl	63,82 MH/s	0,00127	0,01983	MiningPoolHub-Groestlcoin
CcminerTpruvot	Groestl	60,93 MH/s	0,00121	0,01983	MiningPoolHub-Groestlcoin
CcminerKlaust	MyriadGroestl	117,63 MH/s	0,00120	0,01023	MiningPoolHub-MyriadcoinGroestl
CcminerKlaust	NeoScript	1,81 MH/s	0,00107	0,59046	MiningPoolHub-Feathercoin
CcminerNanashi	Lyra2RE2	57,55 MH/s	0,00106	0,01843	MiningPoolHub-Vertcoin
CcminerTpruvot	Lyra2RE2	54,65 MH/s	0,00101	0,01843	MiningPoolHub-Vertcoin
CcminerTpruvot	NeoScript	1,53 MH/s	0,00090	0,59046	MiningPoolHub-Feathercoin
CcminerTpruvot	MyriadGroestl	75,90 MH/s	0,00078	0,01023	MiningPoolHub-MyriadcoinGroestl
CcminerTpruvot	Cryptonight	1,06 KH/s	0,00073	686,17740	MiningPoolHub-Monero
CcminerTpruvot	Lyra2z	2,32 MH/s	0,00066	0,28402	MiningPoolHub-Zcoin
FireiceNvidia0	Cryptonight	697,00 H/s	0,00048	686,17740	MiningPoolHub-Monero
CcminerLyra2z	Lyra2z	1,60 MH/s	0,00045	0,28402	MiningPoolHub-Zcoin
CcminerTpruvot	Qubit	22,41 MH/s	0,00033	0,01459	MiningPoolHub-DigibyteQubit
CcminerTpruvot	X11	21,70 MH/s	0,00019	0,00873	MiningPoolHub-Dash

Based on algo-switching for best profitability

Type : {AMD, NVIDIA}

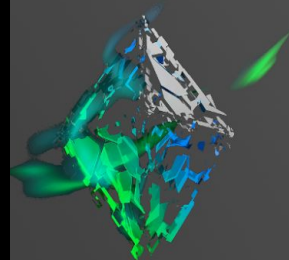
Miner	Algorithm	Speed	BTC/Day	BTC/GH/Day	Pool
ClaymoreDual40	{Ethash, Sia}	{32,06 MH/s, 427,49 MH/s}	{0,00095, 0,00010}	{0,02963, 0,00024}	{MiningPoolHub-Ethereum, MiningPoolHub-Siacoin}
ClaymoreDual30	{Ethash, Sia}	{32,01 MH/s, 320,11 MH/s}	{0,00095, 0,00008}	{0,02963, 0,00024}	{MiningPoolHub-Ethereum, MiningPoolHub-Siacoin}
ClaymoreDual20	{Ethash, Sia}	{32,13 MH/s, 214,21 MH/s}	{0,00095, 0,00005}	{0,02963, 0,00024}	{MiningPoolHub-Ethereum, MiningPoolHub-Siacoin}
Claymore	Ethash	32,54 MH/s	0,00096	0,02963	MiningPoolHub-Ethereum
Gatelessgate	NeoScript	472,60 KH/s	0,00028	0,59046	MiningPoolHub-Feathercoin

Status : Running

Speed Active Launched Command

0,00 PH/s 00 Days 00 Hours 00 Minutes Once Bin\NVIDIA-SP\ccminer.exe -b 127.0.0.1:4068 -a skein -o stratum+tcp://hub.miningpoolhub.com:17016 -u Azu.Azu -p x -i 27

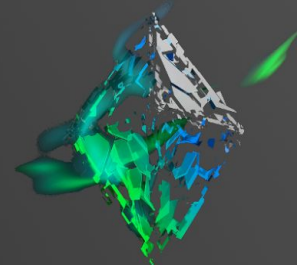
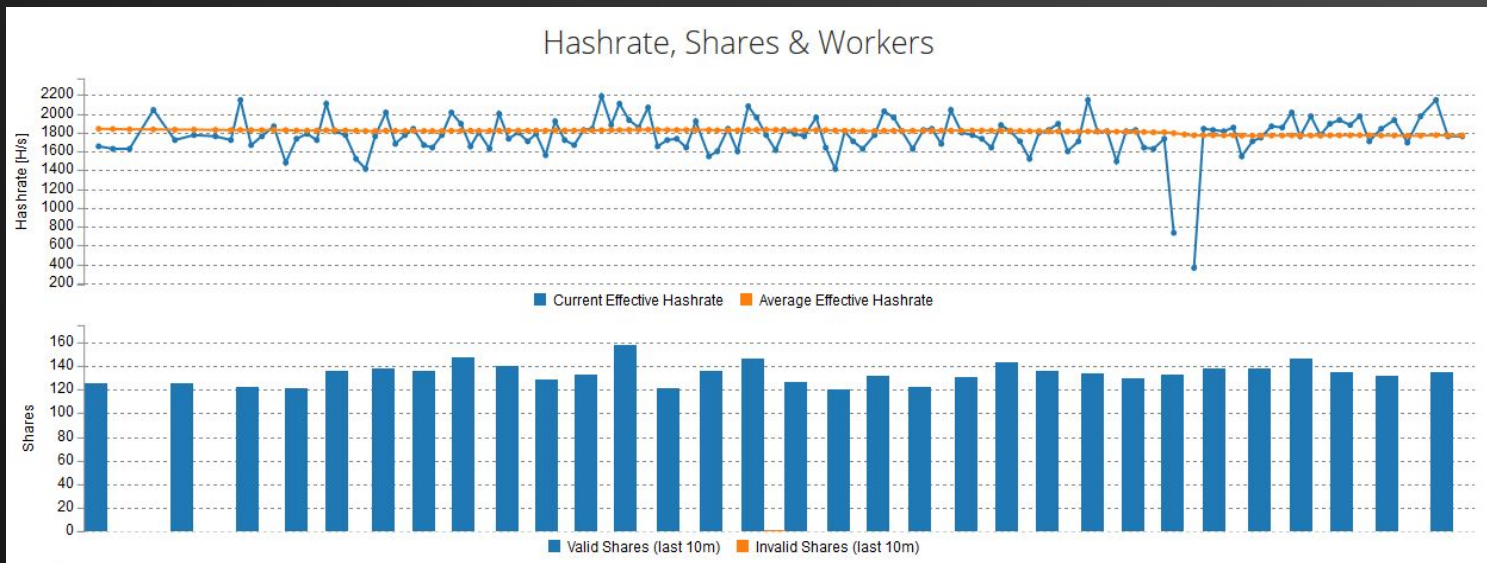
Miner	BTC	USD
MultiPoolMiner	0,00213	4,99750
CcminerSp-Skein	0,00213	4,99750



Mining ...

In a pool :

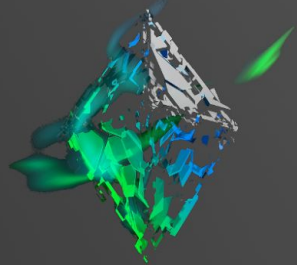
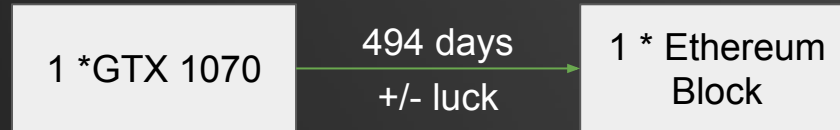
- Get rewards for the shares you submitted. PPLNS or PPS payment.
- Pay Per Last N Shares vs Pay Per Shares



Mining ...

Solo Mining :

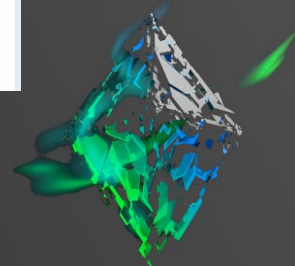
- Only if you have a lot of hashing power. Luck of finding a block very low.
- Get paid directly by the blockchain. 5 ETH reward for ethereum for example.



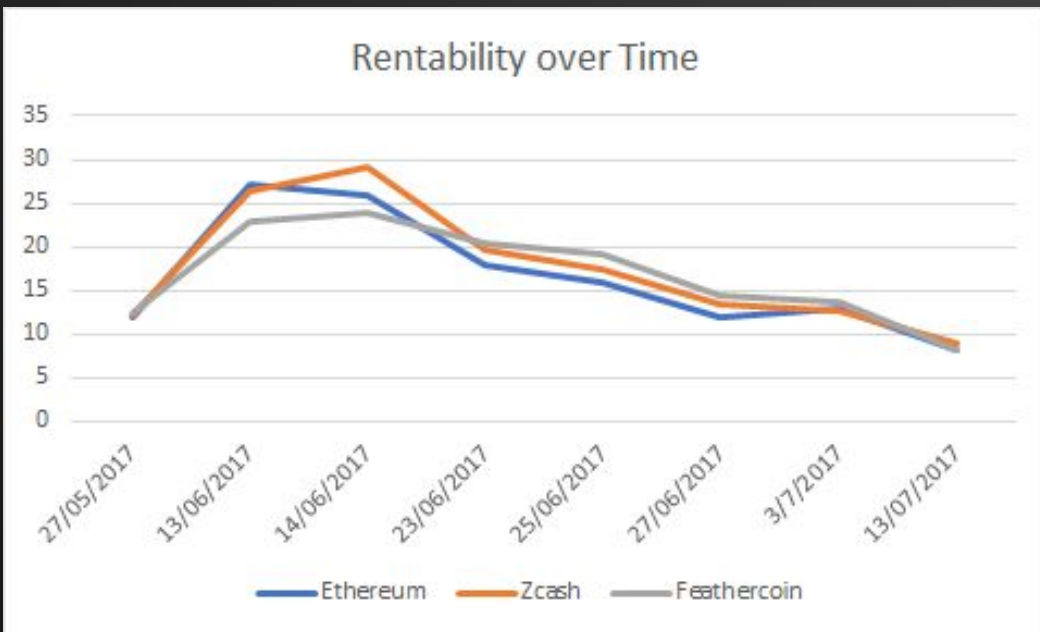
Mining - Rewards Ethereum June 1 GPU

180144309	2017-06-07 11:03:10 (UTC)	Debit_AP	Confirmed	0x3ef101...5c555c47	0x298566...ada1d933	n/a	0.05092885
177226711	2017-06-06 07:01:44 (UTC)	Debit_AP	Confirmed	0x3ef101...5c555c47	0x1c0507...94c32a32	n/a	0.24951835
165016088	2017-06-01 11:25:40 (UTC)	Debit_AP	Confirmed	0xbe66FF...3875427F	0xe618d0...4986b2bf	n/a	0.05443429
161628687	2017-05-31 01:19:02 (UTC)	Debit_AP	Confirmed	0xbe66FF...3875427F	0xfc8f3d...b5dfa4e	n/a	0.06077822
158590811	2017-05-29 17:50:56 (UTC)	Debit_AP	Confirmed	0xbe66FF...3875427F	0x1d5826...c3100a05	n/a	0.04992956
155896551	2017-05-28 13:27:25 (UTC)	Debit_AP	Confirmed	0x3ef101...5c555c47	0x7f9100...e7c80959	n/a	0.06533965
153159791	2017-05-27 04:49:39 (UTC)	Debit_AP	Confirmed	0x3ef101...5c555c47	0x796772...fec980c4	n/a	0.05526736
151591447	2017-05-26 08:35:45 (UTC)	Debit_AP	Confirmed	0x3ef101...5c555c47	0x090444...14c80d40	n/a	0.08242084
149123926	2017-05-24 19:55:50 (UTC)	Debit_AP	Confirmed	0x3ef101...5c555c47	0xba9f43...8c830011	n/a	0.09892258

[Github.com/CryptoStudent/LSEWEEK](https://github.com/CryptoStudent/LSEWEEK)



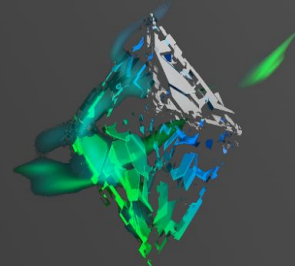
Mining Rentability - 4 GTX 1070



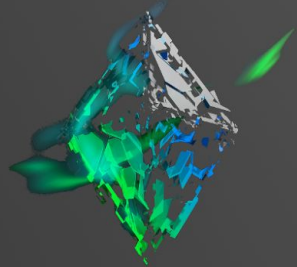
May - 2 Weeks 1 GPU 1 Eth ~ 80 \$

June - 1 ETH = 400 \$

July - 3 Weeks 4 GPUs 1 Eth ~ 200 \$



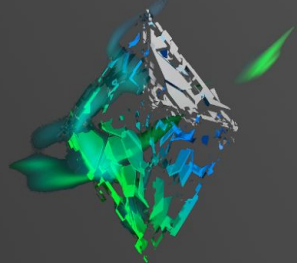
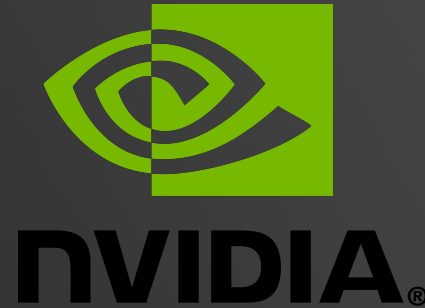
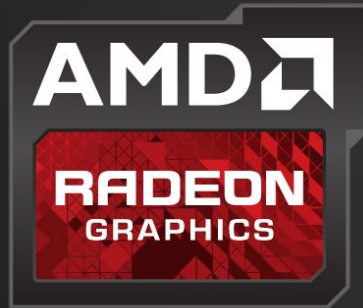
Which GPUs to buy ?



GPUs purchased

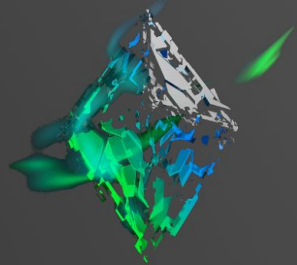
RADEON (RX) : Efficient on Ethash and Equihash algorithms but not good on others.

NVIDIA (GTX) : As efficient as Radeon but also efficient on other algorithms, but more expensive.

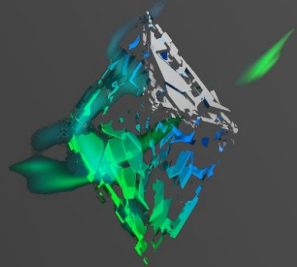


Mining today

- Boom in mining last month
- Shortage of GPU (prices skyrocketed)
- Increased difficulty
- Decrease in profitability (6\$/1070 1 month ago vs 2\$/1070 today)
- Best GPUs for mining : RX 470/480/570/580 & GTX 1060/1070



How to optimize ?



Choose your driver !

On GTX 970 without OC on Ethereum:

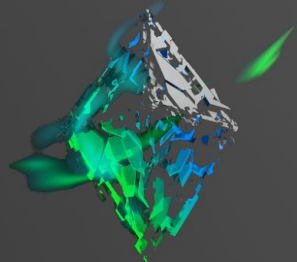
- Driver NVIDIA 347.52: 17-19 mH/s
- Driver NVIDIA 353.54: 3-7 mH/s

On RX480 without OC on Ethereum:

- Latest driver: 17 mH/s
- Chrimson 16.9.2: 24.3 mH/s

On GTX 1070 and 1060:

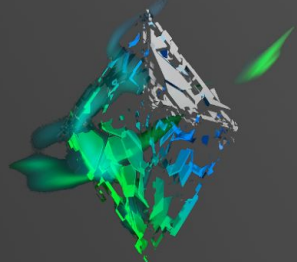
- No big differences



Use overclocking?

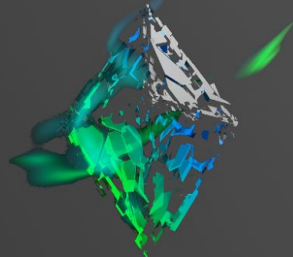
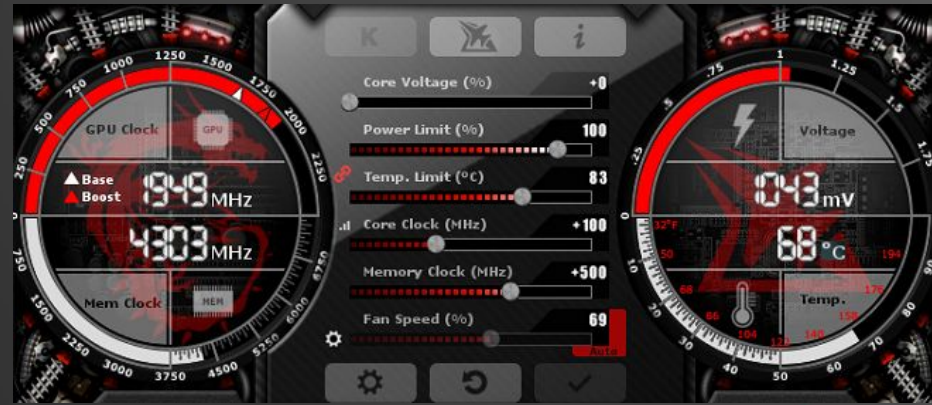
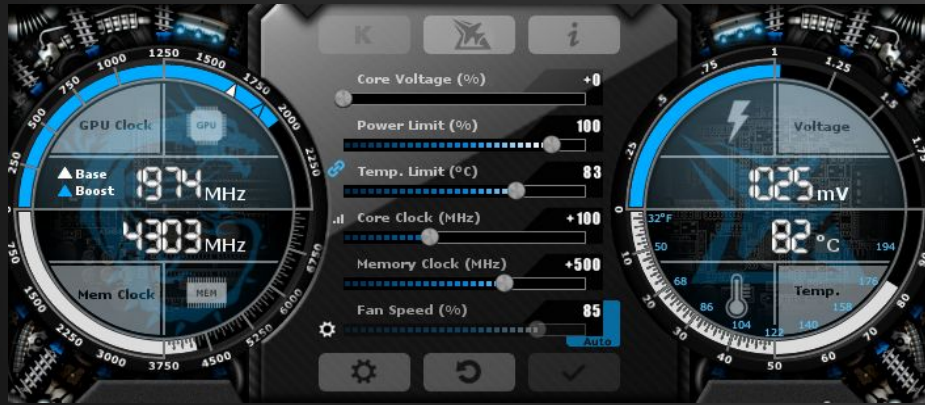
	Power	Hashrate	Price Elec/24H	Watt	Hashrate
Zcash	700	1744	2.52 €	100%	100%
Zcash OC	770	1940	2.77 €	110%	111%
Ethereum Dual	650	102.4	2.34 €	100%	100%
Ethereum Dual OC	725	118.8	2.61 €	112%	116%

Overclocking your GPU will be more profitable in this cases !

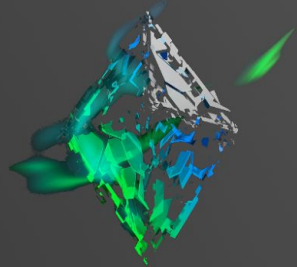


Control your temperature

The graphics cards create heat so you need to cool down the system, lower temperature = lower consumption ~ 6% here

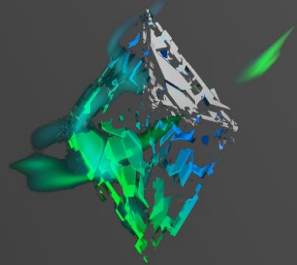


Issues and advices !



Our advices !

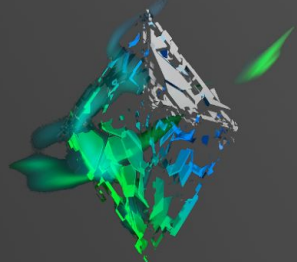
- Check the quality of the equipment you are buying
- Test components one by one on a different computer
- Do not overload your PSU !
- Place your rig in a room with fresh air
- Check the capacitors of your risers before connecting them



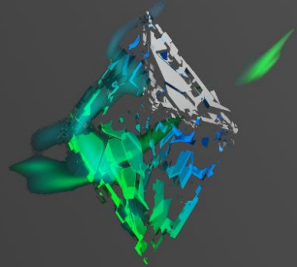
What to buy to build your mining Rig ?

- Motherboard : Asrock H81 Pro BTC -- 120 €
- CPU : Intel Celeron G1840 -- 42 €
- Ram 4Gb -- 38 €
- SSD 120 Gb -- 50 €
- PSU Seasonic or LDLC Platinum 1000 W (1200 for 6 cards) -- 200 €
- GPUs : GTX 1070 (Armor OC) or RX 480 Sapphire Nitro+ 8Gb -- 369 €
- Risers PCI-e x16 to PCI-e x1 -- 25 €
- Rig structure -- 90 €
- Power On/Off Button -- 5 €

Cost of 5 GTX 1070 Rig = 2415 €



Misc



Market Capitalization

Global Charts

Total Market Capitalization

Zoom **1d** 7d 1m 3m **1y** YTD ALL

From Jul 12, 2016 To Jul 12, 2017 



Github Tutorial !

[Github.com/CryptoStudent/LSEWEEK](https://github.com/CryptoStudent/LSEWEEK)

- Create a wallet
- Mining
- Exchange Cryptocurrency
- Interesting Links

LSE WEEK 2017

Tutorial for mining easily.

1. Create a Wallet

- o [Ethereum](#)
- o [Zcash](#)
- o [Bitcoin](#)

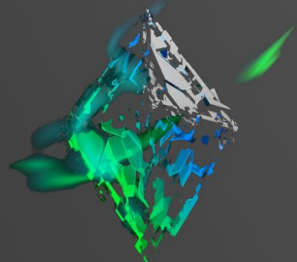
2. Mining

- o [Mining Pool Hub](#)
- o [Zcash](#)
- o [Ethereum](#)
- o [Dual Mining](#)

3. Buy/Sell Cryptocurrency

- o [Coinbase](#)
- o [Poloniex/Bittrex](#)
- o [Livecoin](#)

4. Interesting Links



Thank you !

Any questions ?

[Github.com/CryptoStudent/LSEWEEK](https://github.com/CryptoStudent/LSEWEEK)

