



NENGCoin WHITEPAPER

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Introduction

The top popular cryptocurrencies that are PoW (Proof of Work) are only mineable with high end PCs, GPUs and new state of the art ASICs. The problem is unless you have a fleet of CPUs, GPUs or ASICs ready at your disposal, then you would not be able to profit in these crypto coins. Small miners are in the back while the big mining farms are at the forefront reaping majority of the block rewards. Another issue is that many old and forgotten android phones, PCs and ASICs are in storage for long periods of time. Lastly, the full nodes of these top PoW cryptocurrencies take huge amount of disk storage on your PC.

Nengcoin can be a solution to these issues explained above. With Nengcoin you are able to mine using your old Android phones, PC, USB ASICs, raspberry pi and ASICs. This would bring mining back to the home miners and also make use of





those old mining hardware. Average joes would be able to join in on the fun of crypto mining while learning about cryptocurrency and profiting from price appreciations. Syncing the Nengcoin full node does not take much disk space nor does it take very long to sync and not only that, but users are able to run a full node wallet on android and raspberry pi's as well.

What is Nengcoin?

Nengcoin is a decentralized PoW (Proof of Work) cryptocurrency that mines on SCRYPT algorithm. Originally called NewEnglandCoin (NENG), from 2018-2020, but name was later changed to Nengcoin (NENG) and launched in December of 2020. Nengcoin was created by Hong Lu who is bitcoin enthusiast and wanted to bring mining back to the homes of everyday joes and to level the playing field in the crypto mining space. Nengcoin can be mined with CPU, Raspberry Pi, USB ASIC and ASIC. The long-term goal of Nengcoin is be adopted massively worldwide as another form of payment for goods and services, as well as be another form of store of value or financial income for average people worldwide.





Technical Specs of Nengcoin:

- Symbol Ticker: **NENG**
- Maximum Supply Cap: **84,000,000,000 NENG**
- Algorithm: **SCRIPT**
- Block Time: **1 minute per block target**
- Block Halving: **2.1 Million Blocks or Approximately every 4 years**
- Reward per Block: **10,000 NENG**
- ICO: **NONE**
- RPCPort: **6376**
- Port: **6377**

Security design to prevent 51% attack

In the world of cryptocurrency there are many threats of attack to the security of alt coins. These threats are called 51% attacks and they can cause great amount of damage to the reputation and trust of all cryptocurrency projects. Nengcoin has provided a new kind of security mechanisms to counter and prevent these 51% attacks.





- **Script RandomSpike**

The bitcoin style difficulty adjustment is maintained in Nengcoin core algo. However, Nengcoin introduced new layer of difficulty concepts on top of typical bitcoin style difficulty adjustment method. Cheetah difficulty is designed to be mined by CPU miners on computers or mobile phones while spike difficulty is utilized in a new 51% attack prevention security mechanism. On v1.9.x version, cheetah difficulty is set at fixed difficulty of 0.0391 while spike difficulty is set at 244,000 level.

Cheetah effect is a Random Spike Technology™ that was first discovered and introduced during the development of NENG. The NENG blockchain auto resets to cheetah difficulty if blocks are not mined after 2 minutes. It was discovered that vast majority of cheetah difficulty were mined by CPU miners mostly, not accessible to ASIC or GPU miners, thus allowing CPU miners to mine NENG blocks after 2 minutes.





Spike difficulty are assigned randomly for the first 40 seconds with various random probability from 50% to 98%. Spike difficulty serves as penalty to those ASIC miners that mine faster than the average block time desired. The faster the mining speed the more penalty on random spikes.

In the newly published 2022 NENG dev roadmap, spike and cheetah difficulty will be upgraded from a fixed difficulty to dynamically adjusted difficulties in order to minimize the need of frequent hard forking.

CPU role in the Nengcoin ecosystem

The role that CPU miners play is that they are another defense mechanism against 51% attacks. Not only are CPUs a security mechanism, but they are also the base of NENG and without CPU miners mining, NENG would not survive. Since CPU miners on PCs/Mac/Android phones/Raspberry pi are the only ones who can use Cheetah CPU Miner, and mine on the Cheetah diff. When a 51% attacker uses huge hashrate from cloud source to attack NENG, spike block will be mined, and 51% security mechanism will be triggered so that only CPU miners can mine NENG





because of cheetah effect. In that sense, CPU miners act as “choking point” to prevent huge ASIC hashrate from taking control of NENG network. When a spike block is mined, all 51% attackers will be in despair and watch his/her own failure with CPU miners taking all the rewards afterwards. Mining through spike diff (spike difficulty = 244,000) is extremely costly and unrealistic for 51% attackers on NENG.

Decentralization

- **Full Node Decentralization**

NENG started out with 1 full node which was by Developer Hong back in 2018 and since then Nengcoin has hundreds of full nodes. The nodes as of today are still increasing as more and more individuals take interest in Nengcoin and crypto mining. Nodes consisting of CPU, USB ASICs, Android phones and Raspberry Pi solo miners are what help create a truly decentralized digital network.

Quote taken from Bitcoin Whitepaper:

“The system is secure as long as honest nodes collectively control more CPU power than any cooperating group of attacker nodes.”





Mining

- **Solo Mining**

Across almost all mining rigs (ASICs, USB ASICs, Android Phone, PC, Mac, Chromebook, Raspberry Pi), Nengcoin incentivizes solo mining and rewards solo miners by design. Miners of majority of the big PoW cryptocurrencies do not solo mine, but rather perform pool mining which is not truly decentralized as the big hash in the pool usually gets majority of the block rewards and pool operator controls the mining hashrate on the network. The bad thing with pool mining is that it is usually a public pool meaning anyone can join it and that leaves it open to DDOS (Distributed Denial-of-Service) attacks. Nengcoin on the other hand highly favors solo mining because it is a more secure and decentralized way of mining. What we mean by that is the user will not get any DDOS attacks like a public pool mining website would get and it helps keep the Nengcoin network truly decentralized without a central control at few pools.





Nengcoin is still supported at public script pools with many big ASIC rigs mining on pool. However due to the incentivization favoring solo mining, Nengcoin has significant number of nodes & miners (including ASIC miners) across various different mining rigs.

- **Android Mobile Mining**

Android phones are able mine NENG and it has the capability to Dual mine. Like CPU miners on computers, the Android mobile miners can also utilize cheetah cpu_miner which can mine the cheetah effect diff. The benefits of Android mobile mining are that it gives access to people who do not have a PC or ASICs to mine NENG. Another benefit is that it can give your old android phones a new purpose rather than it being left to waste. The cost of electricity to NENG android mining is very low and help ease worries on electricity bills with decent mining profitability.





Profitable

Home miners can profit more with NENG because it is decentralized, and it allows fair profit shares to be distributed to the miners. Also, with a wide range of mining hardware miners can take advantage of the cheetah effect with an exception for USB ASICs & ASICs which cannot utilize this feature.

Conclusion

Nengcoin is a truly decentralized crypto project and is growing daily in terms of number nodes and miners. Nengcoin strives to be a decentralized coin that focuses on mining security, solo & mobile mining and network decentralization.

The overall goal is to be a form of payment that countries worldwide will adopt to purchase real goods & services. As well as another form of store of value or income that individuals can profit from.





Reference

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