

STARK CHAIN

STARK Whitepaper is the official document of the STARK Project. This document presents technical review and characteristics of STARK Network, unique features and purposes of the STARK.

Whitepaper is going to be updated constantly due to Project Progresses and is a variable Document because we are going to develop continuously new technologies and software's to improve STARK Project and STARK Token.

Whitepaper and Roadmap is a dynamic list of the project and is going to be updated due to community and market requests.

STARK Development Team will always make the necessary effort to focus on the core components of the project, but will maintain a viable roadmap and show flexibility when required.

SUMMARY

Mining in the cryptocurrency industry has spread rapidly with Bitcoin Mining and started to get developed. While people started to mine privately in the crypto money industry, many facilities for coin mining were established almost all around the world. Under normal circumstances, Crypto mining requires expensive devices and special equipment and consenting high power costs but nowadays, crypto mining has become much easier thanks to the growing knowledge and new developments on new technologies. During the process, we saw that the Proof Of Stake consensus mechanism, which gives the opportunity to earn a reward after a certain period of time by renting a crypto currency, has achieved a success as well as the Proof Of Work consensus algorithm. But it still requires a lot of technical and software knowledge to become a coin's Masternode. Due to these difficulties, many people can't start crypto mining alone.

As a solution to this Problem, we improved STARK CHAIN and enabled as running the mining application (Proof of Active) on any average PC or Server that people use in daily life without any technical knowledge to become a Masternode and ability to provide their activity who wants to start mining in only five minutes. The second important development is the Memo Feature which is actually available in coins like EOS and Stellar with a very limited number of characters. With the STARK CHAIN Project, it is now possible to perform Transfers over ETH-Network with Memo Text (alphanumeric characters) in an encrypted form that can only be decoded by the recipient or encrypted and open for everyone with unlimited number of characters or numbers.

What is STARK?

STARK is an ERC-20 Token on Ethereum Network with its unique algorithm and technical features. It was designed as completely decentralized application (DApp) and based on four very important features. First, it is designed to be able to mine without any technical or software knowledge/skills by just providing Proof of Active with an average PC or server. Second Feature is the MEMO feature, which eliminates the difficulties of commercial integration of cryptocurrencies. Third unique Feature is Reverse Halving and finally Green Mining without any additional power costs.

1- Proof of Active

Proof of Active; in other words, the Proof-of-Activity algorithm represents the Situation of being turned on and active (connected to the internet) for mining devices to receive their rewards. Let's look at how these devices can provide proof that they are active in a decentralized way.

First of all, we need to look the details of the Block structure in the Ethereum network.

Considering block 10710527 in Ethereum, this block header contains the block height, timestamp and hash code. These values are updated for each block and form parts of the blockchain. According to the Proof Of Work algorithm, miners earn a certain percentage of Ethereum from the formation of these blocks. Depending on the density of the Ethereum network, these values vary so that a block is found every 5 to 15 seconds. Hash Value is a certain Element each block must have and it can not be combined with the next blocks, as it contains a summary of the transactions in former block. You can view these details by observing this block (10710527) on Etherscan.

The Proof of Active algorithm is based on the condition that the remaining value from the division of the hash values of the blocks formed in the Ethereum network by 5700 is 1. The mathematical equivalent of these hash values is a randomly generated numeric (uint256) value consisting of large values. It is very important for decentralization and fairness of reward distribution that the algorithm takes randomly and not interfered numbers from blockchain and combine them into the a mod operation. For example, regardless of how many digits the number you divide has, the probability that the remainder of the division of an even number by 2 is 1 is 50%. In the STARK CHAIN algorithm, if the remainder of division to 5700 of this random large number on the blockchain is 1, the block is awarded and this block is recorded on the Blockchain as a reward block.

```
uint256,uint256
uint256: 2844
uint256: 10710527
```

Above, it is seen that the hash value of the block 10710527 is 2844 after dividing it to mod 5700.

The hash value of this block can be seen below.

```
10028352204258662776256271559134437553641652324593866971455405815011047158514
```

```
uint256
```

2- MEMO Feature:

People handling with crypto currencies usually have one or more exchange accounts. For example, Exchange A has two members named Mary and Walter. Mary send 1.5 BTC to her BTC account on the exchange and 0.5 BTC to Walter. The exchange A cannot know whether this BTC Deposit came from Mary or Walter. Therefore, Exchange has to open a separate BTC account for each member, which requires an extra fee and a lot of effort. Or as another example, let's say you have registered on a new Exchange and you want to send ETH to your Exchange account, you need to create a deposit address. In that Case Exchange will create and provide an ETH address that only belongs to you. Likewise, if everyone who is a member of this exchange wants to deposit, they should create a separate address for everyone. When you send your crypto asset to this deposit address, coins that comes to your exchange wallet is going to be withdrawn from your wallet to exchange's pool account and exchange pay a fee for this second action. If the deposit coin is an Ethereum-based ERC-20 then they pay two-time fee, which requires a lot of work again. For two people, this may seem easy, but imagine that there are 10,000 or 50,000 transactions in some Exchanges daily , it means for both side lots of unnecessary fees and a lot of unnecessary effort for Exchange. STARK eliminates all these problems with its Memo feature. Exchanges should have only one pool account. Exchange provides a fixed ID code to all registered customers. When the customers want to deposit into their Exchange Wallet, the send crypto assets to the pool account of exchange and sends it by typing the ID code in the Memo part, thanks to the STARK CHAIN unique Memo Feature. Due to this ID code, Exchange system automatically detects where crypto assets are coming from and immediately reflects it to the sender's account. In that way Exchange may save many fees and unnecessary efforts. Crypto Exchange is just one example for this topic. Many systems that handle with cryptocurrencies are experiencing such problems. With the STARK CHAIN project, all this kind of problems will be eliminated or minimised.

3- Reverse Halving and Reward Distribution

When the reward block is found in accordance with the STARK CHAIN algorithm (when the mode is equal to 5700 is 1), active miners are required to sign the contract. Miners must be constantly connected to the Blockchain network through a mining program. As proof of this, they must perform the signing process. Signing is limited to 100 blocks.

Miners who do not sign within 100 blocks are denied their transactions because they do not fulfill properties of Proof of Active consensus. STARK CHAIN award distribution algorithm is designed to be the first in the world. In other Coins or Tokens, Halving can happen at various times. The amount of reward distribution went everytime from high to low. However, STARK CHAIN has developed a proprietary reward distribution algorithm to maintain the balance of supply and demand to keep mining from beginning profitable. We call this concept Reverse Halving.

This algorithm works not according to certain time, but with periods consisting of 365 blocks. For example, the amount of reward per block to be distributed in period of 0-365 blocks will be 128 STARK. Details are written on the table below.

PERIOD	BLOCK NUMBERS	REWARDS EACH BLOCK	REWARDS EACH PERIOD
1.Period	0-365 Block	128 STARK	46.720 STARK
2.Period	365-730 Block	256 STARK	93.440 STARK
3.Period	730-1095 Block	512 STARK	186.880 STARK
4.Period	1095-1460 Block	1024 STARK	373.760 STARK
5.Period	1460-1825 Block	2048 STARK	747.520 STARK
6.Period	1825-2190 Block	4096 STARK	1.495.040 STARK
7.Period	2190-2555 Block	8192 STARK	2.990.080 STARK
8.Period	2555-2920 Block	4096 STARK	1.495.040 STARK
9.Period	2920-3285 Block	2048 STARK	747.520 STARK
10.Period	3285-3650 Block	1024 STARK	373.760 STARK
11.Period	3650-4015 Block	512 STARK	186.880 STARK
12.Period	4015-4380 Block	256 STARK	93.440 STARK
13.Period	4380-4745 Block	128 STARK	46.720 STARK
14.Period	4745-5110 Block	64 STARK	23.360 STARK
15.Period	5110-5475 Block	32 STARK	11.680 STARK
16.Period	5475-5840 Block	16 STARK	5.840 STARK
17.Period	5840-6205 Block	8 STARK	2.920 STARK
18.Period	6205-6570 Block	4 STARK	1.460 STARK
19.Period	6570-6935 Block	2 STARK	730 STARK
20.Period	Over 6935 Block	1 STARK	365 STARK

The reward distribution is made on the basis of the number of signing miners and the amount they stake. Thus, a fair distribution system has been realized. Thanks to this unique distribution algorithm of STARK CHAIN, problems between miners and market actors are prevented. Token inflation in other coins has been made almost impossible to happen in STARK CHAIN. It is aimed both to maintain market balance, to obstruct token inflation and to keep the rate of earnings of miners at a certain level.

STARK CHAIN is a first in the world with these features. Considering that even major coins having problems on these topics, the advantages of Stark Chain are clearly visible.

4- Green Mining

With our Green Mining concept, which is friendly to nature, people and energy resources and allows Users to mine with minimum cost. Users can easily do mining activities without purchasing expensive equipment and paying high electricity bills.

A minimum of 10 STARK must be staked to the Stark Chain smart contract in order to be able to mine. In this way, the miner is entitled to receive rewards for 90 days. In order to continue mining at the end of 90 days, Staked Coins must be withdrawn from contract and re-staked.

What is the Problem?

The biggest problem in the cryptocurrency industry is that it is very difficult to integrate cryptocurrencies into e-commerce systems coz it requires too much fees and too much manpower. For example, imagine a large e-commerce company decide to accept payments in Bitcoin. In that case they have to create for every customer a new Bitcoin Wallet who wants to pay with that. When the customer makes a purchase and pays from his Bitcoin Wallet, the e-commerce company has to withdraw the BTC from each customer's wallet to his pool account and pay another fee for that. Considering that tens of thousands of transactions are carried out daily, this kind of operations require extra qualified personal and extra efforts. Because of this and similar problems, E-Commerce Companies do not tend to working with cryptocurrencies. This is a problem not only for large companies but also for middle or small commerce systems.

SOLUTION

STARK CHAIN was born as a solution to all this problems. Thanks to the Memo feature of STARK CHAIN, all commercial enterprises and all commercial companies can accept cryptocurrency as a payment system and integrate crypto into their systems. For example, let's assume that Amazon wants to accept payments with cryptocurrencies. They can easily receive payments with STARK CHAIN without need to open individual accounts for each customer like the above-mentioned BTC and avoid constantly paying unnecessary fees and extra unnecessary manpower. Only one pool

account of E-Commerce company and an ID code defined for each customer will be enough. When the customer wants pay with crypto money, the money comes into the pool and the customer can type his ID code into the STARK CHAIN Memo feature when transferring cryptocurrency, and with this Customer ID code, the system can define from which customer this money is coming from and automatically confirms the payment of the product that the customer trying to buy. Thus, the company gets rid of both unnecessary fees and unnecessary manpower, and transactions are performed much faster. All commercial companies who are interested can easily integrate STARK CHAIN into their payment system and accept payments with crypto currency.

For example, Memo Feature used for Amazon Order ID 344-567 from Amazon Account admin@starkchain.org ;

#	Name	Type	Data
0	_amount	uint256	1000000000000000000
1	_to	address	1fd2360928591edfb9c5f9103146927560a0c027
2	_memo	string	Amazon Order ID 344-567 / Username admin@starkchain.org

Decoded input inspired by Canoe Solidity

You can check the Transaction over Etherschain with following Link yourself :

<https://etherscan.io/tx/0xd43b360880b11c96262960323b637eff11b22b3a913794986b384e06d388113a>

STARK CHAIN ECOSYSTEM

Personal Mining is the action that users stake STARK Token into Contract and be a miner over their personal PC or virtual Server PC. With a sufficient amount of staked STARK Token and a computer connected to the Internet, anyone can do Personal Mining.

Pool Mining is the Method, which is preferred by users who cannot keep their computer turned on continuously or having internet connection problems, continues to mine by cooperating with other users when they stake enough STARK Tokens. Users who can not afford the minimum Stake Amount can use this Method too.

starkchain.org: It is an important platform designed to produce private commercial blockchain solutions.

STARK Foundation: STARK FOUNDATION is a non-governmental organization that will be established for the STARK project to operate more effectively social responsibility and software development areas.

STARK CHAIN Academy: It is an educational platform that aims to produce quality content by operating in digital media, especially Youtube and with university clubs, which was established to inform everyone who is interested in the crypto industry and to increase their experience, whether they own a STARK token or not.

Token Specifications

Name: STARK CHAIN

Symbol: STARK

Based on: ERC-20

Total Supply: 8.959.005 STARK TOKEN

Decimals: 18

Contract Address:0x1edc9ba729ef6fb017ef9c687b1a37d48b6a166c

Social Media Accounts

Web : <https://www.starkchain.org>

Telegram : https://t.me/starkchain_information

Facebook : <https://www.facebook.com/starkchainofficial>

Twitter : https://twitter.com/Stark_Chain

LinkedIn : <https://www.linkedin.com/company/starkchain/?viewAsMember=true>

Instagram : <https://www.instagram.com/starkchainofficial>

Youtube : https://www.youtube.com/channel/UCuzi6Pj537_NbDTJcWLe-6g?view_as=subscriber

Medium : <https://medium.com/@starkchainofficial>

Github : <https://github.com/starkchain>