

CMD SUPER NETWORK

(CPU RAM HDD)

Economic White Paper

preface

Storage is the fulcrum of Web 3.0, the Metacom, and the digital world, and what CMD(COMMAND)has to do is execute and connect networks to maximize the power of the fulcrum.

While the future is endless, we can be sure that the world economy underpinned by Web 3.0 is a data economy, and that all data-based applications are dependent on storage, which will be the foundation of the economic world of the future.

Storage is a common IT module that needs storage, whether it is Web 2.0 or Web 3.0. Distributed storage, distributed computing technology, represented by CMD, bridges the gap between Web 2.0 and Web 3.0.

Finally, distributed storage makes the information in the network scattered among the nodes, through the storage and call of data, really rely on the node rather than monopoly enterprise network architecture can be realized, which is also a real utopia.

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1. overview

Previously, CMD was a distributed computing, storage-based encrypted communication DAPP, after four years, CMD is more than just a DAPP, dozens of blockchain-obsessed utopian hackers have been carrying out CMD network iteration and testing, tens of thousands of nodes around the world are also involved in this great experiment.

CMD SUPER NETWORK (CMDS) is now officially available.

Founded by the COMMANDNETWORK FOUNDATION and early funding for the development of the CMD led by dozens of leading hackers, the foundation will gradually transfer control to core nodes and communities to form decentralized autonomy, depending on the state of the network when CMDS is operational.

CMDS, as a decentralized distributed network, will be open to free participation for all. In this network, both service providers, demanders, and all stakeholders in maintaining the network are free to enter and exit within the scope of the system protocol. The economic model of CMDS sustains the interests of all participants and guarantees the development of the entire CMDS network.

2. Economic design objectives

The goal of the CMDS economy is to align the interests of all participants with the value growth of the CMDS network, to protect the interests of all participants, and to maintain the stability of the CMDS network on the other that is each participant in the pursuit of interests at the same time in the contribution of their own capabilities, to promote the rapid development of CMDS network.

In order to achieve our economic design goals, we have to think about several aspects:

How to secure the CMDS protocol

How to maintain the sustainability of CMDS systems

How to protect the interests of the participants

How to maintain the interests of the participants in the same direction as the value of the CMDS system

We will continue to address and refine these issues, and that is our ultimate goal, so this economic white paper is only available in V1.01, and we will publish and update core economic data on GitHub, which everyone can view in real time.

3. Participants

3.1 Authenticator

Validator is a node in a CMDS network that packages and generates chunks and maintains the entire blockchain network, with only 51. At the same time, according to the DPOs consensus of the CDMS network, the authenticator node needs storage resources and effort as collateral to be able to Staking the appropriate amount of CMD tokens (native tokens in the CMD S network) and need to

remain online. Therefore, the authenticator node can also be a merchant, providing users with storage resources and services. The authenticator nodes involved in the network can receive partial rewards for the block and are at risk of being fined assets. At the same time, the certifier can also be a merchant through the storage market to sell storage resource services to gain.

3.2 Candidate validator

Validator benefits are permanent and freely transferable on the basis of no breach of agreement, and if they are already in a penalty period and do not have enough CMD to pay the fine, the node will be demoted, the network will re-enter the campaign period, and 51 additional verification node networks will be added if the external node meets the validator criteria.

3.3 Storage Resources Provider

Storer provides disk space for compensation, and a portion of the block award is assigned as an incentive for each storage resource vendor based on the size of the space, and a corresponding CMD is required as a guarantee, which is withdrawable. The number of coins produced per day for blocks is fixed and limited, so the earlier you connect to the device, the more revenue you will get.

3.4 Watcher

The Observer needs to observe and detect the state of each node running throughout the CMDS network, detect whether the node is running to meet security policies, and fix security flaws. So, observers need to be stable online, but also a necessary role for network-wide patrols, and at the same time is the data indexing service is the right person. We want the observer to be a stand-alone node, so that there is a checks and balances between the out-of-block node and the data storage node. Decentralized rights and network organizations further ensure the security of data objects while reducing the likeness of networks being maliciously attacked. Early observers were appointed by the foundation and, after sufficient experience at other nodes, ran for office.

3.5 Community users

As the most important ecological component of CMDS, the community will be responsible for the promotion of CMDS, technical cooperation, institutional cooperation, community formation, community maintenance and other important PR work for CMDS Foundation will pull out a special fund to reward the community and users who have made outstanding contributions, this part of the benefits are valuable in early development.

4. Tokens

Native token CMDs in a CMDS network are functional tokens that realize the value of the entire network. Similar to ETH in an Ethereum network or a FIL in a file currency.

4.1 Function of Tokens

In a CMDS network, CMD tokens have several main functions:

1. Staking maintains the DPOs consensus in the CMDS network
2. Used to guarantee the selected node
3. As a guarantee and commission for the provision of resource services
4. As a transaction fee for the use of the network
5. Can be used to purchase resource services
6. It can be used for the election and voting of the chain governance mechanism and for the voting of proposals

As a network of underlying data storage protocols, CMDS provides the functionality of the storage resources market where CMD tokens serve as a safeguard to protect the order of the storage market.

4.2 The generation of tokens

CMD tokens are generated in two ways: one at a time when the primary network starts, and the other with the generation of chunks.

Total CMDS: 4,200,000,000 CMDs

Technical team reward 10%.

10% of investment institutions

The Foundation operates 5%.

Node Contribution Reward 75%.

The node contribution award is a monthly gradual reduction in production, with the aim of fighting inflation, i.e., a 4% reduction in the monthly fixed block award.

4.3 Destruction of tokens

If the quality of service is not stable or if they are found to have committed malicious acts, they may face the penalty of CMD tokens, which will be destroyed directly.

4.4 Value of tokens

CMD is a functional pass for a CMDS network whose value depends on the CMDS network. Its value is proportional to the size of the CMDS network, and when the CMDS network is used by a large number of users, the demand for CMD increases accordingly. CMD tokens capture network value in two main ways, one is when used in the network locked or occupied to reduce the total amount of circulation. Examples include security payments for storage and retrieval services, payments for storage services, voting on chain governance, Staking in consensus mechanisms, and so on.

5.Consensus mechanism

5.1 Variable DPOS

The variable DPOS is designed to optimize the workload under POW to match the actual market demand for workload. the total amount of Staking market will always remain at 75% of the total market circulation, and when the TOKEN price rises, the number of Stackings required by storage service providers will increase, and when the TOKEN price falls, the number of Stackings required by storage service providers will decrease to promote the balance of supply and demand.

5.2 Punishment mechanism

CMDS's Staking module has a penalty mechanism for authenticators, detects the validator at the end of each block cycle, triggers a penalty mechanism when a validator is detected to be dropped or maliciously attacks the network, and calculates the amount of penalty. The penalty includes a prorated deduction of validly pledged CMD tokens, the removal of the authenticator's identity, and the time limit for the CMD token to be replenished.

6. Smart contracts

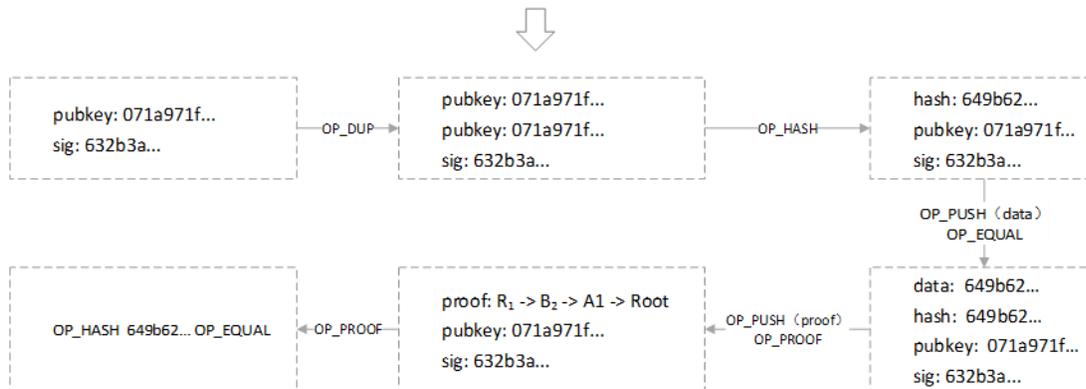
Smart contracts have proven to be credible and efficient through Ethereum's practice. Smart contracts in CDMS are implemented in two phases, the first of which will implement a non-Turing-complete smart contract, which is primarily used to guarantee the use of token CMDs for Staking, reward and penalty, and to support the upper trading model. The second phase implements advanced features such as contract virtual machines, Turing completeness, predictor (oracle), hash lock, and so on.

The first phase of the smart contract uses the classic FILO (Advanced Back Out) stack structure. The following are basic FILO-based atomic operational definitions: OP_INIT (constructing an empty stack), OP_EMPTY (stack empty), OP_FULL (stack full), OP_PUSH (pressing stack), OP_POP (pop-up), OP_PROOF (contribution certificate), OP_CHECKSIGN (proof of contribution), OP_EQUAL (judge equal) the scene becomes more numerous, the atomic operator continues to increase to support more complex operations. A snippet of code that sends an award contract is as follows:

```

1.0.1; // contract version
632b3a... // sign
071a971f... //public key
OP_DUP OP_HASH 649b62... OP_EQUAL OP_PROOF //reward contract script
...

```



Non-Turing complete smart contracts

The execution process, as shown above, it will eventually reward the storage node that ultimately provides proof of proof. However, the reward needs to provide a public key that is eligible for the transaction (the public key needs to be calculated by the OP_HASH operator to calculate the result is 649b62... d on The UTXO model (simply address-based) requires the summation of transactions and addresses by the upper-level CMDS account.

Smart contracts are an important part of the CMDS free market, and not only are online trading order objects like Store-Book protected by smart contracts for changes in order status and fee payments. Future network-wide data Book objects will operate and constrain based on smart contracts. Smart contracts are also based on the account model and implement Turing completeness.

7. Cross-chain ecology

A multi-chain ecology consists of a male chain with CMDS cross-chain bridges deployed. Trade Swap: Each TX-Bundle within the chain bridge contains the type of transaction defined in the current cross-chain pool. The final package is packaged into CMDS chunks and broadcast to CMDS.

Value Exchange: Each cross-chain bridge can define internally circulated tokens, and CMD can be relied upon to complete the transaction of different tokens in the cross-chain bridge to form a value exchange.

Lightning networks and smart contracts based on homomorphic channels should be a good choice across chains.

8. Token trading

In order to serve all participants in the CMDS network, a decentralized token trading market (WCMD) will be provided in the CMDs network. In this token trading market, multiple types of tokens can be exchanged with CMDs.

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