

Mainstream Code White Paper

2018/09 V1.1.2



Innovative Diversified Digital Asset Trading Platform
Pioneer of the Next Generation of Digital Asset Trading

Catalogue

1. Background.....	4
2. The First MCC Autonomous Digital Asset Trading Platform in the World....	4
MCC Treading Platform.....	4
3. Advantages of the Trading Platform.....	5
4. Digital Asset Screening Standard.....	7
5. MCC(MainstreamCode currency Token).....	7
what is MCC?	7
Detailed Rules of Mining.....	8
Usage Scenarios of MCC.....	8
Rights of MCC.....	9
6. Provisional Constitution of MCC.....	9
7. Roadmap for Trading Platform.....	错误! 未定义书签。
8. Core Concept and Components of the Main Chain of MCC...	错误! 未定义书签。
Core Components of the Main Chain of MCC.....	错误! 未定义书签。
Edition.....	23

1. Background

Digital assets based on blockchain technology have flourished since the birth of bitcoin. Nowadays, the variety and influence of digital assets are growing day by day. Fair price formation of digital assets, exchange transactions between different digital assets, related customer services and regulatory compliance, and even derivative transactions are fundamental needs. At the moment, the demand is being met by a variety of digital asset trading platforms. These platforms have played a huge role in the short history of digital assets, as well as serious accidents. Rather than blaming these problems on trading platforms themselves, traditional trading platforms have been unable to adapt to the new era of digital assets.

The birth of digital assets based on blockchain technology has made it possible for assets and transactions to be fully transparent and self-certified. This will drive future changes in corporates and regulatory governance structures. We think the direction of this change is that companies evolve toward communities, regulation toward technology. The digital asset trading platform itself has the ability and responsibility to lead this change. Therefore, we launched the MCC.

2. The First MCC Autonomous Digital Asset Trading Platform in the World

MCC Trading Platform

MCC is committed to creating an autonomous, efficient and transparent digital asset trading platform that allows traders and investors to conduct transactions of any size without worrying about the impartiality and transparency of the platform, the reliability of data security privacy protection, or the integrity and robustness of its order management system.

At the same time, MCC is not a traditional company. It has taken a key

step in the evolution of digital asset trading platform to the cell. The MCC cell is a publicly transparent, Token organization, and the MainstreamCode currency Token represents all of the rights of the MCC trading platform. MCC uses a "transaction mining" model, with more than half of MCC being rewarded to cell users through fee mining. More specifically, the MCC cells would allocate 50% of their proceeds to MCC holders. We're going to distribute it in proportion to the composition of the proceeds.

3. Advantages of the Trading Platform

MCC's mission is to create a fair and equitable environment for investors to invest, trade and manage digital assets. Therefore, the goal of platform design is to guarantee the fairness and transparency of orders, and to meet the regulatory compliance requirements of security, auditing, reporting, analysis in the safest and most effective way.

Open and Transparent

MCC will be the world's first real-time truly open and transparent exchange cell. The main reason traditional exchanges fail to be transparent about their assets is that they are constrained by technology. And the advent of blockchain technology makes this goal technically feasible. MCC's mission is to translate that feasibility into real practice. MCC will establish a real-time asset and transaction data query and verification mechanism which will be open to the public.

Cell-based Autonomous Organization

Unlike traditional centralized corporate structures, MCC has no CEO or board. Relying on the blockchain technology and the Token economy concept, MCC will be the world's first autonomous cell-based trading platform. The MCC awards 60 percent of the MCC to the cell through the "transaction mining" model. At the same time, MCC allocates 50% of its proceeds to MCC

holders, and all MCC holders vote to implement cell governance through smart contracts.

Financial Level Trading System

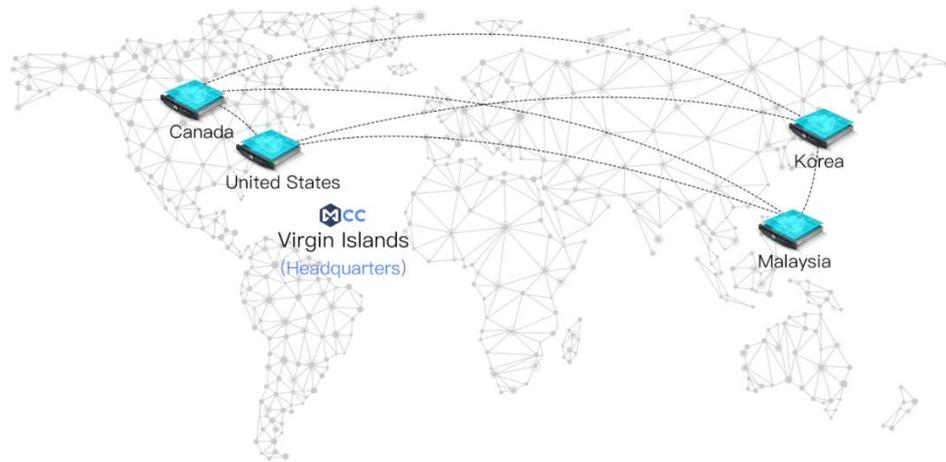
MCC's trading system can achieve rapid and stable financial level trading, and ensure efficient and guaranteed trading. MCC provides advanced algorithms at the securities level, supports GTT, GTC, FOK, IOC and other professional trading orders, and provides professional quantitative support for traders. It draws on LMAXExchange's experience and can handle 2 million transactions per second.

Safety Protection

For digital asset transactions, safety is the top priority. MCC uses security design based on multiple signatures, offline signatures, and hierarchical architecture and so on, to stores 95% of the digital assets in cold wallets. Unbiased zero knowledge order encryption is accomplished through the key provided by PKI-on-blockchain service of CertEurope6. We will conduct regular external audits.

The Four Nodes in the world

Supporting the Data of ExchangeS



4. Digital Asset Screening Standard

The practical significance of blockchain is to integrate technological innovation and financial innovation, make use of a whole new incentive system based on mathematical algorithm, and further liberate productivity by reconstructing the cooperative relationship. In this context, a lot of real innovation will come to the fore, and there will inevitably be a lot of money encirclement and fraud.

We will combine the characteristics of digital assets with the experience of the world's top trading platforms and relevant regulators to form a set of standards and mechanisms for digital assets screening. Through the continuous improvement of these standards and mechanisms, MCC will jointly explore the value of digital assets with market investors. Our core philosophy is not to replace the market to make value judgment, but to

emphasize the project transparency and governance structure requirements, so as to ensure the power and interests of the cells.

5. MCC (MainstreamCode currency Token)

What is MCC?

MCC is the abbreviation of MainstreamCode currency Token. It was the ethereum ERC20 standard Token at the earlier stage (the team has matured the main chain and launched the MCC main chain independently developed, which can be converted into mainstream currency at a one-to-one rate 1:1 at present). MCC is generated through "transaction mining", with a total volume of 5 billion, which will never be increased. 60% of the volume is dug out by miners, the remaining 40% is pre-issued and frozen, and the frozen part is thawed daily as the miners dig.

Exchange Rights + Public Chains, the handling fee on that day will be passed as dividend after mining is activated. The miners of the public chain annihilate 10% every time they mine. The total net annihilation is 99.49%, finally remaining 21 million.

MCC will distribute most of its proceeds to MCC holders in a timely manner. At the same time, MCC holders share the governance rights of the cell.

Detailed Rules of Mining

Trading in MainstreamCode currency is regarded as mining, and trading users are treated as "miners". The output of mining is the Platform Currency MCC. MCC introduced intelligent adjustment mechanism, which means the output of mining can be adjusted intelligently according to the trading volume of the exchange.

While you trading at MainstreamCode currency, the transaction fee will be converted to MCC, which will be issued every six hours and returned to

your account.

Usage Scenarios of MCC

1. Trade Dividend

Having a MCC is like having a dividend certificate on the MCC Exchange, which allows you to enjoy the daily dividend of the exchange's earnings.

2. Side Chain Release

The MCC can be used to pay miners to open their own digital assets, just like issuing digital assets in Ethereum.

3. Vote for Listing

When the issued digital asset is listed on the MCC Global Exchange, MCC can be used to offset the fees required for listing, or to vote for the digital asset to be listed.

4. Cost Deduction

MCC can be used to offset storage costs for miners when information needs to be stored on the main chain and declared to the entire network.

5. Voting Rights of Super Nodes

Voting on the mining right of super node on the public chain with MCC.

MCC Rights

As the proof of the negotiable encrypted digital rights and interests, Token will become the basic element of the digital economy era in the future. MCC, as the representative of the interest of MainstreamCode currency cell, is the cornerstone of MainstreamCode currency community governance.

Rights	Instruction
Proceeds Distribution	In the first month, 50% of the proceeds of MCC Trading Platform will be distributed to MCC holders, the other 50% will be used to refinance MCC in the market. After the first month, 50% of the proceeds of MCC Trading Platform will be distributed to MCC holders, 35% will be used to refinance MCC in the market, and 15% will be used for development and operation management.
Decision Making Participation	By initiating smart contract voting, MCC Cell allows MCC holders to participate in major

	business decisions.
Election and Supervision	MCC committee members change regularly. MCC holders can participate in the election of Committee members, and monitor the transparency of the platform and whether the members of the Committee are dutiful.

6. Provisional Constitution of MCC

What is Provisional Constitution?

This constitution is signed basing on the application of multiple advantages of blockchain. It is provisional, and shall be valid until the official form is made and ratified through referendum.

What is Referendum?

Referendum is a national vote. When there is a major issue requiring to be solved or a disagreement cannot be solved, MCC adopts a referendum to resolve.

What is the Condition for Initiating Constitution Amendment?

Initiating Condition for Referendum: Ten million MCCs have the right to initiate. The MCCs shall be mortgaged to launch the voting. During the voting period, MCC is frozen, and the users will not enjoy the proceeds during the freeze period until the voting is ended.

Chapter 1. Constitution Amendment

This constitution and its subsidiary documents shall not be modified unless a referendum is initiated and more than 51% of token holders vote in favour;

Chapter 2. Public Chain of MCC

Exchange Rights + Public Chains, the handling fee on that day will be passed as dividend after mining is activated. The miners of the public chain annihilate 10% every time they mine. The total net annihilation is 99.49%, finally remaining 21 million.

Miners Cost	
Transfer Accounts	1 MCC (0.9 MCC charged by miners, 0.1 MCC annihilated)
Side Chain Issuing	100 MCC (initiate referendum to decide whether to add dynamic billing, 900 MCC charged by miners, 100 MCC annihilated)
SDK to API Transferring (supporting Java Go language)	The charging standard will be launched in the later stage.
Smart Contract	The charging standard will be launched in the later stage.
IPFS	The charging standard will be launched in the later stage.

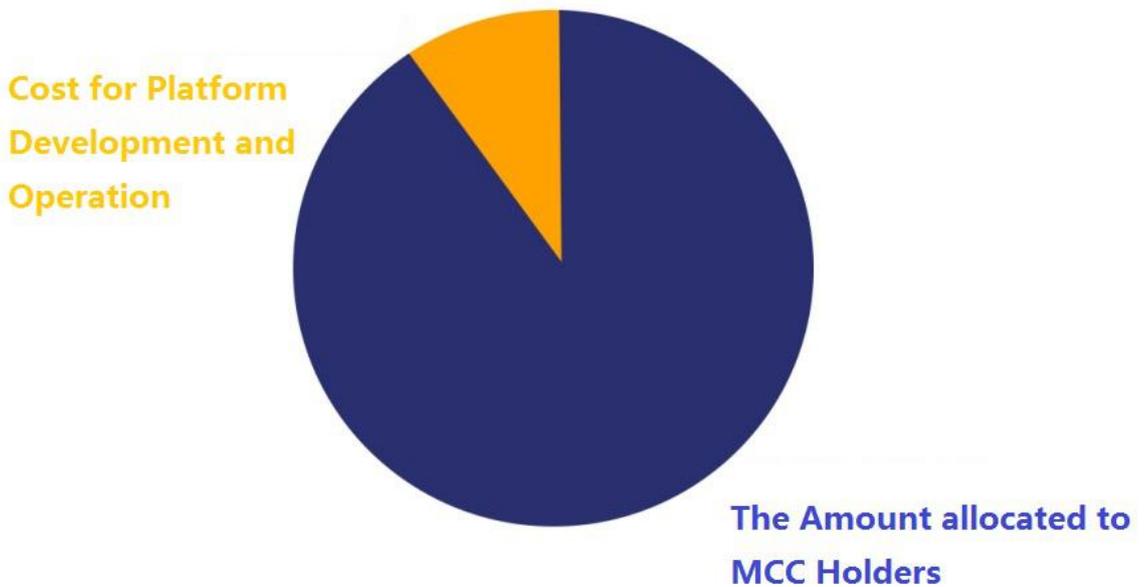
Chapter 3. MCC Exchange

MCC is a de-centralized exchange with a main chain, and the issue of Mainstream Code currency Token will be upgraded to a main chain recognized by global chain exchange (currently the main chain has been developed independently and can be converted to main chain currencies at a one-to-one rate). In addition, every MCC holder has the right to participate in business activities of the cell such as business decision making and team elections. MCC is a communal organization owned, co-governed and shared by all holders.

Exchange Constitution (DPOS Mechanism)	
Service Charge	Charges for different transactions vary.
Listing (digital assets)	Mortgaging 1 million MCC for one month (or 3 months, depending on the referendum)
Bonus Mechanism	

15%			85%
5% MCC Funds	5% (referendum) Customer Service from the Four Nodes in the World	5% (referendum) Bonus for Development Team	MCC Holders

In the first month that MainstreamCode currency opens its trade, 50% of the platform's total revenue will be rewarded to MCC holders and the other 50% will be used to repurchase the MCCs circulating in the market. In the later stage, 50% of the total revenue from the platform will be rewarded to MCC holders as bonus, 35% will be used to repurchase the MCCs circulating in the market, and 5% will be used as the operation cost of the four nodes (USA, Korea, Malaysia and Canada), 5% will be used for platform development (allocate according to the code contribution), the remaining 5% will be used as MCC Funds. During the 24 hours of the day, a snapshot of the account holding the MCC will be taken every 6 hours, the amount of dividends due to each account will be counted, and the bonus will be awarded to the account of the MCC holder every 6 hours.



Bonus Rules:

1. The bonus mechanism is the right of MCC holders. Only MCC holders can get the bonus.
 2. Every six hours is a bonus cycle, and the platform pays bonus on a regular basis
 3. Take a snapshot every 6 hours, calculate the grantable bonus and grant the bonus every 6 hours.
 4. The bonus currency shall depend on the actual fee the platform received.
- * Only the circulating MCC will participate in the bonus share instead of the locked part.

Calculation formula:

Bonus of every 1 million MCC = (platform' s total proceeds of the day * 50% / total circulation volume of MCC) * 1,000,000

Miners' bonus proceeds of the day = MCC holdings / total circulation volume of MCC * platform' s total proceeds of the day * 50%

Rules for Repurchasing MCC:

In the first month, the platform will repurchase the MCC circulating in the market with 50% of the total revenue (changed to 35% after one month). The repurchase address will be published on the website of the exchange. The repurchased MCC belongs to all MCC holders. Users need to vote in MCC cell and get more than half of their votes if they want to use the repurchased MCC.

Chapter 4. MCC Issuing Mechanism

We use the “trading while mining” mechanism to complete the MCC issuing.

Cell bonus part: 60% of the MCC will be allocated to transaction users everyday through “trading while mining” (while stock lasts).

Pre-issued part: 40% of the MCC is held by the fund and the team through the pre-issuing method (unfreeze while mining).

Unfreezing rules for pre-issued parts:

In order to guarantee equal earnings for all, we will freeze the “pre-issued part” completely and unfreeze it by daily ratio according to the following formula:

Daily unfreezing amount = pre-issued total MCC amount * (total output of the previous day / total mining amount)

Chapter 5. MCC Alliance Exchange

There are 100 openings at the first phase of the MCC’ s Win-win Plan. The open exchanges will support a variety of rate models, and the first 100 will operate in platform currencies, detailed rules are as follows: The MCC’ s Win-win Plan will support each exchange operator to issue platform currency, with 60% of the platform currency of each exchange is “mining part”, and 40% is “issued part”. Mining part: the mining part of each exchange will be rewarded to transaction users daily through “trading while mining” model. The trading platform will accumulate the transaction fees generated by users in the exchange every six hours, 100% converted into platform currencies, and the converted price is calculated according to the average price of platform currencies on that hour (the average price = total transaction amount/ total volume). We will return the accumulated platform currency at six hours intervals. Fee part of the trading platform: 50% of the proceeds will be allocated to the holders of the Exchange Platform Currency as an incentive (only the mining output and the unfrozen “issued part” will participate in the allocation). Issued part: the issued part of the exchange is frozen in advance and unfrozen synchronously

according to the proportion of the excavated part of mining.

Application Conditions (subject to the following conditions):

1. Users need to mortgage 10 million MCCs for 10 years, and pay 1 million MCCs to open exchanges and implement miner declare for four major nodes.

- 2. Open the exchange.
- 3. Legal procedure of the country in which it is located.
- 4. The same as the MCC exchange mechanism.
- 5. Agree with the regulation of exchange.

Proceeds of the exchange:

- 1. Fee of the exchange.
- 2. Issuing of the platform asset.
- 3. Asset listing right.
- 4. MCC node support, technology community support, fund priority investment support

7. Roadmap for Trading Platform



8. Core Concept and Components of the Main Chain of MCC

MCC pioneered the idea of global chain exchange, and will open 100 chain exchanges in the world. The main chain of MCC will be used to solve a

series of needs of users from issuing digital assets from the main chain to the listing and financing circulation. The main chain of issued this time is the main chain recognized by the global chain exchange.

Core Components of the Main Chain of MCC

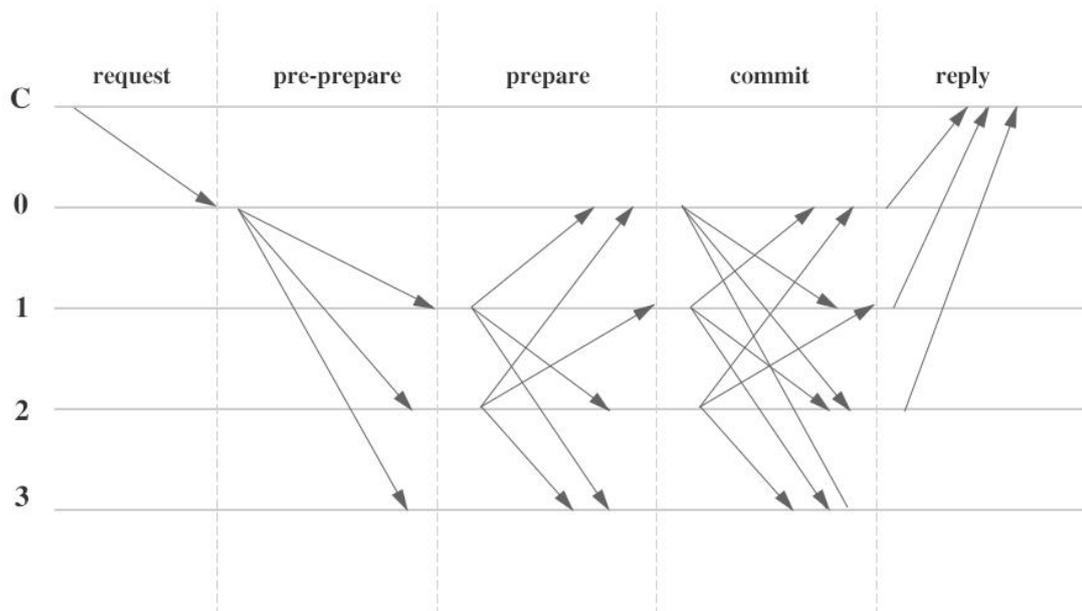
1. Consensus algorithm (PBFT)

MCC chain adopts the most optimal de-centralized consensus algorithm

for the moment, Practical Byzantine Fault Tolerance (PBFT). This is a message-based consistency algorithm that achieves consistency through three phases which can be repeated due to failure.

Assuming that the total number of nodes is $3f+1$, f is the wrong node of Byzantine:

- 1) When the node discovers that the leader does wrong, the other replica can be elected as leader through algorithm.
- 2) Leader broadcasts its selected value to other replica nodes via a pre-prepare message, and other replica nodes send prepare if they receive it, and not if they fail to receive.
- 3) Once $2f$ nodes receive the prepare message, nodes shall send commit message.
- 4) When $2f+1$ nodes receive the commit message, it means the value is committed. The following graph shows four nodes, 0 is the leader, and node 3 is the fault node, which does not respond to and emit any messages. When the final node state reaches committed, the consensus is reached.



Advantages: The above consensus algorithm cannot be separated from the existence of currency; the normal operation of the system must have a currency reward mechanism. System security is actually maintained and guaranteed by the system currency holders. When our block chain system is actually used in commercial applications, the value of the assets carried by it may far exceed the value of the currency issued by the system. It would be unreliable to guarantee the security and stability of the system by the holder of the currency.

- a) The operation of the system can be separated from the existence of currency. Each node of the pbft consensus algorithm is composed of the participants or supervisors of the business. The security and stability are guaranteed by the business related parties.
- b) The consensus delay is about 0.1~0.2 seconds, which meets the requirements of commercial real-time processing.
- c) The high consensus efficiency can meet the demand of high-frequency trading volume.

According to this algorithm, the holders of token on the block chain constructed with MCC chain can select the block producer

through a continuous voting system. Anyone can choose to participate in block production, and if they can persuade the token holders to vote for them, they will have the opportunity to participate in block production.

The MCC chain allows each block to be generated every 0.1 second. Only one producer is authorized to generate the block at any moment. If a block is not successfully produced at some point in the plan, the block will be skipped. If one or more blocks are skipped, there will be 0.1-second or longer blanks on the blockchain.

While using MCC chain, the generation of blocks takes 30 blocks as a cycle (6 blocks for each producer * 5 producers). At the beginning of each block cycle, 5 producers will be selected according to the votes of the token holders. The order of the selected block producers will be arranged according to the consent of the five block producers.

If the producer missed a block and didn't produce any blocks within the last 24 hours, the producer will be excluded from consideration until they inform that the block chain can reproduce blocks. This ensures that the network runs smoothly, eliminating block producers who have proven unreliable from the block producing scheduling, thereby minimizing the number of missing blocks.

Error Report

Under normal circumstances, the PBFT block chain does not undergo any bifurcation because the block producers are not in a competitive relationship and they cooperate to produce the blocks. If there is a block bifurcation, consensus will automatically

switch to the longest chain. This approach is effective because the speed of increasing blocks on blockchain bifurcation is directly related to the proportion of blockchain producers with the same consensus. In other words, the blockchain with more producers will grow faster than the blockchain with fewer producers because fewer blocks will be lost on the blockchain with more producers.

In addition, no block producers can produce blocks on both blockchain bifurcations at the same time. If a block producer is found to do so, it could be voted out. Such double-produced cryptographic evidence may also be used to automatically remove perpetrators.

Compared with the traditional algorithm of POS/POW, MCC uses the algorithm of Practical Byzantine Fault Tolerance. All of the block producers shall sign all blocks, in order to ensure that at the same time stamp or on the same block height, no block producers can sign two blocks at the same time. A block that has the signature of five block producers is considered irreversible. Any Byzantine block producer who wants to sign two blocks at the same time stamp or on the same block height will have to leave cryptographic evidence. In this model, an irreversible consensus can be reached within a second.

2. Gossip Data Transmission Protocol

State synchronization and data distribution are carried out by using the Gossip protocol between nodes in the MCC chain network.

The Gossip protocol is a common protocol in P2P, which is used for data distribution or information exchange between multiple nodes in the network. Because of its simple design, easy implementation and high

fault tolerance, it has been widely used in many distributed systems. For example, Cassandra uses it to implement cluster failure detection and load balancing. The basic idea of the Gossip protocol is very simple. The data sender selects several nodes randomly from the network and sends the data. The receiver repeats the process (often only choosing nodes other than those the sender sent for propagation). As this process continues, all nodes in the network will eventually (the time complexity is the logarithm of the total number of nodes) reach consistency. The direction of data transmission can be sending by the sender or pulling by the receiver.

3. Gossip Protocol

Peer makes use of gossip to broadcast ledger and channel data in an extensible way. Gossip messages are continuous and every peer on the channel is receiving current and consistent ledger data from multiple peers. Each gossip message is signed, so that the forged message sent by Byzantium can be easily identified and distributed to an unwanted target to be blocked. Affected by delays, network partitioning or other factors that lead to missing blocks, peer will eventually synchronize to the current ledger state by contacting peer who owns these missing blocks.

Based on the Gossip-based data communication protocol, three main functions are performed on the MCC network: to manage peer discovery and channel membership, to continuously identify available peer members and finally detect peer that is offline. The ledger data is propagated on all peers on the channel. As for any data that is out of sync with the rest of the channel, missing blocks can be identified and the data itself can be synchronized by copying correct data. By allowing the

transmission update of point to point status of the account data, the newly connected peer can achieve speed requirements. The Gossip -based broadcast receives messages from other peers on the channel through peer and then forwards those messages to multiple randomly selected peers on the channel, where the peer number is a configurable constant. Peers can also perform the pull mechanism instead of waiting for a message to be sent. The membership of channel is repeated, and the ledger and status information is kept real-time and synchronized. To propagate the new blocks, the channel's leader peer extracts the data from the ordering service and initiates the gossip transfer to peers.

4. Gossip Message

Online peers indicate their availability by continuously broadcasting "alive" messages, each containing the public key infrastructure (PKI) ID and the sender's signature in the message. Peer maintains channel membership by collecting these alive messages. If no peer receives an active message from a specific peer, the "dead" peer will be eventually cleared from channel membership. Because "live" messages have encrypted signatures, malicious peers cannot forge other peers because they lack a signature key authorized by the root certificate authority (CA).

In addition to the automatic forwarding of received messages, the state coordination process synchronizes the global state through peer on the channel. Each peer continually extracts blocks from the other peers on the channel in order to fix its own state when it recognizes differences. Since there is no need for fixed connections to maintain data dissemination based on gossip, the process can reliably provide data consistency and integrity for Shared ledger, including fault tolerance for crash nodes.

Because the channel is isolated, peer on one channel cannot send messages or share information on other channels. Although any peer can belong to multiple channels, partitioned messages prevent blocks from being propagated to peers that are not in the channel by applying message routing policies through peer-based channel subscriptions. In MCC.IO networks, nodes regularly use the Gossip protocol to send the most up-to-date data on the account books they see and to authenticate the messages they send. By using this protocol, the following functions are realized.

- **Detection of Members in a Channel:** Nodes that participate in the channel can obtain the information of other nodes and send Alive messages to announce online; offline nodes can be perceived by other nodes after a period of time.
- **Synchronizing Data between Nodes:** multiple nodes synchronize data with each other to maintain consistency. In addition, after the Leader node pulls block data from the Orderer, it can also propagate the data through Gossip to other nodes in the channel.

5. Enterprise-level Blockchain Application System

The MCC main chain is developed on the basis of the block chain foundation support system. The peak value of transaction volume reaches 100,000 times per second, and the delay does not exceed 0.03 seconds. It fully conforms to the application of the enterprise-level block chain system.

The block chain foundation support system supports the secondary development for multiple different application demands, realizes efficient data exchange, improves the development efficiency of the blockchain application and reduces the development cost. It provides technology and platform support for industrial chain development of

blockchain application.

1) Rich Parameter Configuration and Quick Deployment

The functions and performance of the blockchain are changed through different parameter configurations to meet the requirements of different enterprises and achieve the requirements of full customization.

The easy deployment and maintenance enables it to quickly deploy a blockchain or join in an existing blockchain within 2-3 steps.

2) Complete Development Interface

Based on secure RPC communication mode, the main chain of MCC provides complete API development interface, and supports mainstream development language calls such as GOLANG, JAVA and PHP.

Officially, standard development and testing tools are available and all of them are open source, including the Web block browser, the APP blockchain browser.

3) Low Cost of Enterprise

Mining is the basis of ensuring the network and data security of the blockchain. The main chain of MCC improved the mining algorithm. The mining machine can adopt the CPU mining mode to avoid waste of a large amount of power resource and reduce the cost of enterprise construction and operation.

According to industrial evaluation, the overall equipment investment and operation and maintenance cost of the main chain of MCC is much lower than that of other blockchain platforms, and it meets the requirements of energy conservation and environmental protection.

Edition

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