Internet Finance Technology Chain
IFTC

Reconstructing
Global Business

V2.0

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Ⅰ.Project Background

With the sudden famous of Bitcoin, the underlying technical support - the blockchain gradually entered the people's field of vision. Blockchain technology has attracted the attention of many organizations because it can reduce costs and improve efficiency in many financial scenarios. However, the technical bottleneck of the blockchain has hindered its wide application in various industries.

So far, the entire blockchain industry is still facing problems as follow: lack of the general underlying platform, the performance is not perfect, the compatibility is insufficient, and the transaction speed is slow. Business scenarios based in blockchain technology are still in the exploratory phase. The shortcomings in the early stage of technology development have led to the weak performance of the business in matching the blockchain. Enterprises and applications are also dependent on existing resources, and the entire blockchain industry has no killer applications. in particular:

1. Construction of infrastructure. Similar to the early days of the Internet, the entire underlying system may not be set up, causing users to browse some simple web pages.

2. Slow transaction speed. Blockchain applications (including digital currency, smart contracts, etc.), due to decentralized structure, the network is composed of independent nodes. The various operations that take place in the node are broadcasting to the network as data of the transactional transaction and packaged into new blocks by the miners. But when there are a lot of nodes, a lot of transactions will not be able to be packaged in normal time, because they are all congested in the network.

For example, one bitcoin block is produced every 10 minutes, and each block has a size limit. Even in the Ethereum, due to the development of a large number of smart contracts and ICO, it will lead to the original network congestion. Currently, the confirmation time for a Bitcoin transaction is 10 minutes. If the congestion level is getting higher and higher, and the transaction confirmation speed and block size are not improved, the transaction confirmation time will be lengthened. In life and work, transactions such as financial transactions are very frequent. Take Alipay as an example. In 2017, it reached 256,000 in double 11 festival. VISA handles 45,000 transactions per second on standard holidays and hundreds of millions of transactions on one business day.

Therefore, the existing blockchain transaction efficiency is far from being able to handle high-frequency commercial transactions.

3. Traditional thinking restricts the commercialization of blockchains. Because the market is too eager for the application of blockchains, but the fact is that the underlying decentralized public chains are not universal for various industries. Smart contracts are too simple to support complicated business scene.

IFTC (Internet Finance Technology Chain) proposed its own solution:

Based on years of development experience and precipitation of bank payment transaction settlement system, IFTC team independently developed innovative and revolutionary new blockchain underlying technology consensus algorithm, namely DRAW, Double Reverse Annulus Work, and Double Block Refrigerating Technology, which optimizes the problem of current blockchain algorithm efficiency and safety performance, truly promotes the commercial application of blockchain, and realizes the blockchain in the whole society.

DRAW consensus algorithm technology implementation principle: by changing the single block operation speed 1/N into the TX node block operation speed X/N to improve the application block speed of the blockchain, the original 500tps operation speed is increased to more than 10,000tps .

The design principle of Double Block Refrigerating Technology (DBRT): completes breakpoint copying of blocks by discrete block cutting, reduces the storage capacity of block copying, thereby reducing the biller's consumption of the copy block.

Facing the future development of the blockchain: In the next period of time, there will be a large number of industry solution providers in the market. With fierce competition, only those with strong technical capabilities and industrial resources can also integrate the value of technology into the public chain of the industry itself. In the future, there will be a high-throughput blockchain platform such as IFTC, and an encrypted digital sub-currency issuance based on the IFTC platform, a payment transaction settlement system, and a decentralized digital currency exchange. The underlying platform has really promoted the blockchain to directly target users, and realized the application and construction of the business ecosystem at the blockchain level, thereby reconstructing global commerce.

Ⅱ. Design Principles

IFTC provides a standard project underlying operating system that can be used as an infrastructure to create open source code and implementations for cryptographic digital subcurrency issues, payment transaction

settlement systems, and decentralized digital currency exchanges for businesses, organizations, and individuals in need. Program to implement your own business model architecture.

IFTC's transaction settlement system: The DRAW algorithm is used to complete the three-point record of each transaction amount of the consumer, and the account book is completely copied before the settlement is confirmed, and the problem of the transaction confirmation speed can be solved.

IFTC Decentralized Exchange: IFTC constructs a fixed payment in the clearing chain to ensure that there is no need for intermediation between the two nodes, and the assets directly trading are safe and controllable.

Fixed payment: IFTC builds a lock-in payment in the clearing chain, which builds up the consumer's own digital currency account system and the digital account system of the merchant, realizing of consumer prepaid, digital currency marketing and other financial ecology.

IFTC Tokens Issuance Contracts: Many high-level financial agreements with special purposes, they want to have their own internal currency as an organizational form, IFTC establishes a decentralized and autonomous commercial trading organization, by compiling fair and open rules in an open source program, an organization that operates autonomously without intervention and management.

The underlying platform of the IFTC infrastructure chain has truly realized the acceleration of blockchain application based on cryptographic digital sub-currency issuance, payment transaction settlement system and decentralized digital currency exchange, helping to promote the transformation and upgrading of the real economy and reduce the cost of

transformation and upgrading of the real economy and reduce the cost of the real economy. Improve the synergy efficiency of the industrial chain, optimize the environment for the development of the industry's integrity, and guide the funds to real economic. At the same time, it also greatly reduces the operating costs of enterprises, improves operational efficiency, and ultimately achieves a win-win situation for both corporate and social benefits. At the same time, IFTC is committed to using blockchain thinking to construct a new form of business and credit environment, and to provide a new model for the transformation and upgrading of traditional enterprises and Internet mature products.

Ⅲ. Technology Structure

3.1 Consensus Mechanism

Consensus mechanism is a set of mechanisms designed by distributed books to make the accuracy and consistency of stored information. The design of the mechanism is mainly determined by the requirements of business and performance, from PoW to PoS to DPoS and various Byzantine fault-tolerant algorithms. The mechanism continues to innovate, but always meets the transaction speeds that are not sufficient for commercial applications. Based on this, IFTC proposed the Double Reverse Annulus Work（DRAW）and Double Block Refrigerating Technology. It has greatly improved the confirmation of blockchain transactions and transaction throughput, so that it can meet the existing financial transaction scale and most business needs.

3.2 DRAW

The design idea of the DRAW algorithm is to make each transaction must participate in the copying of the last two transactions and the next N transactions, completing the transaction accounting in reverse transaction order, and after the X transactions, a transaction group

will be formed with all X transactions is confirmed after the block is packaged by the last one which be copied. After the transaction is initiated, the previous TX initiates a copying process and directly broadcasts the entire network, completes the transaction bookkeeping, realizes the transaction closed loop, and after completing the X transaction, the TX is completed by the last copy of the tail to complete the transaction. And produce a block to complete the determination of all transactions. The biller of each transaction needs to complete the copying of all the formed blocks before to participate in the accounting of each subsequent transaction. DRAW optimizes the efficiency and security of the underlying application of blockchain through 3 points of accounting and block-based authentication.
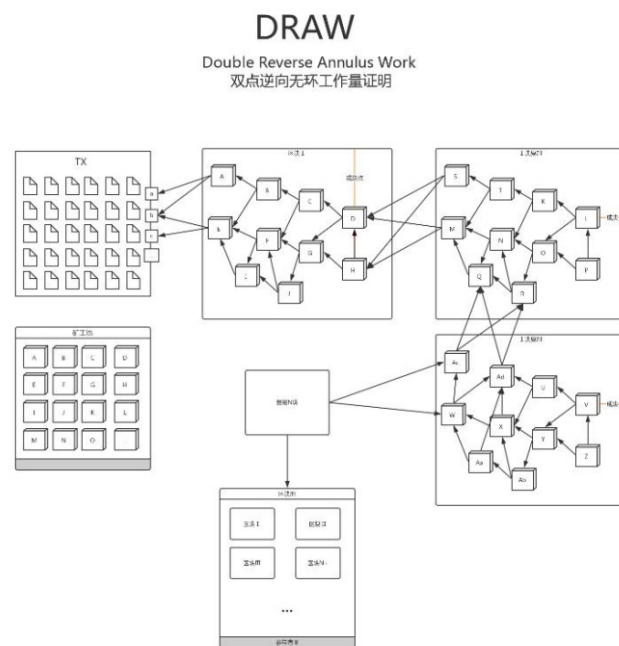

3.3 DBRT

DBRT design ideas: In today's mainstream public blockchain, all public nodes bear the burden of storage transactions, smart contracts and various states, which may make it costly to get more storage space to maintain its normal operation on the blockchain. In order to solve this problem, a feasible method of block freezing technology has been

proposed. The key to this technology is to separate the entire storage so that different nodes store different parts; therefore, each node is only responsible for hosting its own block data, rather than storing the complete blockchain state. The first and most important challenge of freezing is to create N-block nodes. There is a need to develop a mechanism to determine which nodes can create indexes in a secure manner, thus avoiding attacks by people who control a large number of specific nodes.

The best way to defeat an attacker is to establish randomness. By exploiting randomness, the network can randomly extract nodes to form an index. Such a random sampling approach prevents malicious nodes from overfilling a single index. But how do we build randomness? The easiest source of public randomness is the block, for example, the Merkle tree root of the transaction. The randomness provided in the block is publicly verifiable and uniform random bits can be extracted by the random extractor.

However, simply using a random mechanism to assign nodes to an index is not enough. We must also ensure that the different nodes of the network index member data consistency. This can be achieved by a consensus protocol like proof of work.

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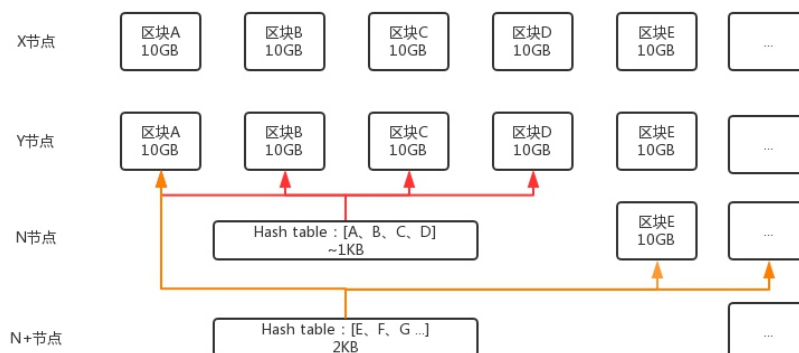
Ⅳ. Commercial Application

IFTC (Internet Finance Technology Chain) is an underlying platform for the basic chain that can be applied to the vertical domain. The DRAW consensus algorithm and double block refrigerating technology independently developed by the IFTC team solved the problem of accounting speed and security in commercial financial applications, enabling traditional industries, mature Internet products, and physical businesses to realize settlement based on digital currency and payment transactions.

The blockchain application of the system and the decentralized digital currency exchange ensures the actual implementation of DAPP, providing a high-performance, ultra-high processing throughput infrastructure for the physical business and Internet enterprise transformation blockchain.

Let more blockchain application enterprises can quickly realize the application and circulation of decentralized payment transaction settlement based on IFTC. It has really promoted the blockchain to directly target users, and realized the application and construction of traditional enterprises, mature Internet products, and physical commerce at the blockchain level.

V. About the Team

Marco

Domestic expert in internet technologies;

As full-stack architect, he is proficient with frontend/backend architectures, design and development. Having designed and developed large-scale mobile payment and clearing systems for supporting mobile payments of several banks such as Pudong Development Bank and China Merchants Bank, he has accumulated abundant experiences in designing and developing internet systems for vertical financial fields.

In 2016, he began to devote himself to explorethe technology of blockchains

DOGI LI

Senior Business Model Architect

He holds the Bachelor's Degree in Chinese Language & Literature from Shenzhen University, the Bachelor's Degree in Business Administration from Sichuan University and the MBA of Southwestern University of Finance and Economics.

He is an independent investor, leader of the Blockchain Research Group in the China Academy of Management Science and vice president of the Enterprise Innovation and Development Association of Guangdong Province.

Having established several science and technology companies, he has engaged in internet, real estate, financial technology for more than 15 years.

In 2013, he began to devote himself to explorethe business models of blockchains.

Edwin C Lun

With the Bachelor's Degree of Science in international commerce, he undertook courses about CEO management in the Harvard University.

Twenty years of strategic business development and operation experience in Asia and North America.

Having established several enterprises, including IDS, Mission 3-D and Pharos Medical Device, he is the leader of family enterprises and several transnational enterprises.

Kiky

As researcher of Shenzhen Institute of Advanced Technology, he focuses on studying blockchains and internet of things, with rich experiences in data and control of credit risks.

He has attended several international science conferences and published related papers.

Joshua CM

With 3 years of experiences in internet finance, he got involved in the financial cooperation of a domestic leading mobile payment service provider (ULINE) with banks, up till now ULINE have cooperation with 27 banks. He has rich experiences in internet marketing and brand planning.

Menson Pak

With 3 years of experiences in internet finance, he got involved in the financial cooperation of a domestic leading mobile payment service provider (ULINE) with banks, up till now ULINE have cooperation with 27 banks. He has rich experiences in internet marketing and brand planning.

Charming

Graduating from Shenzhen University with double degrees in Biotechnologies and Chinese Language & Literature, she got involved in new media advertising strategies and development of well-known projects such as the project of The Beijing News for seeking Chinese makers, world internet conferences, My New Swag and cross-strait world internet conferences. She leads her team to track project schedules, marketing, advertising and promotion.

Caleb

He is Ph.D of UCL, senior Java full-stack developer, participant of projects in UCL's Blockchain Center and project architect of the Big Data Research Center of Alan Turing Institute.

He served as architect and higher posts in the Citibank, the Bank of America and the American Express.

During his employment for UCL, he was responsible for collaborating with central banks, investment banks, hedge funds, clearance center and science & technology enterprises in terms of project research and development.

Atticus

Graduating from the London Business Collage with MBA and the Master's Degree in Computer Sciences, he came from the HQ of the Barclays Bank. With 8 years of experience in business strategies and formulation in retail banking, he has accumulated 6 years of experiences in developing applications for real-time transactions of investment banks.

Xavier

He graduated from the University of North Texas with a degree in computer sciences of software in 1999.

He was employed by Nortel Network, worked as R&D Manager of SUSE Linux in Beijing and Taiwan, and CTO of Symbio Mobile. He has worked as SUSE's consultant for distributed file systems ofCeph, and blockchain consultant of WeBank and 5miles.

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