ICPlaza（ICT）Whitepaper
Metaverse Infrastructure Service Provider

The ICPlaza Team

Contents

l. Abstract

1.1 Metaverse

As human civilization advances, our world is evolving into a digital, virtual world that is dominated by technology, creating a Metaverse world unlike any other. Metaverse is not only an extension of reality but also an online virtual world that is born out of reality and interacts with it. Within the Metaverse with a complete social and economic system, people are represented by virtual images and strive for fairness, freedom, and openness. Under this system and goals, a social governance structure with distributed blockchain will be the ideal solution for the Metaverse.

1.2 ICPlaza and Metaverse

ICPlaza, a Metaverse infrastructure, is a Metaverse supercomputing system that will solve the following problems:

1. The fusion of the physical world and the virtual digital world
2. Metaverse's digital identity
3. Metaverse Asset Proof
4. Safe exchange of Metaverse assets
5. The rapid development and application of the digital world can quickly enhance the experience of Metaverse
6. Support WEB 3.0
7. Interaction between multiple Metaverse

1.3 Problems existing in the app of existing public chains in the Metaverse

The public chain is mainly represented by BTC, ETH, Cosmos, Filecoin, Solana, etc.

BTC is the pioneer of blockchain thinking and has historical significance, but it is slow to produce blocks

and inefficient, and cannot satisfy large applications.

ETH is the pioneer of smart contracts. It uses virtual machine technology to provide various application

interfaces, which cannot meet the requirements of large-capacity.

Cosmos is the pioneer of cross-chain technology, and the ecological progress is now slow.

Filecoin is the pioneer of off-chain storage, and there are still many DeFiciencies in data entry and

applications.

Solana proposes POH thinking and supports large capacity, but it is often attacked and stability needs to

be improved.

At present, various public chains cannot adapt to various applications of Metaverse, and can only solve some problems of Metaverse. ETH/Solana can only solve computing problems and small storage problems, but cannot solve large-scale storage problems. Filecoin solves storage, not computation. Metaverse needs to take care of both. ICPLaza is a heterogeneous blockchain protocol that balances computing and storage. The main considerations are as follows:

a . Operation efficiency

The current performance problems of the public chain mainly focus on three aspects:

1. P2P network communication mode, network delay, and network stability problems.

2. Fairness and efficiency of participants getting incentives in consensus rules.

At present, there are mainly the following ways:

POW proof is fair but inefficient and prone to bifurcation

POS proof method, the fairness of the selection of the block producing node, has high efficiency. It is the most mature and acceptable way at present and is one of the main ways in the future.

3. Block structure problems, block capacity is small, a transaction confirmation number is small, block.

capacity is large, transaction volume is large, block confirmation time is long.

Only by comprehensively considering the above three aspects can the efficiency problem be solved.

b. Participate in cost

1. High threshold and cost of mining
BTC consumes US$2 billion in electricity each year, and ETH consumes US$430 million in electricity each
year. As a result, a large amount of energy is used for POW mining, which consumes a large amount of
energy in the world. With more and more participants, this situation tends to deteriorate. Reducing the
cost of participation, increasing the decentralization of the public chain, and lowering the threshold for
public chain applications are the goals pursued by ICPlaza.
2. Smart contracts will occupy a large number of computing and storage resources of the public chain, and a higher miner fee is worth thinking about.
The Metaverse public chain needs to take into account the cost of participants, consensus, fairness,
miners' fees and other factors, and give full play to the role of infrastructure

3. High operation and maintenance costs
A large amount of on-chain storage will consume resources. With the increase of blocks, storage costs
will increase accordingly. How to combine off-chain storage and on-chain storage to solve the subsequent persistence problem of blockchain?
This is also what the Metaverse common chain needs to consider.

c. Security issues

1. Account data security
In the Metaverse, personal digital identity systems need to be considered, whereas traditional public
chains generally do not. Data privacy is very important in the Metaverse, as it is both an individual right
and a bottom line for individuals and organizations, as well as certain industries that involve a lot of trade
secrets and interests. Building a robust system of trust is also the vision and expectation that blockchain
has attracted many adherents.
2. Secure network nodes
Network nodes are the embodiment of public chain participants and the embodiment of network security
and impartiality. The more nodes there are, the more secure the network will be, but the efficiency will
decrease. So a reasonable number of nodes is what the Metaverse infrastructure common chain must
consider.
3. Higher security
Public chain system security needs to be improved all the time, including from
Attacks by external entities (denial-of-service, DDoS, etc.), attacks by internal actors (simulation, Sybil,
Collusion, Collusion, etc.) and components.
Failures and computing power attacks
Double flowers attack
Transaction and contract vulnerability defense mechanism
Identity and anonymity
Database security etc.
The Metaverse public chain will be faced with more users, and it must meet higher standards in security
audit, security architecture, compiler security optimization, virtual machine security design (scripting
language, etc.), contract security template, and other aspects to meet the security needs of users.
times and different environmental parameters It may change. But now, especially in the digital world, business systems increasingly rely on computer algorithms for decision-making optimization, including natural language processing (NLP), machine learning, and operational

research algorithms. We often deliberately add some randomness to these algorithms so that the decision is not only a local optimal state but also tries to find a better sub-optimal result.
5. Some real-world business logic should run off-chain and should not be executed as a type of smart contract such as a repeatable operation. Utilizing distributed ledger integration and collaborative services and resources under the chain is the key to further promoting the application of blockchain technology in more realistic scenarios.

ICPlaza considers the above four aspects and makes the following design based on the characteristics of the meta Metaverse：

1. Enhance the NFT technology, which can fully satisfy the mapping between the real world and the Metaverse.
2. Place the DeFi function between the consensus layer and the application layer to reduce the difficulty of developers and enhance the security of the Metaverse.
3. Combine NFT, GAME, and DeFi to directly extend multiple application business logic to layer1.
4. Supports cross-platform operation within the Metaverse ecosystem.
5. Supports intersystem operation between the Metaverse.
6. In the later stage, heterogeneous chain architecture (rectangular chain structure) was adopted to support ICPlaza storage in the Metaverse.
7. A decentralized system that supports DAO governance.

ICPlaza is an open-source Metaverse public chain based on efficiency, applications, developers, and participants. It meets the social and economic governance system of an independent Metaverse world. It is an open, fair, and transparent Metaverse blockchain infrastructure with a consensus system of BFT+POS, a random proposer election system, and block recognition. The flexible, simple, and efficient app interface enables the rapid construction of various distributed commercial application services in the Metaverse.

II. ICPlaza Network participation system description

a. Proposer/Validator nodes

Staking services anywhere in the world, based on node participation rules, allows an ICPlaza token to access the ICPlaza network, or to participate in the consensus of the ICPlaza network, and receive incentives, by entrusting nodes to pledge ICPlaza Tokens.

ICPlaza governance layer supports a variety of governance forms: text proposal, automatic on-chain parameter modification, software upgrade, network termination proposal, Tax income distribution proposal.

Through the on-chain proposal, the whole network vote to pass or reject, to obtain the governance right of the ICPlaza network. The governance process of these proposals must consume a certain ICPlaza token to ensure that the proposal is not abused, and only the users or nodes participating in the mortgage can vote on the proposal.

b. ICPlaza Service developer

Build sentinel nodes, synchronize ICPlaza network blocks, develop chain services according to ICPlaza

SDK, the open-source super application layer service interface, and develop various distributed

business applications in the Metaverse accordingly.

ICPlaza SDK infrastructure also includes multiple interfaces to support multi-asset management, DeFi business, NFT business, Farm business. It can also be upgraded on the chain through proposals to support more services. The service provider can access the service more quickly through DeFinition and service Binding, and the service demander can understand the service capability and interface through the Query interface. Then the service can be used through the Invocation interface.

c. Service consumer

A service consumer is a user who uses an off-chain service by sending a request to the network and receiving a response.

d. ICPlaza foundation

In the early stage, Organized community construction and operation of ICPlaza, and after completion, I handed overall operation and governance power to the community for decentralized operation and maintenance.

III. ICPlaza network design

3.1 ICPlaza Network architecture

ICPlaza network consists of a network layer, consensus layer, and application layer.

A. **Network layer (P2P)**

Responsible for transaction and data transmission and synchronization.

A. Atomic broadcast protocol

ICPlaza's P2P network protocol uses the atomic broadcast protocol, which ensures that ICPlaza replicates sequential protocols. It also handles a proposer election and node recovery after a proposer fails. Multiple operations of the business are packaged into the same block, and the transaction status is real-time consensus.

·**DeFine**

Proposer and Validators -- In an ICPlaza cluster, only one node is proposer at any one time, and the rest are validators. A proposer receives state changes from a Client(s) that it uses and copies them to other Validators (s) as well as save them. However, for all read requests, it is loaded to both proposer and Validator (s).

Transactions -- a transaction, that is, a Client state change, propagated by a proposer to its validator(s) :

'E' -- The epoch of the proposer. The epoch is an integer generated when the validation node changes to
a proposer. It should be greater than the epoch of any previous proposer;
"C" -- an ordinal number generated with a proposer, starting at 0 and increasing upwards.Along with the
EPOCH is used to sort incoming Client(s) state changes/transactions;
'F. Story' -- The History queue of the Validator.Used to ensure that arriving transactions are committed in
the order in which they arrive;
Outstanding Transactions -- F. story Set of transactions with a serial number smaller than the current
confirmed serial number.

ICPlaza requirements

1. Replication guarantee

Reliable delivery: If a transaction M is committed by one server, it will eventually be committed by all
servers.
Absolute order: If one server commits transaction A before transaction B, then for all servers, A will
commit before B.
Causal Order -- If transaction B is sent after transaction A is submitted by the sender of B, A must be
placed before B. If a sender sends C after sending B, C must come after B.

2. As long as 2/3 of the nodes are normal, the transaction is replicated.
3. During transaction replication, the failed nodes missed by the Down machine should be reacquired
during recovery.

ICPlaza implementation

Client(s) can initiate read operations from any ICPlaza node. However, when it writes to any ICPlaza node,
the status changes are first forwarded to the proposer node.
ICPlaza uses a variant of the two-Phase-commit protocol to replicate transactions to the validator(s).
When a proposer receives a status update from one of its clients, it generates a transaction with an order
c and a proposer EPOCH E (as DeFined earlier) and sends it to all validator(s).
Upon receipt, the validator adds the transaction to its history queue and sends an ACK back to the
proposer. When a proposer receives an ACK for a quorum, it issues a transactional quorum submission. A
validator(s) that receives a commit commits the transaction unless the c value is greater than its use

the sequence number in the history queue. At this point, it waits to receive a commission for the previous
transaction(Outstanding Transaction (s)) before executing that commit.
If the proposer crashes, a recovery protocol is executed between nodes to ensure that:
Before resuming normal services, nodes agree on the common status.
Find a new proposer to broadcast status updates. For a node to perform a proposer role, a node with quorum support is also required. In reality, due to the existence of node collapse, recovery reciprocation; Some proposers can occur over a while, or even if the same node becomes a proposer more than once.
Node lifecycle: Each node executes either one complete cycle of the protocol at a time; Either the cycle is abruptly interrupted, back to Phase 0, and a new cycle begins.
Phase 0 -- Proposer elections
Phase 1 -- Discovery
Phase 2 -- Synchronization
Phase 3 -- Broadcast
Note: Phases 1 and 2 are important to ensure consistency of state across all nodes, especially when nodes are recovering from crashes.
Phase 0 -- proposer elections
The node runs initialization at this stage with the state election. A proposer does not have to be a special
election agreement, only if it terminates with a high probability, selects one available node, and has a
quorum number of nodes. When the proposer election algorithm is complete, the node saves its election
results to local memory.
If node P votes for p0, then P0 is called an expected proposer of P; If the node votes for itself, its state
should be set to leading, otherwise to following. By the way, the expected proposer selected here may
become a true proposer only if it reaches the beginning of Phase 3 and becomes the primary processing
node.

Phase 1 -- Discovery

At this stage, the Validators (S) communicate with their expected proposers so that the proposer can

gather information about the most recent transactions accepted by the Validator (s). The purpose of this

phase is to find as many accepted transaction updates within the quorum node as possible to create a

new epoch in case the previous proposer commits a new transaction.

In theory, a validator(s) with a quorum number has all the information that its predecessor proposer has

accepted the state change, so that at least one of the validators (s) with the current quorum number, has in its history queue all accepted status changes of the predecessor proposer. That means that the new

proposer can get that information as well, using the following algorithm:

Phase 2 -- Synchronization

The phase synchronization summarizes the discovery phase of the protocol, where the proposer

synchronizes the cluster nodes with the change history obtained during the discovery phase. Proposer

communicates with the Validator (s) and sends a transaction from its history queue. If the history of the

Validator (s) lags behind that of the proposer, the Validator (s) replies with an ACK; When a proposer sees

an ACK from a quorum, it sends a commit message to them. At that point, the proposer role is

established, it is no longer the expected proposer.

Phase 3 -- Broadcast

From now on, if no nodes crash, they will stay in this phase forever, performing transaction broadcast

upon receiving write requests from clients.

Note: ICPlaza uses a proposer that periodically sends a heartbeat between a proposer and a Validator (s)

for failed tests.If a proposer does not receive a heartbeat from a quorum node within a specified period, it relinquishes leadership and moves to an election state, Phase 0. If the validator times out and

no heartbeats from a proposer are received, the numbered election phase is also carried out.

B. ICPlaza consensus layer

1. Proposer's election strategy

When the Validator is initialized, each node on the network stores a copy of the Validator in a loop. When

the number of blocks on the chain reaches a new height, a numbered numbered numbered (PROPOSer) election takes place. If the network is not good, it may take more than one turn to generate a block

height. However, each time a new validator is numbered with a proposer, the rotation rule is simple: the first time, It selects the 0th validator in the array as its proposer, selects the first validator in the second

round, and so on, resetting to 0 when it reaches the last, and so on. This kind of round-robin strategy

effectively skips the proposer nodes with a numbered timeout, allowing the algorithm to proceed

automatically.

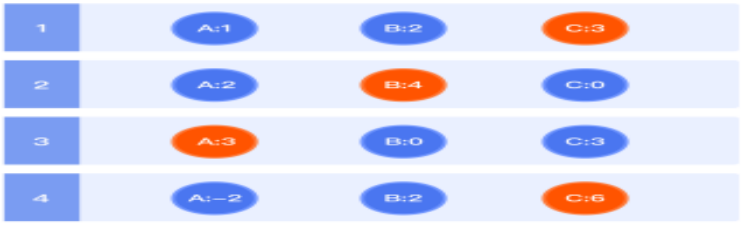
The Validator selected rule: choose order associated with Validato voting power proposer, whoever

Voting power big priority was chosen as the proposer. If the Validator with the largest voting power is

selected in each round, the Validator with the largest voting power will always be selected, and the other

voting power has no chance to become proposers. To solve this problem, ICPlaza provides a

voting power update algorithm, and the rules of the algorithm are as follows:



The initial voting power of a Validator is equal to its stake. What is a stake? The consensus algorithm of

ICPlaza is POS+BFT, where the stake is the weight of the POS algorithm, which is used to measure the

weight of a node. If The Stake of Validator A in the Genesis Block is 1, then its voting power is initialized to

1, and the voting power of the Validator is updated at the end of each round.

1) If A Validator is not selected for A proposer in the current round, then its voting power increases by its

initial stake.

For example, if the initial stake of Validator A is 1, and if A is not selected for A proposer, Then its

votingPower=pre_votingPower+stake.

2) If a Validator is selected as proposer in the current round, then its voting power is reduced by the sum

of the stake values of the other Validators in the array, for example:

The Validator collection = { A: 1, B: 2,C: 3},

If C is selected as the proposer, then C votingPower = pre_votingPower - (stake_a + stake_b)

Example demonstrates:

The graph below illustrates the process for selecting a proposer:

First, suppose we have three Validators A, B, and C in the Genesis Block. Their stake is 1, 2, and 3 respectively. Therefore, the voting power of these three Validators is 1, 2, and 3 respectively.

In the first round, ICPlaza selects the largest Validator at voting power as its proposer, according to the rules described above, so in the first round, its proposer is C, the box with the red number in the first column above. As A rule, the voting power of all validators is updated at the end of each round. In the second round, the voting power of A, B, and C is 2,4,0, respectively.

As you can see from the figure above, Validator C is selected as a proposer on two of the four rounds, because each Validator is called a proposer with a stake ratio relative to its stake to all validators, Validator C has a stake of 3, where the total stake is 6, so C is called proposer at a ratio of 50%.

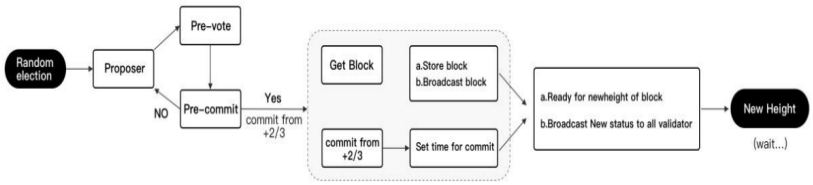
C. **ICPlaza Consensus process**

Confirming a block at the same height requires the round-based protocol, which consists of the following five steps: NewHeight, Veto, Prevote, Pre-commit, and Commit.

Propose, Prevote, and Pre-commit are also called rounds. Multiple rounds may be required to confirm a block at the same height. Multiple rounds are required in the following cases:

1. The specified proposer node is not online
2. Blocks submitted by a proposer are invalid
3. The proposed block is not broadcast in time
4. The proposal block is valid, but not enough nodes receive the corresponding +2/3 votes in time during the Pre-commit phase
5. The proposal block was valid, and enough nodes received +2/3 votes, but not enough nodes received +2/3 Precommits

The round-based consensus process of ICPlaza is as follows:



ICPlaza adopts BFT+POS consensus algorithm, without bifurcation problem, so the number of blocks confirmation only needs one:

When the Validator validates block B, it means that more than 2/3 of the nodes committed pre-commit in

R, which means that at least 1/3 of the nodes are locked in R '>R.If there is a vote for the same block

height at this time, since the +1/3 nodes are locked in the R 'round, no +2/3 nodes will vote prevote and

no new consensus block will be reached at the same height, so there will be no fork.

D. ICPlaza application layer

1. The application layer can be built in any language.

2. The application layer can realize complete business logic on the chain.

3. The application layer provides the SUPER application interface SDK similar to that of virtual machines. Through the SDK interface, all kinds of Metaverse distributed ledger can be recorded on the chain, and all kinds of ledger information can be easily queried.

E. Chain performance design and other considerations

1. The ICPlaza chain will slow down with the increase of validators, which is caused by the increased complexity of communication. The ICPlaza chain has a maximum number of verifiers, and on Creation Day, the maximum number of verifiers will be set to 100.

2. Any ICPlaza holder may become a verifier at any time by signing and submitting a BondTx transaction unless the current group of verifiers exceeds the maximum.When the substitution condition of the verifier is: the voting power of the new verifier is more than the existing minimum voting power effective verifier.

3. Specify a timeout mechanism

ICPlaza has an explicit time-out mechanism to ensure that votes and blocks are not delayed. If a pre-vote fails or if a timeout occurs, a new Proposer initiates the next round of packaging and voting.

4. Responsibility system for

ICPlaza uses PoS as an anti-witch attack mechanism. Due to the inherent characteristic of PoS as Nothing At Stake, ICPlaza formulated a relevant responsibility mechanism to deal with this problem.

5. Security and responsibility system of independent chain

The verifier node and the corresponding principal node are responsible for the results, and if the verifier node signs multiple places on a forged transaction or fork, the disloyalty will penalize the verifier node.

6. Responsibility system of network bifurcation

When more than 1/3 of the nodes in the network gather evil or enter the review state offline, the ICPlaza network will be interrupted, and other non-evil nodes will vote into the bifurcation

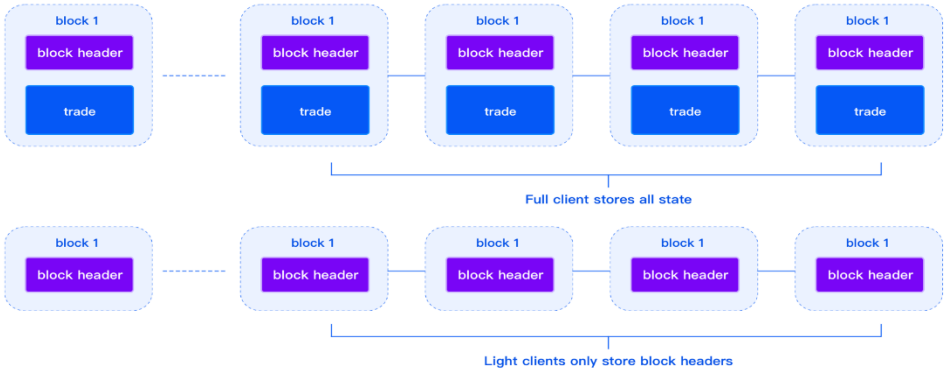
process according to the hard bifurcation agreement, and the security deposit and rights and interests pledged by the evil verifier node will be forfeited.

7. Compatibility

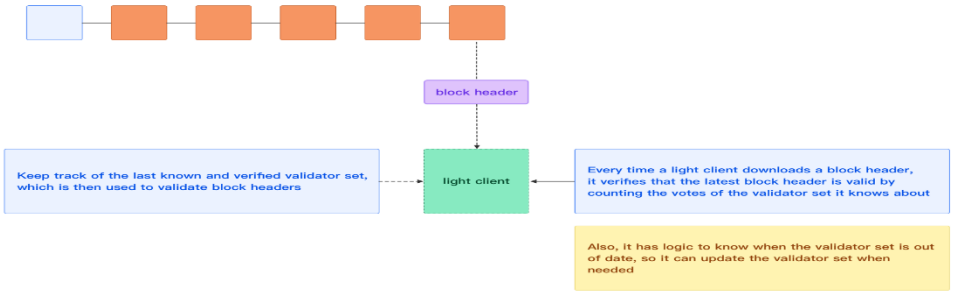
The compatibility of ICPlaza is that it can theoretically support developers to develop their application layer and on-chain logic in any language, regardless of the network layer and consensus layer. ICPlaza is developed in the GOLAND language.

8. Lightweight

The lightness is reflected in that, except for the nodes responsible for verification and block generation, other nodes do not need to download and store the complete state of the block, only need to store the block header of the corresponding chain, and use Merkle Proof to query and verify specific transactions on other chains. The partial nodes of ICPlaza-based blockchain do not even need to synchronize all block headers, just download block headers periodically. Because of the certainty of the ICPlaza chain, each block needs to be confirmed by the verifier vote, so the light client only needs to pay attention to the changes of the verifier set.



Non-full nodes of ICPlaza-based blockchains do not even need to synchronize all block headers, as long as they periodically download block headers. Because of the determinism of the ICPlaza chain, each block requires validators to vote for final confirmation, so light clients only need to pay attention to changes in the validator set.



2.ICPlaza enhances NFT function

1. **Compatible with ERC-721 protocol**
2. **Compatible with ERC-809 protocol, can rent NFT**

3. Compatible with ERC-875 protocol, allowing users to transfer multiple NFTs at one time

4. Compatible with ERC-994 protocol, allowing offline physical assets to be mapped to the digital world

of the Metaverse

5. Compatible with the ERC-998 protocol, NFT generated by ERC-721 can be split into FT or NFT

6. Compatible with ERC-1155 protocol, can merge multiple NFT

7. Compatible with ERC-1201 protocol to increase rental liquidity of ERC-809

8. Compatible with the ERC-1948 protocol, NFT can store dynamic data

9. Compatible with ERC-2981 protocol, support NFT royalty function

In addition, to better serve the Metaverse:

1) Enhances multiple physical properties of NFT's real world

2) Enhance NFT storage network properties in IPFS

3) Strengthen NFT and FT to synthesize, rebuild a new NFT function

4) Add NFT synthesis, transfer, and other mining functions

To better serve NFT developers, support NFT casting, synthesis and destruction, locking, support

a variety of NFT SDK interfaces.

5) The NFT in ICPlaza is compatible with other ecosystems through smart contracts.

3. Enhanced DeFi function

1. Support the following businesses, which can meet the needs of various decentralized financial in the Metaverse

1) Decentralized transaction (order-type/AMM-type)

2) peer-to-peer lending

3) Capital pool lending

4) Insurance business

2. Provide various DeFi service interfaces to facilitate the development of financial services in the Metaverse（RPC interface）

·Creating a DeFi module:

ICPlazaD --home data tx DeFi create-DeFi

·Pledge the DeFi module:

ICPlazaD --home=data tx DeFi delegate

·Query DeFi:

ICPlazaD --home=data query DeFi DeFis

·Query DeFi parameters:

ICPlazaD --home=data query DeFi params

·Querying DeFi pledge:

ICPlazaD --home=data query DeFi delegation

·Redemption commission:

ICPlazaD --home= Data tx DeFi Redeem

·Generate unsigned files (extract revenue):

ICPlazaD --home=data tx distribution withdraw-rewards

·Generates a signature file:

ICPlazaD --home=data tx sign ./send.unsigned

·Amino signature:

ICPlazaD --home=data tx sign ./send.unsigned

·Retrieves sequence and account number:

ICPlazaD - home = data/ICPlazaD query the account

1) Each ICPlaza user can independently establish their DeFi pledge pool.

2) In DeFi pool, you can deposit, pledge, withdraw money, loan, set/switch interest rate type, set collateral, and so on.

3) In any DeFi pool, users can carry out some or all of the above five services.

3. On-chain atomic transaction interface(RPC)

·Query order book parameters:

ICPlazaD --home=data query order book params

·Enquire trading Pool:

ICPlazaD --home=data query order book pools

·Set up a trading pool:

ICPlazaD --home=data tx order book create-pool

·Increase the amount of pledge:

ICPlazaD --home=data tx order book add-pledge

·Reduce the amount pledged:

ICPlazaD --home=data tx order book redeem-pledge

Add new orders:

ICPlazaD--home=data tx order book place-order

·Cancel the order:

ICPlazaD -- HOME =data tx order book revoke-order

·Make a deal:

ICPlazaD --home=data tx order book agree-orders

Query trading pairs:

ICPlazaD --home=data query order book tx-pairs

·Other queries:

ICPlazaD --home=data query order book tx-pairs

1) Matching atomic transactions can be realized in any DeFi pool

2) DeFi pools can easily interact with each other

4. Multi-asset management function(RPC)

·Issue of new assets:

ICPlazaD --home=data tx token issue

·Query for issued tokens:

ICPlazaD --home=data query token tokens

·Modify a contract parameter:

ICPlazaD --home=data tx token edit

·Asset disposal:

ICPlazaD --home=data tx token burn

·Example Query the total number of assets destroyed:

ICPlazaD --home=data query token burned

·Transfer of contract ownership:

ICPlazaD --home= Data TX Token Transfer

1) By adding the function of entrusting and sharing to the ICPlaza chain, the promotion of the ICPlaza

Metaverse ecology can be easily realized.

2) Support the FARM function, through the pledge of one or more assets, easily delay the release of

assets, assets mining, up to 5 assets.

4. NFT/GAME enhanced with DeFi service

NFT will play a key role in the Metaverse governed by ICPlaza:

First, blockchain is an important technology that connects the concept of the Metaverse: based on its

technical characteristics, blockchain naturally fits the key application scenarios of the Metaverse. Blockchain is a traceable chain data structure that combines the continuously generated information blocks sequentially in chronological order. It is a distributed ledger that ensures that data cannot be tampered with or forged using cryptography. By its characteristics, blockchain can be used for digital assets, content platforms, gaming platforms, sharing economy, and social platforms. Blockchain technology is a bridge between the bottom and the top of the Metaverse.

Secondly, in the overall architecture of the Metaverse, above the infrastructure, data, and algorithm layer

and below the application layer, a complete, rigorous, and mature technical system is needed to support the governance and motivation of the Metaverse:

1) The characteristics of the Metaverse governance link are that the Metaverse is constructed by

numerous centralized institutions and numerous individuals, so it should be distributed, decentralized, and self-organized;

2) The incentive link of the Metaverse is characterized by ensuring that digital assets are not replicable, so

it can guarantee that the economic system in the Metaverse will not generate inflation and ensure the

stable operation of the Metaverse community. With blockchain technology, participants in the Metaverse

can receive rewards based on their contributions to the Metaverse (time, money, content creation).

NFT can act as a medium for the incentive phase of the Metaverse: NFT is an asset attached to the blockchain, the technology integrated with the blockchain does not need to be tuned, and each NFT has scarcity and value differences, can mark ownership, and can act as a key asset in the Metaverse.

In ICPlaza, support a variety of different application environments, support the combination of NFT, GAME and DeFi, etc., to form the Metaverse into a governable world.

1. Through the SDK interface on the ICPlaza chain, different NFT can be easily synthesized into a new NFT.

In the game world of the Metaverse, players' assets can be locked in the chain and players' characters

can keep upgrading and evolve by using NFT synthesis technology, and assets can be transferred.

2. Support NFT and FT to synthesize a new NFT

3. Support NFT, NFT, and FT to synthesize a new NFT

4. NFT can be split into NFT or FT under certain conditions

5. Support different NFT synthesis, different NFT and FT synthesis, NFT resolution process for mining, forming a new FT

6. Support NFT pledge and mining

7. Support NFT pledge and realize DeFi business such as P2P and capital pool lending

8. Support financial services such as game DAO

1. ICPlaza Metaverse DAO enhanced support

DAO is formed based on community consensus autonomy, that is, individuals make their own

decisions and reach the rules of the organization through consensus. All the consensus rules are enforced

through smart contracts. In this process, no one can violate consensus rules. Because

once a smart contract is deployed to ICPlaza, it cannot be modified, repealed, or deleted.

DAO is a cooperative operation. The so-called cooperation means that at least some people benefit

without harming anyone's interests. In human society, the decisions made by a single individual are often

less accurate than those made by a group.DAO requires the use of collective intelligence, which is a kind

of shared or group intelligence, and the process of gathering people's opinions and transforming them

into decisions.

Collective intelligence emerges from the cooperation and competition of multiple individuals. Collective

intelligence is formed in bacteria, animals, humans, and computer networks, and emerges in various

forms of consensus decision making. Giving full play to collective wisdom is conducive to talent utilization,

innovation and collaboration, demand creation, and cost reduction. In the Metaverse, there are many

ways for DAO form to exist. Currently, ICPlaza supports the following:

·Protocol type DAO

·Investors DAO

·The creator DAO

·Collectors DAO

To realize the DAO function, ICPlaza corresponds to the following interfaces on the chain:

·Create DAO

·Creating the DAO Protocol

·DAO target creation

·The DAO's exit

6. Interaction between ICPlaza Metaverse ecology and other ecology

In the Metaverse, not only the ICPlaza infrastructure, there should be a variety of infrastructure.

ICPlaza adheres to the principle of openness and transparency to other ecological or infrastructure facilities. Willing to collaborate with other infrastructures across the chain. Be willing to open the corresponding interface. ICPlaza supports the following methods:

1)Agreement across the chain

2)Smart contract bridge spanning chain

3)Homogeneous across the chain

4)Heterogeneous across the chain

VIII. ICPlaza Network Economic Token

The ICPlaza network uses a native token to express.

The native token is named Internet Computer Technology(abbreviated: ICT).

Integrate ICT tokens into the consensus engine verifier of the ICPlaza network through the validator

and agent system. Represent voting rights and participate in the governance of the ICPlaza network.

Distribution of ICT

ICPlaza

Token: ICT(Internet Computer Technology)

Total supply: 700 Million

Pre-mined: 10%

The remaining 9% is mined by nodes and 81% by ecological application mining.

a. Pre-mined allocation:

Angel 15.8%

Strategy 23.7%

Public sale 5%

Pre-mined allocation: 4.5%

Airdrop: 0.6%

Third parties and consultants: 2.2%

Early nodes: 10%

Development team: 18.2%

Ecological development Fund: 20%

b. Nodal economy model

6s block, reward 1.2 ICT

Among them, 10% is rewarded to the proposer (block producing node), 20% is rewarded to the node competition, and the rest is rewarded to the validator according to the voting rights.

for node:

All of them are released immediately according to 30%, and 70% of them are released linearly according

to the weight value of nodes within 120-180 days.

Release rules:

0:00 (UTC+8) daily

1)Total number of on-chain entrusting/total number of on-chain entrusting = effective

2) Entrusting quantity, filter the delegate address of each node, and the address greater than or equal to the

effective delegate quantity is counted as 1.

3) Calculate the number of valid delegate addresses of each node.

4) The number of effective addresses of each node is sorted according to normal distribution

5) Sort the number of valid addresses for each node by a normal distribution, and use normal probability to determine the linear release days for each node (rounded) (120-180 days)

C.Deflationary mechanism：

Direct destruction of miner fees

五．Roadmap

A. June 2021:
Project launch

B. March 2022:
ICPlaza block brower release
ICT wallet release
Update ICPlaza website

ICT Wallet supports NFT minting, transfer

C. April 2022:
ICT wallet supports on-chain NFT auctions
ICPlaza testnet virtual machine release
ICT wallet Support node, delegate, vote

D. May 2022 :
ICPlaza mainnet release
ICPlaza Source release on Github

F. Q4 2022:
Distributed Storage mainnet release

G. Q2 2023:
Web3.0 SDK and API service interface mainnet released

Risk warning

ICPlaza project investment is a risky investment, and there may be market risk, operation risk, credit risk, management risk, policy risk, and other related risks in the investment process.

1. Venture capital gains come from the growth and operation of the project

ICPlaza doesn't promise any fixed returns, capital preservation, and minimum returns, and does not make any form of guarantee.

2. Loss caused by loss of the private key

To minimize this risk, purchasers must protect their electronic devices from unauthenticated access requests that pass through and access device content. The best way to store a private key safely is for the buyer to separate the private key into one or more locations for safe storage, and preferably not stored or exposed to work.

3. Risks related to judicial supervision

Blockchain technology has become the main object of supervision in every major country in the world. If regulatory bodies interfere or exert influence, the application of ICPlaza will lag.

4. Risk of lack of attention of ICPlaza application

The ICPlaza application may not be used by a large number of individuals or organizations, which means that the public is not interested enough to develop and develop these related distributed applications. Such a lack of interest may hurt ICPlaza or its related applications.

5. The risk of hacker theft

Hackers or other organizations or countries may attempt to interrupt the functions of the ICPlaza application or DEX in any way, including service attacks, malware attacks, or conformance attacks.

6. Risk of mining attacks

Just like other decentralized cryptographic tokens and cryptographic tokens, the blockchain used for ICPlaza applications is also vulnerable to mining attacks, such as double-flower attacks, high-power ratio attacks, "self-interest" mining attacks, and over-competitive attacks. Despite ICPlaza's efforts to improve the security of the system, the risk of mining attacks described above is real.

7. Risk of lack of maintenance or use

First of all, ICPlaza should not be regarded as an investment. Although ICPlaza may have some value after a certain period, this value may be very small if ICPlaza lacks maintenance or use. If this happens, the follow-up holders of ICPlaza may have few follow-up holders, which is not good for ICPlaza.

8. Existing risk of dissolution

There is such a possibility. Due to various reasons, including the fluctuation of the price of ICPlaza itself, the problems encountered in the application development of ICPlaza, the rupture of the business relationship, or the claim of intellectual property rights, the ICPlaza project may encounter a major blow or be directly disbanded at any time.

9. Risk of system failure

The ICPlaza network or services, including the ecosystem, maybe disrupted by numerous events, including natural disasters, equipment failures, downtime of network connections, loss of power, or even disruption of its services, such as disruptions caused by software viruses or unauthorized user attacks, some of which are beyond control. While the ICPlaza team will take measures to prevent malicious attacks on equipment or infrastructure critical to the maintenance of its ecosystem and other services, there can be no assurance that there will be no future cyberattacks, such as DDoS, or that any of the anticipated enhanced security measures of ICPlaza will be effective.

10. Other unpredictable risks

Cryptography token is a new and untested technology. In addition to the risks mentioned in this whitepaper, there are some risks not mentioned or anticipated by the ICPlaza team. Other risks may arise suddenly or in combinations of various risks already mentioned.