BAER CHAIN

BaerChain White Paper 1.2

The Pioneer of Global Games Public Chain

baerchain.com

baerchain@baerchain.net

Baer Chain

BaerChain Official

https://0.plus/BaerChainCN

Follow Us on WeChat

BAERCHAIN

THE PIONEER OF GLOBAL GAMES PUBLIC CHAIN

Contents

1 Summary

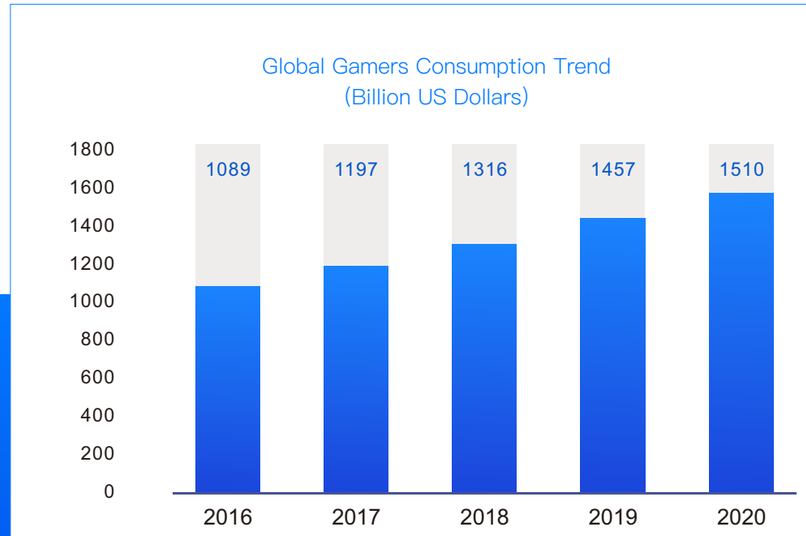
BAERCHAIN

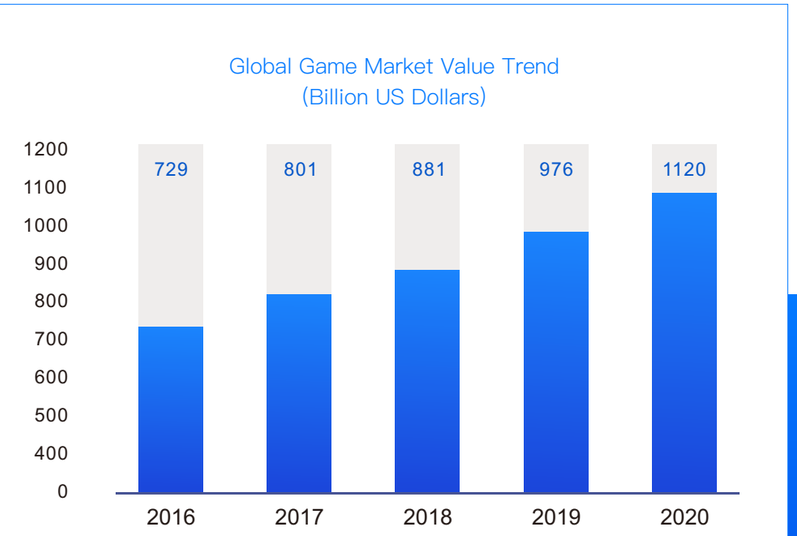
BaerChain is an online games ecological platform that is forged based on the blockchain technology, adopting distributed smart contracts. By using decentralized structure, it directly connects elements on the games ecological chain in an organic way, to realize the direct docking, losslessly circulating and secure storing of individual values.

Via the underlying games publich chain that is independently researched and developed by BaerChain team, the global game developers and game players are capable of converting values created by them to revenues owned by them, which can circulate within the game ecology in the form of BaerChain token, BRC. As the bearing of values, BRC not only circulates within the ecological system, but also pries the value ecologies outside online games, letting them participate in the values ecology cycle of BaerChain.

2 Background

2.1 Global Online Games Market Size





In the internet era, the online game industry is an enormous one. In 2016, 2.2 billion game players worldwide output a value of $ 108.9 billion. Among which, the virtual goods are the main income source, about $ 72.9 billion, accounting for 67% of the whole consumption in the online game market. With rapid development of smart phones market, the size of mobile game market grows continuously. In 2017, the total value of the global online games market reached to $ 119.7 billion, with a year-on-year growth of 10.7%, and consumption of virtual products increased to $ 80.1 billion. Asia is the biggest market of the global online game industry. In 2017, the output value of Asian market was $ 63.5 billion, making up 58% of the total value of the global market; while the mobile games made up 45%, about $ 28.5 billion.

Therefore, it is easy to tell that with continuous growth of mobile users, the online games world would attract more global players. The one who takes the summit of this industry will own valuable users throughout the whole world.

2.2 Development of Global Online Games Market

No matter the numbers of game industry values, players, developers or the numbers of operators and promoters, they will increase rapidly in the future. The critical indexes like game users' growth rate, retention rate and the datum rate that is willing to consume on games, will ascend fast along with the development of online games industry.

It is projected that in 2020, the total value of the global online games market would surpass $ 151 billion. Virtual products, advertising and guided consumption would continue to be the main income sources. According to some predictions, virtual products consumption would grow at fastest pace, with an annualized compound growth rate about 15.2%. Among which, 33% players would consume once per month and 25% players would consume once per week.

With the coming of 5G, more and more new types of and IPs of mobile games would surely attract more global players. It is predicted that in 2020, mobile games would make up more than half of the total output value.

2.3 Opportunities for Blockchain Games

Up till now, the asset value of tradable virtual items in games on Ethereum has reached CNY 1 billion. However, the blockchain technology development is still during the stage of infrastructure establishing, so the breakthroughs concerning speed, compatability and latency, etc., are critical elements. It is expected that along with the development and maturity of blockchain underlying applications, as well as the launch of base chains and federation chains, 2019 will be the outbreak period of blockchain games. Merely the trade size of game assets could reach CNY 50 billion, while in 2022 this number is estimated as CNY 200 billion.

3 BaerChain Introduction

3.1 To commemorate The Father of World Video Games

Ralph H. Baer (1922--2014) is an American inventor, engineer, and the pioneer of video games. He invented the first home video game which promotes the large scale development of the computer game industry. Thus, in 2004, he was honored with the American Medal of Technology and listed in the National Inventors Hall of Fame in April 2010. Ralph H. Baer was regarded as the "Father of Computer Game". In 2017 after Ralph H. Baer had past for three years, to commemorate the great pioneer of computer games, the project was named "BaerChain" to extend his achievements in the field and strive for a better future.

3.2 Issues of the Industry

Current Situation: numerous but non-flourishing

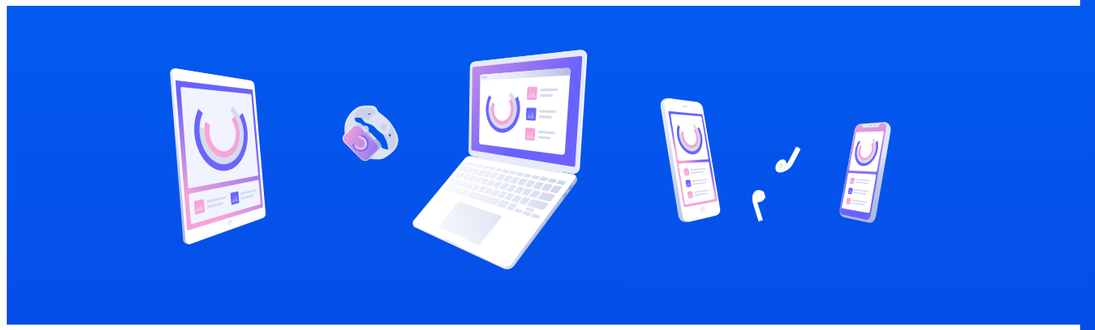
Developing traditional online games is a high-tech and composite engineering, which easily leads to the over concentration of resources and monopoly. Therefore, less than 1% tycoons are occupying more than 70% of market share nowadays, which results in problems like severe homogenization, innovationas are hard to come forward, vitality and the industry's self-evolving are deeply oppressed.

Development: centralized data

The most serious headache for middle- and small-size game developers is not making games, but selling games. The inputs on promoting and placing are usually more than that on development itself. Problems such as distribution channels being overly simplex and excessive commissioning by intermidiaries that have absolute discourse power lead to the all-the-time hidden rule of making noise rather making products, thus resulting in a vicious endless loop that players do not buy and products could not progress.

Player Values: Depreciation Risk

In traditional online games, players have limited right of using virtual assets but without the real ownership, which causes a situation that values created by players' behaviours from playing to top-up are taking risks like depreciation and even returning to zero. In this case, the buying power of buyers are not completely unleashed.



3.3 What is BaerChain

By developing an online-games underlying public chain, BaerChain is using blockchain technology to craft a blockchain games ecological platgform that can mitigate industrial problems aforementioned. On this platform, the nature of decentralization of blockchain is able to avoid the emerging of tycoon monopolying, as well as the phenomenon like intermediaries taking all the commission. While the value generators—between game developers and game players, there are going to be much purer and more complete value circulation interaction, thus promoting the whole onlie games industry prosper forward.

On the basis of BaerChain's complete support of technology architecture, game developers will save considerable costs regarding development and resources. They only need to focus on the development of games' core content and logics, making the whole ecology return to the fair competition of creativity, experience, technology and values, and having more diverse and abundant game applications.

Numerous players attracted by diverse and abundant game applications will never again be limited to the awkward situation of only creating values but not having the values. While on BaerChain, values generated

by behavriours like playing, charging and excessive consumption, will completely be attributed to players themselves and can be embodied as BRC to circulate efficiently.

The favourable value circulation mechanism makes game developers and players form a community of interests, as well as a favorable ecology which produces favourable community groups. In the community ecology built based on BaerChain' distinguished coordination mechanism, values circulate and cycle with high-efficiency in the form of BRC, which not only provides gas for the development and stability of community groups, but also plays as the best window for BaerChain ecology to interact with the outside world.

3.4 BaerChain: Vertical Area of Blockchain+Games

Previously, the online public chain in the online game industry mostly position to a wide range of and multiple application scenarios, the time for a block to confirm a transaction irreversible is between 1 sec and 60 mins. This speed could not meet requirements of frequent, high concurrent, and constant-timely-millisecond-process of traditional games. The main chain already used have issues regarding stability, flexibility and expensive resources.

The BaerChain team has years' experiences in games. It comes up with sound logic design and compatibility for blockchain underlying technology development and solutions to issues in blockchain game applications like high concurrency, dense calculation, anti-cheating and account security, etc. In addition, on the basis of consensus algorithm DPoS, BaerChain has updated & optimized with a unique advantageous consensus mechanism—SH-DPoS, which is with strong self-healing ability. In cases with malicious nodes, SH-DPoS could heal itself efficiently, improving the efficiency and security of generating blocks. Given various game scenarios, BaerChain implements TPS optimization from the bottom, accelerating the storing of static game resources together with distributed storage, and separates asset data of different frequencies and values in games by providing multiple chains, accessing to the special DCC accelerator. As a result, it can provide high-performance response support to complicated real-time games. In the future, the main chain of BaerChain can meet the requirements for operation processing of all the games from the first to the fourth tier.

Categories of Games that have different requirements on operation speed process:

First Class

Frequent, Highly Concurrent,Constant timely millisecond process

1. First Person Shooting (FPS) Games:Counter-Strike、Playerunknown's Battlegrounds, etc.;
2. Sports Games (SPG):Streetball, Pro Evolution Soccer, etc.;
3. Fighting Games (FTG): Virtual Fighter, The King Of Fighters、 Street Fighter, etc.;
4. Multiplayer Online Battele Arena (MOBA): League of Legends, DOTA, etc.;

Second Class

Frequent, Constant timely millisecond process

1. Action Games (ACT): Devil May Cry、Ares、Assassin's Creed, etc.;
2. Racing (RAC): Crazy Racing Kart-rider, Crazy Cars, RayCity, etc.;
3. Music Games (MUG): Audition、O2JAM、Taiko no Tatsujin, etc.;
4. Real-Time Strategy Games (RTS): Warcraft, Command & Conquer, Red Alert, Imperial Age, etc.;
5. Mega Multiplayer Online Role Playing Games (MMORPG): Fantasy Westward Journey, Perfect World, Jade Dynasty, etc.;

Third Class

Millisecond process

1. Adventuring Games (AVG): Jack The Punisher, Silent Hill, Ever17, etc.;
2. Puzzling Games (PUZ): Tetris, Puzzle Bobble, etc.;
3. Role Playing Games (RPG): Ever Quest, Aion Tower of Eternity, Guild Wars 2, etc.;
4. Table Games (TAB): Monopoly, Mahjong, Fight against Landlords, etc.;
5. Strategy Games (SLG): Disciples II: Dark Prophecy, Age of Wonders, Amadis, etc.;
6. Card Class Games (CCG)Legends of Three Kingdoms, Hearth Stone: Heroes Of Warcraft, Yu-Gi-Oh, etc.

Fourth Class

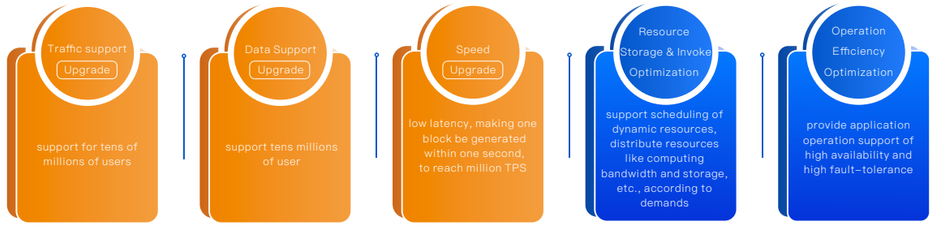
low frequency, millisecond process requirement

1. Simulation games (SIM): The Sims、RollerCoaster Tycoon、SimCityBuildIt

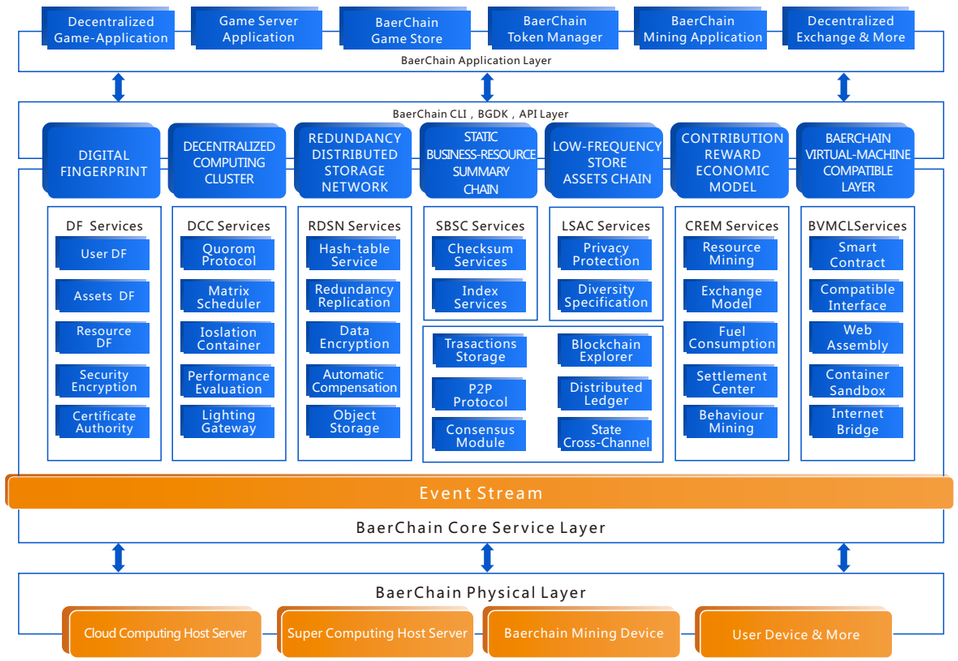
4 System Architecture

4.1 Outline：Deep Upgrade and Optimization

BaerChain is devoted to the development of high-performance public chain, of which the underlying technology is deeply optimized and upgraded towards BaerChain application scenarios. Here below is the major design outline



4.2 Overall Architecture Model

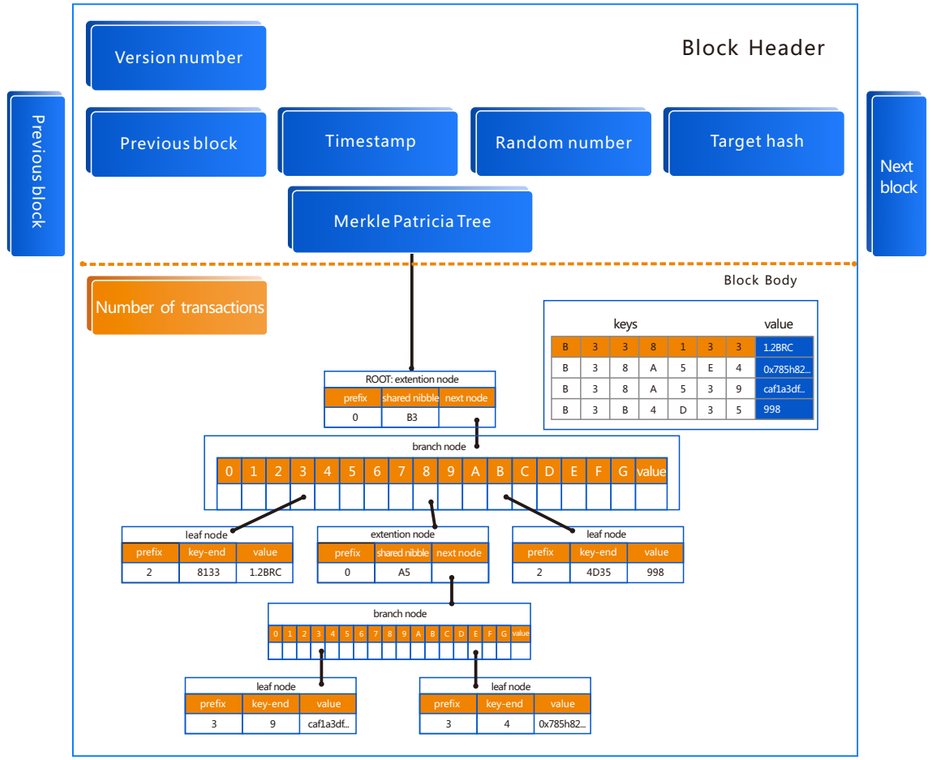


- SH-DPoS（Self-Healing DPoS）
- DF（Digital Fingerprint）
- DCC（Decentralized Computing Cluster）
- RDSN（Redundancy Distributed Storage Network）
- SBSC（Static Business-resource Summary Chain）
- LSAC（Low-frequency Store Assets Chain）
- CREM（Contribution Reward Economic Model）
- BVMC（Baerchain Virtual Machine Compatible-layer）
- BGDK(BaerChain Game Development Kit)
- DGapp(Decentralized Game-Application)
- GSA(Game Server Application)
- BGS(BaerChain Game Store)
- BTM(BaerChain Token-Manager)
- MAP(Mining-Application-Protocol)
- DGEx (Decentralized GameAssets Exchange)

5 Technology Scheme

5.1 SH-DPoS

As the underlying public chain, BaerChain has strict requirements for efficiency and security. Therefore, the enhanced SH-Healing DPoS consensus algorithm optimized by BaerChain Technical Team can increase the self-healing of DPoS algorithm. In the BaerChain technology scheme, the data structure is divided into header and body. The header includes the hash that links to the previous block. It assures the basis of chain data irreversible by using time stamp, nounce, body content and the hash of the previous block, etc. The body records the complete packed transaction information. It uses public prefix to compress the character string via Merkle-Patricia-Tree, for the purpose of improving inquiring efficiency and saving storage space. At the same time, this kind of structure assures that when malicious blocks appear, not only the blocks lablled as Cancer will be mitigated to guarantee the security of the whole public chain, but also the useful information in Cancer blocks will be abstracted to have them re-used, promoting the speed of generating blocks after meeting malicious blocks. Therefore, when meeting malicious blocks, the SH-DPoS is more efficient and securer than the traditional one, assuring the high-efficiency of error-correction, fast delivery and strict protection of values from the underlying logics.



5.2 DF

In the domestic online-games area, real name certification is a prerequisite for players and game developers to exchange values with each other. At the same time, because on the BaerChain games public chain, the values that players and developers create and get can far more exceed those in traditional online games, the ownership confirmation of value assets appears to be particularly important. In the core architecture of BaerChain, the first problem to be resolved is confirming ownership via digital fingerprints, and the mutual verification between LSAC and SBSC.

In the account management system of BaerChain, the personal identity of gamers, the identity of asset owners and resource owners will be verified respectively, using digital fingerprints.

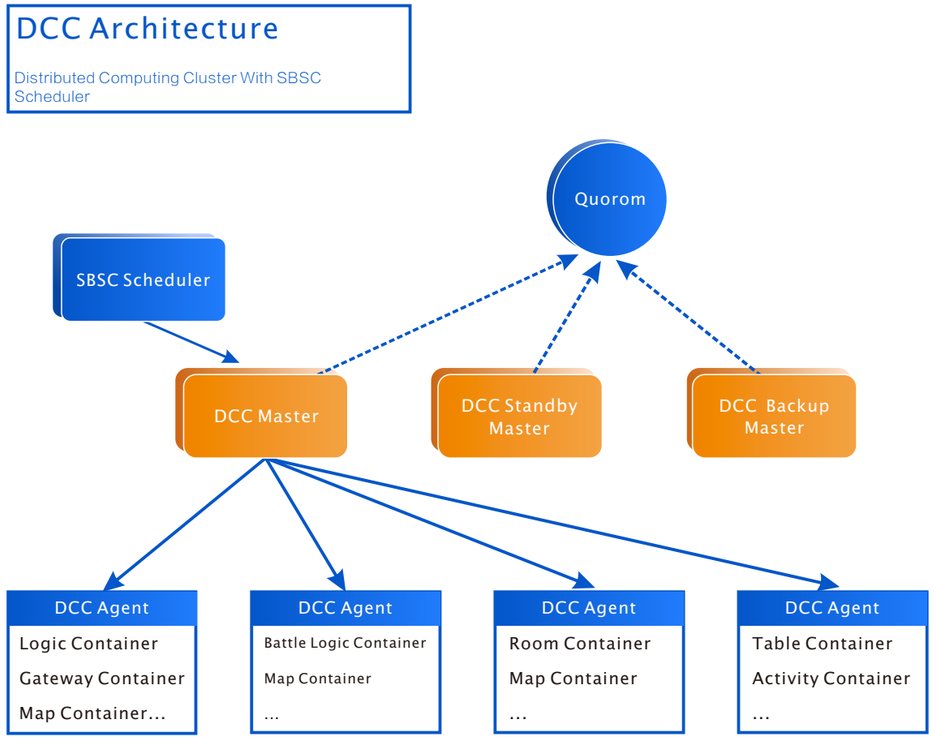
Personal identity information is verified by means of digital fingerprint signature and interacts with LSAC through BGDK. The authenticated identity information will be stored in LSAC. RDSN and DCC interacts with each other through LSAC, to read trusted identity information that does not need to be re-authenticated. Asset validation is also the process of ownership confirming, to ensure the safety of cross-game asset transactions. Resource verification ensures the ownership of game development and the permanence of profit sharing as well as revenues. All the authenticated digital fingerprints will be securely encrypted via the Certificate Authority Mechanism. At the same time when confirming ownership and accountability, to ensure the privacy security of individuals holding ownership and accountability.

The core of digital encryption is cryptography. Encryption is the process of converting plaintext into ciphertext by encryption algorithm and encryption key, while decryption is to restore ciphertext to plaintext by decryption algorithm and decryption key. In BaerChain, the security of keys does not need to be issued by a centralized trust authority, but by a decentralized certificate chain witness mechanism. The CREM economic model is used to generate impartial super nodes to issue and chain. This not only avoids the centralization, but also clears the authority and responsibility of issuing, to achieve sound order and high-efficiency.

In addition, an authority model is established in the account manager. The authority management mechanism is used to specify the permission content in the form of signature authorization. Usually the authority is bound to classifiable individuals or groups of individuals. BaerChain implements a declarative authority management system that allows accounts to control over who can do what when in a fine-grained way and with high level. Each account can be controlled by any weighted combination of other accounts and private keys. This mechanism creates a hierarchical privilege structure that can truly reflect the organizational situation of authorities in reality and makes it easier than ever for multiple users to control funds.

Multi-user control is the most important factor to improve security, which, if used correctly, can greatly eliminate the risk of being hacked. For instance, there are a lot of gold coin or equipment services among the current online games. In the past, users often need to give their account ID and password to the agent. Through the permission mapping, the game operation authority can be given to the agent by way of authorization, and the authorized account needs to use its own key to sign the operation. Here it does not include asset trading authorizations (ordinary assets in the game can be traded, but assets on the chain cannot be traded unauthozised), thereby improving the security of the account.

5.3 DCC



Now the speed of generating blocks within the industry is relatively heavily restricted by the consensus protocol. After the consensus optimization BaerChain can achieve the second-level of block generation through SH-DPoS consensus. Driven by technology, BaerChain has gone to the front end of the whole industry.

However, it is still far from enough for required interaction efficiency of the first-tier games. While the BaerChain continues to optimize consensus algorithms, it also develops a millisecond-response data interaction and processing system driven by DCC + RDSN, meeting the speed / efficiency requirements required to run large games on the chain, in the case of technology that can currently be achieved.

In order to solve the current industrial pain point-speed bottleneck of blockchain games, to establish industry standard and pursue millisecond-data-processing-response, and ensure the chain of all types of high concurrent games, after the in-depth research, BaerChain technical team proposed the Decentralized Computing Cluster (DCC) for the first time, i.e., in the form of distributed computing power clusters, efficiently complete the logical computing and interactive service in the running of games, to break through the existing public chain bottleneck that is unable to support the high frequency data interaction in games (including computing power / state storage / persistent storage, etc.).

Although the existing cloud resource services can meet the demand of high-frequency data interaction to a certain extent, they still face problems of highly centralized, and no guarantee of stability and security. The node program client with Quorom Protocol provided by BaerChain can allocate cloud computing resources efficiently and replace the original centralized service with distributed computing cluster, to achieve the co-existence of efficiency and security by means of coordinating decentralized resources. Quorom Protocol completes the decentralized ecological network operation with a two-layer structure, in which, the Master nodes matrix composed of Master Standby and Backup Master, ensures the high availability of resource-scheduling nodes; while the bandwidth resources and computing and the alike that are accessed by agent nodes matrix, finishes logical tasks of different resource types. In order to ensure the efficient operation of DCC and the quality & stability of each resource node, all nodes must meet the ecological access standards and obtain Admission Certification before they can be incorporated into the BaerChain DCC ecological network.

Step1: standard access license

Resource nodes must not only meet the requirements such as specific memory space, bandwidth space, CPU performance and geographic, etc., but also need to pay a certain amount of BRC as deposit, for nodes going online to provide services and gain revenues. The CRME will automatically deduct the deposit stored by the node when it is unable to provide stable resources or conduct malicious acts, and take it as the reward for the honest node that makes the contribution behaviors to eliminate the negative influences, in order to increase the self-discipline of each node;

Step2： minimalist node merging

Under the operation of Quorom Protocol smart contract based on DCC), the resource nodes that both meet the access criteria and are with Admission License will be incorporated into the BaerChain DCC ecological network. In order to complete the "minimal" integration on the technical level, BaerChain will provide the special BPP program port for each node. After running the program port, the distributed node servers around the globe can be integrated into the DCC ecological scheduling network in a one-click manner. After being successfully incorporated into the computing-scheduling system, the BRC bonuses will be obtained through the automated incentive mechanism.

Step3： Decentralized Self-Consistent Economic System Operation

In order to ensure the effective utilization of resources in DCC ecology, we do not adopt the traditional mode of fixed number of super-nodes and standby-nodes. Considering the expansion of the BaerChain ecological development and the adaptability of the entire DCC network, the DCC operates with a decentralized self-consistent economic system. With an automatic incentive mechanism and through spontaneous regulation in the market economy model, computing resource nodes can automatically adjust and control supply and demand relationship through CREM model, and adjust the number of nodes merged into the network, to realize an ecological system that resource scheduling & utilization and rewarding are self-consistent. The system is able to achieve the optimal distribution and application of resources, and meanwhile ensures the enthusiasm and stability of the node resource providers, assuring the permanent on-line computing power, efficient interaction with high-frequency data, as well as meeting the requirement of millisecond data-processing for games.

In the actual running process, via Performance Evaluation, DCC will evaluate the computing demand that is needed to respond, to determine the amount. Then, through the Matrix Scheduler, DCC will dynamically schedule node resources that match demands, such as memory, bandwidth, computational power, etc., to achieve both efficiency and stability;

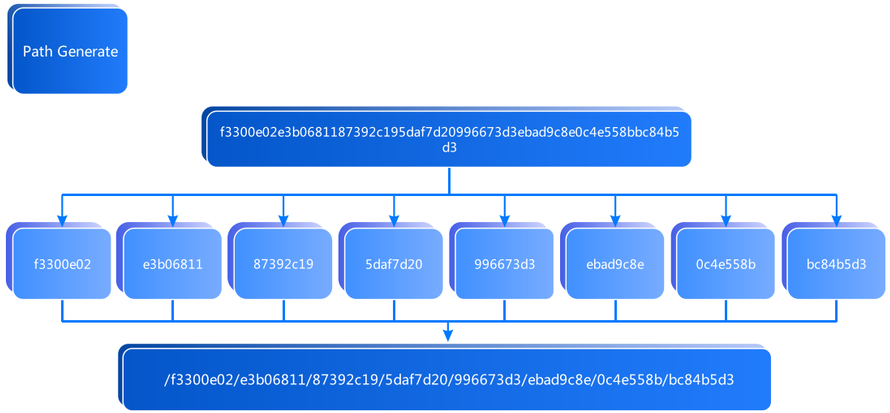
After allocating the required resources, DCC will obtain the corresponding service packets from the RDSN, and form the Isolation Container of a single service to draw a special computing range for the service program to be run, and generate a redundant mirror copy of the service program. A global multi-node resource backup is implemented for cross-validation. This not only ensures the stability and non-interference of the computing power required by the service, but also verifies the operation of master

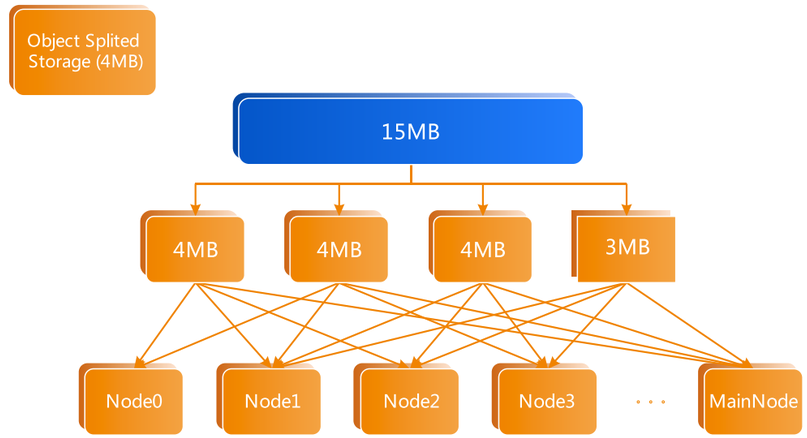
nodes, such as computing power confirmation, preventing data tampering and so forth, and making multiple protection and verification for the security and reliability of data.

The data generated by the server in Isolation Container will interact with clients through the Lightning Gateway. Lightning gateways can provide efficient and stable data exchange services, automatically match the nearest and fastest DCC nodes for users, so that they can respond rapidly to the delay sensitivity and high frequency businesses within the network.

In addition to solving the bottleneck of the speed in blockchain games industry, compared with the traditional centralized cloud server, DCC can also effectively eliminate the cheating behavior in games. For example, skills trigger, damage output, props and equipment explosion rate and other random numbers. Game developers and operators typically control the core values of games through a centralized server that operates in a dark box, which results in the playability, fairness and the ability to operate continually under the influence. Based on the distribution of smart contracts and multi-node resources, the DCC builds a solid defense wall for BaerChain ecology, assuring the fairness and playability of games on chain.

5.4 RDSN





The most significant value of blockchain games to players is the economic benefits based on the playability. Without the arbitrary control of central operators, blockchain games can really return value income such as characters, props, equipment, virtual assets and so on, to players. Therefore, players have a rigid need for permanent storage of game data. Meanwhile, in order to solve problems of efficient storage and effective transfer of large static data in the whole BaerChain ecological network, BaerChain technology team uses KAD algorithm, DHT, P2P network and TCP, etc., to construct a RDSN, i.e., Redundancy Distributed Storage Network.

Through RDSN, data storage will become efficient and reliable. For the game, the centralized data storage mode of traditional game service operator is avoided, so even if developers escape with money, players' value and assets will not lose, and the game itself can remain on the chain forever.

RDSN is a distributed version of storage protocol that utilizes Hash-table technology. In this network, large static data files such as downloading packages, patches and the alike will be divided into fixed size data blocks (each no larger than 4MB). The data is divided into blocks and stored in each resource node in the form of encryption through Data Encryption protocol, and the resource synchronization is carried out quickly with the aid of P2P network.

BAER CHAIN

BaerChain P2P network is mainly implemented by KAD algorithm, which is a distributed Hash-Table (DHT) technology and uses distributed Hash-table service on resource number and node number. In other words, the data is not indexed in the form of file name, but by using the uniqueness of Hash through Hash-table and file content summary (sha256) slicing. This will improve the search efficiency and realize fast and accurate data routing and locating in a distributed environment. In addition, all data is backed-up through the Redundancy Replication protocol, to avoid single node file damage, data loss, network failure and other factors affecting the integrity of data.

In the RDSN architecture, the core is the real data verification, efficient storage and schedule.

Verification mechanism

in order to ensure the validity of the data of each node and prevent the false node from reporting, the Automatic Compensation (automatically compensates the data with the Hash index to verify the authenticity of the data. That is, each node must complete the complete data feedback through the Hash digest. Verify success to incorporate into RDSN network.

Efficient storage and Allocation

According to the frequency of data allocation, RDSN divides the storage requirements into high frequency, intermediate frequency and low frequency, and optimizes the configuration for each type of different requirements:

- Equipped with special node "super miner" for high frequency demand, focusing on processing high frequency interactive data to ensure high efficiency and stability;

- Intermediate demand will deal with large amount of data exchange data through large capacity intelligent hardware. This kind of mining machine is an important resource node in the whole distributed network architecture, which is developed in the form of intelligent products, enabling the technological upgrading of smart products;

- The low frequency requirement will be stored redundant through the external distributed network to deal with the low frequency and no-frequency requirements. Due to the low utilization rate of this sort of data, it will be stored in the distributed external network to ensure the accidental call requirements, ensuring the permanent preservation of information.

When each node data is stored in a classified way, the communication process of authentication "handshake" is realized by using TCP protocol to establish connection with adjacent nodes and Automatic Compensation mechanism, which is used to determine the protocol version and software version, node IP, block height, etc. According to the frequency of data interaction in the network, the path of the data storage resource node is assigned and dynamically updated and optimized.

Therefore, compared with traditional cloud storage, in the RDSN network, data access is faster, more secure and more durable. Combined with the redundancy of BaerChain super nodes, it makes the game resources permanent online.

5.5 SBSC

The redundant storage of RDSN meets the requirement of efficiency and stability with DCC, while the security of the whole resource storage is accomplished by SBSC.

RDSN saves the data by redundancy. When managing and read data, it needs to deploy and grab the data through the file index system. As a result, it can be said that the security of indexing will be more stringent than that of data itself. By using hash index encryption, it can ensure the security without affecting the efficiency of accessing data itself and make efficient use of the storage resources.

After hash encryption for indexing, the security has been guaranteed to a large extent; however, there is still much more room for improvement of public chain development. Through the proprietary Static Businesss Resource Summary Chain, the hash-encrypted index is packaged into a block and saved on the chain, which will be more convenient and secure.

When game clients or servers need to retrieve the index data, the first step is to carry out chain validation through Checksum Services, using the unique structure of the blockchain to protect the security, reliability, non-tamper and traceability of information; meanwhile, via index services on the chain, which can not only locate the resources on the chain quickly, but also can play a significant protective role when interacting with the data off the chain

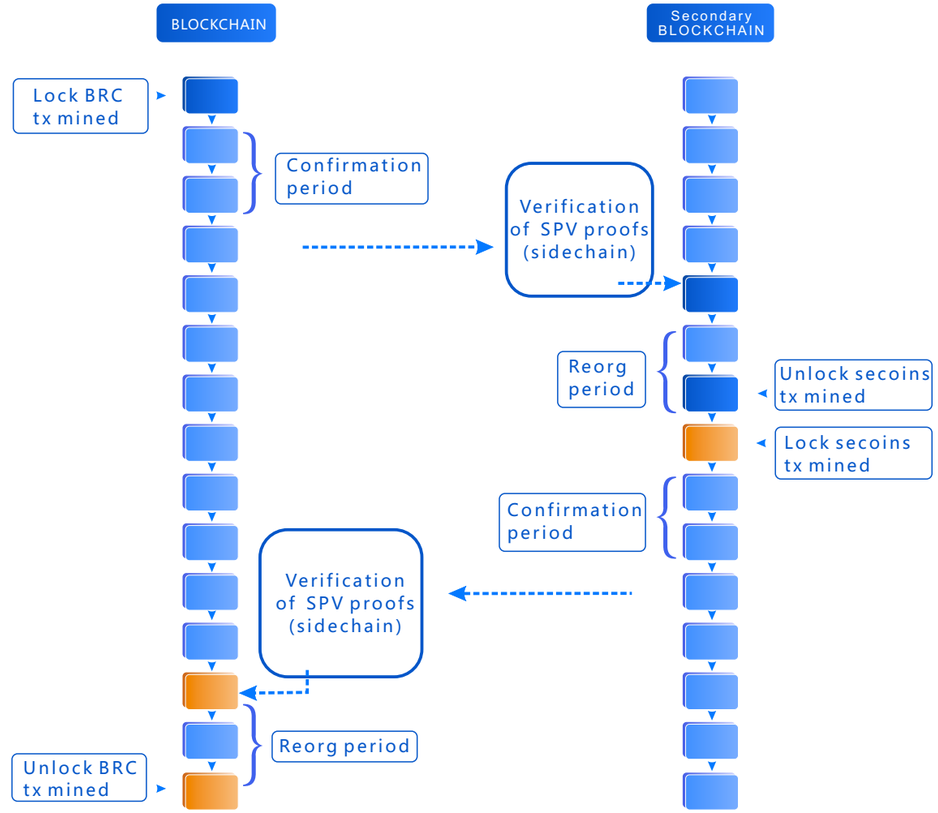
5.6 LSAC

Data of game itself, running logic and other resources through the SBSC collaboration between DCC and RDSN to ensure the three-aspect benign balance of efficiency, stability and security. While the in-game value token determined by developers and the value assets that are generated and acquired by games through playing, are special asset data of high value and low-allocating frequency. Such data will be stored independently through the Low-Frequency Store Assets Chain. In the transaction and circulation of assets, the premise of value flow is to confirm the ownership and security, and at the same time, the privacy of the asset holder is protected. As a result, LSAC, through the Privacy Protection protocol, can guarantee the traceability of value assets while protecting the privacy of asset owners from being disclosed.

In BaerChain, game developers can raise more resources by launching DAICO after meeting the relevant conditions. During which, LSAC's Diversity Specifications define token issuance standards in a flexible way, providing different certification criteria for assets that are limited to intra-game circulation, as well as assets that can be circulated throughout the chain. Therefore, it is much friendlier for game developers, who can freely choose resources to be chained, or merely get the core value resources chained, according to their own strength and development planning. In the early stages of development, game developers' chain cost can be reduced effectively, promote the industry's high participation and high activity.

BAER CHAIN

In the whole running process, resources, data and assets interact with each other; whilw LSAC and SBSC are two independent chains with different functions, and their interaction are in need of cross-chain technology. In BaerChain's cross-chain interaction, Simple Payment Verificaiton (SPV) is used to implement value-peg on the chain, and by verifying the information of block header and Merkle-Tree, to the smooth value interaction between chains is ensured.



5.7 CREM

As a node, all kinds of resource providers maintain the stable operation and value output of the whole ecology. In the framework of distributed node network, the status change of each individual node is required not to affect the efficiency of the whole network and the acquisition of resources. Therefore, not only through the technology to maintain the stability of the network, but also through the unique transaction model of CREM, for all kinds of resource contribution behavior, to have the corresponding reward acquisition behavior and feedback mechanism defined. Thus, from the point of view of resource provider, through the model of supply and demand of market economy, the ecology can allocate resources spontaneously, automatically and autonomously. Like this. When the node state changes, the network can respond automatically and adjust intelligently, so that the resource scheduling and distribution efficiency would remain stable and efficient.

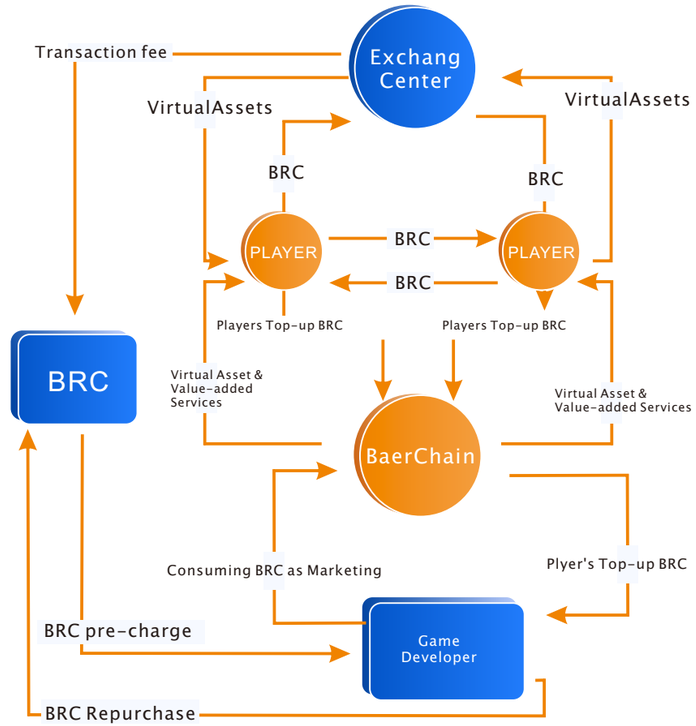
First, the Resource Mining protocol in the CREM layer will define the behavior of the providers of DCC and RDSN resources, and standardize the output of BRC through Mining Application Protocol.

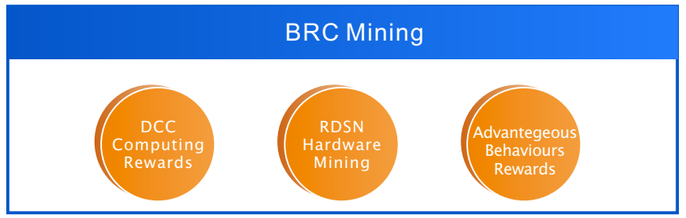
The framework of CREM's economic model is based on the theory of supply and demand in economics, which is regulated spontaneously with the help of the invisible hand. As a node of the network, the model of providing resources for profit is not static or invariable; because in the real world, due to the differences in geographical space, computational / access requirements, bandwidth requirements and so on, it will lead to a difference in the specific demand for related resources for each individual request. Only by dynamically responding to and allocating resources according to the actual demand for each request can we maximize the use of resources and achieve maximum efficiency and value. The most suitable and feasible scheme in a decentralized world is the automatic adjustment of the system caused by supply and demand.

Either DCC or RDSN, can be defined and dynamically adjusted in real time through CREM. In the case of a request with more demand than supply, the node that provides resources to the request will receive rewards above the MAP baseline, thus attracting more capable resource nodes to contribute; similarly, when a request with more supply than demand occurs, the node that provides resources for the request will receive rewards below the MAP baseline, leading the redundant resource nodes to choose to respond to the remaining requirements instead of repeatedly wasting the resource, and to provide the resource for the requirement as the redundant node leaves. And they are able to return to the MAP benchmark line, so that the resource-providing node tends to stabilize.

BaerChain, as the underlying public chain, carries the important task of making the whole ecology orderly operate. Therefore, as an independent module of CREM, the beneficial behavior mining individually defines the basic elements of the ecology—the individual behavior and motivation of participants. After the individual acts in favor of the whole ecological development and growth, he can obtain tokens through the MAP protocol as an incentive for contributions, and stimulate more beneficial behavior and contribution. Throughout the ecosystem, the BRC of fixed amount will be used as a carrier of value, circulating and adding value among all participants. So, when all the BRCs are mined, it means that all the value of the public chain is distributed through BRC to all participants in the ecology. Therefore, via beneficial behavior Mining, CREM can provide the value circulation criterion steadily for a long time, so that the whole ecosystem can grow steadily and effectively as a self-consistent economy.

The typical circulating scenarios include but are not limited to the following categories:





Fair Resource Valuation Formula

Store Resources

According to the storing time and the room taken by resources, only the cost of storing is consumed. Resources' costs are calculated based on backup rate. The unit price of storing cost is dynamic, which is decided by the federation members together.

- Formula 1: Storage Cost (SC) = Resource Size (RS) * Storage Unit Price (SUP) * Storing Time * Number of Backups (NB)

Network Resources

Network resources will only be billed by data. Data synchronized from nodes will pay fees for network resources; while general game players own certain game resources. According to P2P protocol, some game resources will be downloaded from gamers nodes. Network resources consumed by this part of content will not be billed. Unit price of network resources is also decided by federation members together.

- Network Costs (NC) = Traffic * Traffic Unit Price (TUP)

Computing Resources

Computing adopts computing value plus flexible computing. Given the fairness, game programs need extra mechanism to avoid plug-ins. Different computing strategies can be chosen for different games. Computing incorporates Speed, parallel speed and RAM. Flexible computing could settle computing peak.

- Computing Costs (CC) = Fixed Computing Unit Price (FCUP) * Time (T) + Elastic Computing Cost (ECC)
- Total Cost (TC) = Storage Costs (TC) + Network Costs (NC) + Computing Costs (CC)

DCC resources mining:

The resource providers join BaerChain by providing computing, and obtain BRC according to computing contributions.

Hardware mining

Users could become BaerChain's decentralized distributed storage network nodes via the special hardware equipment. Hardware chaining means mining, thus obtaining BRC as rewards.

Advantegeous Behavior Mining

The community rewards those who contribute to it with BRC. Any behaviours that are favorable to the community will be rewarded, including promoting, popularizing, bug locating and code contribution, etc.

Pre-Charge for Resource Use

Resources are valued in BRC. Before being used, certain BRC have to be charged. The tokens charged will be consumed after using resources, while the unconsumed resources will be re-purchased.

Game behavior

After the developer completes the development, uploads the game to the BaerChain public chain, and can choose to consume the BRC to carry on the marketing promotion; the player consumes the BRC to enjoy each kind of service of the game, the developer obtains the BRC. directly

Token Value Transfer

Accounts holding tokens can transfer between each other, for the sake of circulation.

Asset Exchange

Using tokens to exchange with game assets in the centralized exchange will strengthen the circulation between assets and tokens; at the same time, service fee is charged.

CREM Logic Operation

The prosperity of broader BaerChain ecology is based on the prosperity of the game public chain itself. Defined by the game itself, it is actually a behavior in which players gain positive energy and emotion through a series of experiential behaviors; whether it is to confront, fight monsters, level up or acquire equipment or to win, essentially it is an experience that with a sense of achievement that is obtained through players' participation in the entire process. In the traditional mode, the profit of developers and the experience of players are often in the state of zero-sum game. Therefore, either developers induce players to charge money through all kinds of means to obtain the profit, which actually weakens players' game experience, or the developer satisfies players' experience needs but could not meet its own—developers cannot constantly provide stable services for players, unable to improve their own, to provide more and better products or services; in fact, it is also not conducive to long-term player experience.

As the leader of the whole game industry, Nintendo has been insisting for many years on regarding the purest gameplay as its primary goal. As a result, when competitors are busy upgrading their hardware, using more sophisticated technics to develop games, and then shifting costs onto players, they are able to use even the simplest and cheapest cardboard to attract the reputation and enthusiastic participation from countless players around the world. In such cases, seemingly simple, low-yielding or even primitive games can generate sustained and stable long-term value.

What can be done via CREM is to assist game developers to return to the essence of games, that is, to return to value itself. It is hoped that there will be more great game companies like Nintendo on BaerChain—the game public chain.

By the Fuel Consumption mechanism set up in the CREM layer, any resource invocation will consume BRC as the Fuel to provide resources for provider. Through this mechanism, not only can the benefit game between developers and players be changed from destructive zero-sum game to a repetitive positive-sum game, but also it can effectively prevent the game operator from unilaterally withdrawing, avoiding cases like players want to continue the game but cannot carry on because the game is shut down by developers. Therefore, players can continue to play games on the chain by organizing autonomous committees and consuming Fuel. While the game itself is forever with the support of the chain and smart contracts, it is possible to automate and stabilize the operation without centralization.

Thus, it can also lead to a new model of BaerChain game operation in the blockchain era: game developers focus on developing much purer and high-quality games to meet the real game needs of players, without having to consider setting up all kinds of complex games and various charging ways to extract value from gamers; while players can have sound game experiences by consuming fuel that matches the experience value, without having to pay for all kinds of unnecessary premiums. Only with the most reasonable cost to obtain the purest experience, can the game industry can get out of the predicament of over-charging and develop and progress in the long run and constantly.

In the early stages of development, this model is more suitable for capable, ambitious but underfunded start-up game development teams. Therefore, the Singapore BaerChain Foundation has set up the Magic Seed fund that is specially for this kind of team and project--a special seed incubator at the ￥10 million level, to help more excellent games with high playability to land smoothly from zero to one, to drive the whole ecological benign and sustainable development on the BaerChain games public chain.

“Magic Seed” Fund Application Requirements:

- The team includes at least three members and core program development competencies as well as relevant project management experience;
- Submit the project white paper to the Foundation, describing the development concepts, team strengths and project features;
- Provide simple demo to prove team ability;
- At least a half-year project timeline needs to be submitted;

“Magical Seeds” Approval Process:

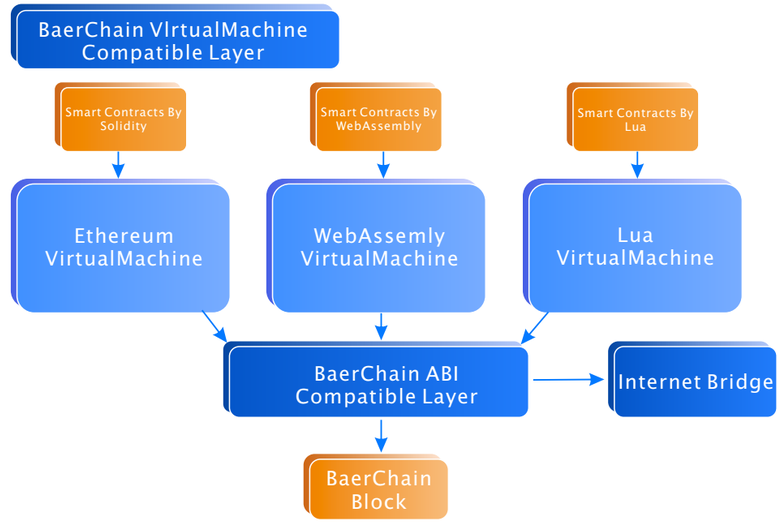
- Related applications will be chained for initial assessment, and the project investment committee is established through smart contracts automatically;
- Appoint the personnel who is responsible on both sides to communicate and carry on second examination manually;
- After being approved, there will be an online or offline communication between project team and the investment committee;
- The investment committee will discuss whether to give the term sheets after the communication;
- After both parties are determined, the due diligence will be conducted on the chain or on the spot, and the smart contract of seed funds will be signed;
- Delivery of seed funds and confirmation of project progress through smart contracts;
- The investment committee provides more implementation resources and support for the project, including, but not limited to, art support, strategy consult and technical support, etc.;
- According to the practical situation, the investment committee may open the project DAICO channel on the chain to help the project access to more resources.

DAICO

Although BaerChain game public chain supports DAICO, it will adopt strict audit mechanism, using ”Magic Seed” as the firewall to prevent the project team from issuing air coin to defraud users on the chain. Only after developers who have been approved and supported by the foundation making real contributing efforts and having hatched actually executable projects, can they be qualified to be chained through DAICO, via the Diversity Specification protocol of the LSAC;carry out the DAICO on the chain through the Dicersity Spercification protocol of the LSAC;

The combination of ”Magic Seed” and DAICO guarantees the interests of both sides from both angles of game developers and investors, and provides enough development energy, which will eventually become an important part of the healthy development of the ecology.

5.8 BVMC



Oracle machine is a bridge between everything in and out of the chain

In ancient times, due to the fact that people’s cognition of the world was at the initial stage, the accumulation of relevant knowledge made it impossible to find a reasonable explanation for things beyond their cognitive scope. Therefore, it is often expected that there is a divine oracle which can transform the incomprehensible external things and phenomena into the information that one can understand to guide one’s own actual judgment and behavior.

Similarly, in the world of blockchains, each chain itself is isolated from the outside world because of its nature of decentralization. Therefore, when the external information needs to interact with the blockchain, there is no direct way for the blockchain to obtain and understand the information outside the chain, especially in the coding of smart contracts, it is often encountered that the external constraints off the chain cannot be accurately defined, or due to the complexity and variability of the actual situation, the blockchain cannot obtain accurate and clear decisive information when in need, resulting in the correct execution failureof smart contracts.

Similarly, the external data source (Data Feed), as a third party, cannot guarantee the security and authenticity of data because the data sender may be a central participant. The blockchain does not understand or trust the external information, nor does it have a direct method to verify or trigger the conditions required of smart contracts.

Within the ecosystem of BaerChain, based on the fact that games are autonomously operating on the public chain, during a certain period, it is unable or unnecessary to be completely decentralized (e.g., payment by legal money, cross-platform gams interactions, etc.), according to the development of technology, as well as the external environment, etc. However, the external data generated need to interact with the smart contracts on BaerChain and then participate in the process of decentralizing. For example, when users need to pay for game props with legal money, BaerChain itself does not have a way to acquire the result whether the payment succeeds or fails. Now, BaerChain’s oracle machine bears the function of accessing to and examining information, and the results will be mapped to the smart contract. In other

words, the information is obtained by oracle machine and verified by signature, and then the verified data results are fed back to Turing's complete smart contract to ensure that the data cannot be tampered with, legitimate and unique.

Therefore, the oracle machine is the only way for smart contracts to interact with external data. The oracle provides the necessary conditions for the smart contract to run when the terms of the contract are met. These conditions can be any information related to the smart contract, such as real-time temperature, payment confirmation, price variation, random number services, etc. Without sufficient data sources to trigger and run smart contracts, the scope and effectiveness of smart contracts will be compromised greatly.

In addition, the technical team has fully considered the diversified scenarios of the BaerChain games ecology, providing various smart contract development schemes for different game developers, using the BaerChain Virtual Machine Compatibility Layer to realize the interaction between unified and multiplex block data. BVMC supports various scripts and external virtual machines to realize the compatibility of different virtual machines, and runs in a modular manner through the compatible interface. Any development language or virtual, as long as the API provided by BaerChain is connected to the BaerChain and verified by signature, its development can be integrated into BaerChain. As a result, game developers can focus on the development of the game itself without having to specialize in new languages associated with blockchain development, instead, they can use development languages they master and excel in. There is also no need to migrate between different languages.

The compatibility layer supports the data of JSON format and binary format. JSON-format is the most commonly used data format at present. It is mostly used for docking many languages and has strong readability. The binary format of the data can be efficiently stored and run.

The current plans to include compatible virtual machines include Ethereum Virtual Machine, eWasm and LUA, which is often used in traditional game development.

WebAssembly(WASM)

WASM is the binary instruction format of stack-based virtual machine. WASM is designed as a portable target for high-level languages such as compilable C / C++ / Rust/Go and supports the deployment of client and server applications on Web. Ethereum developes have begun to adapt WASM to provide appropriate sandboxes and use the Ethereum WASM definition. This method can also be used in BaerChain integration.

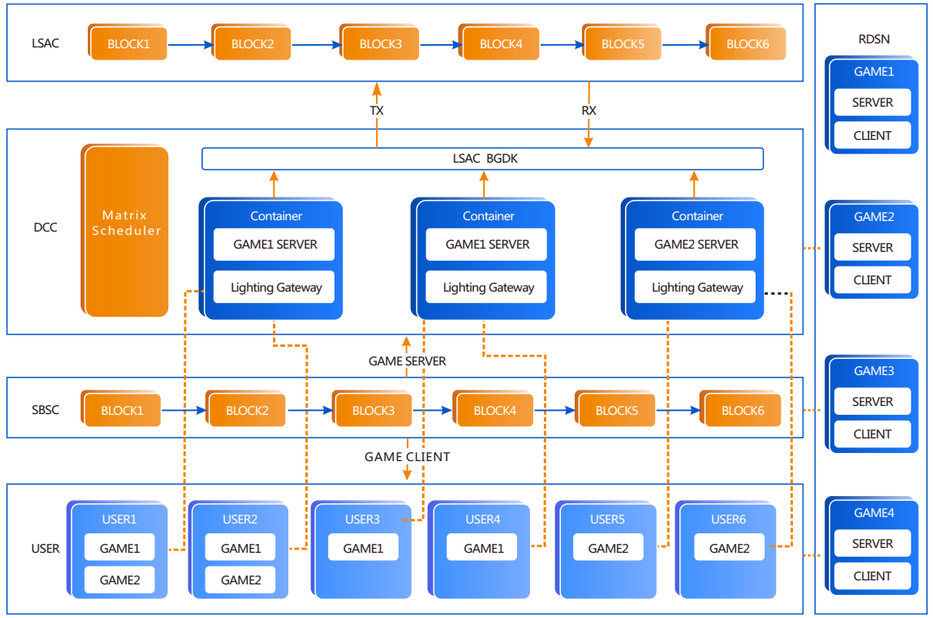
Ethernet virtual machine (EVM)

Ethereum virtual machine has been used in most existing smart contracts, which can be run in an internal Container Sandbox, which could interact with the BaerChain application with only a small amount of adaptations. As a result, games supported by Ethereum can run directly on BaerChain.

LUA Virtual Machine

LUA is a common language for game development. Its size is very small, usually embedded in the program as static links, when publishing applications, it does not need any runtime support.

5.9 Business Structure



Games Chaining:

relying on dual-chain of LSAC and SBSC, assets and game resources will both be chained By RDSN providing distributed storage of resources and DDC providing computing that game operations require, any types of games are on the chain forever.

Players download:

when obtaining the hash index of game resources baesd on SBSC and downloading, users can download the correct game resource kit to local nodes via RDSN.

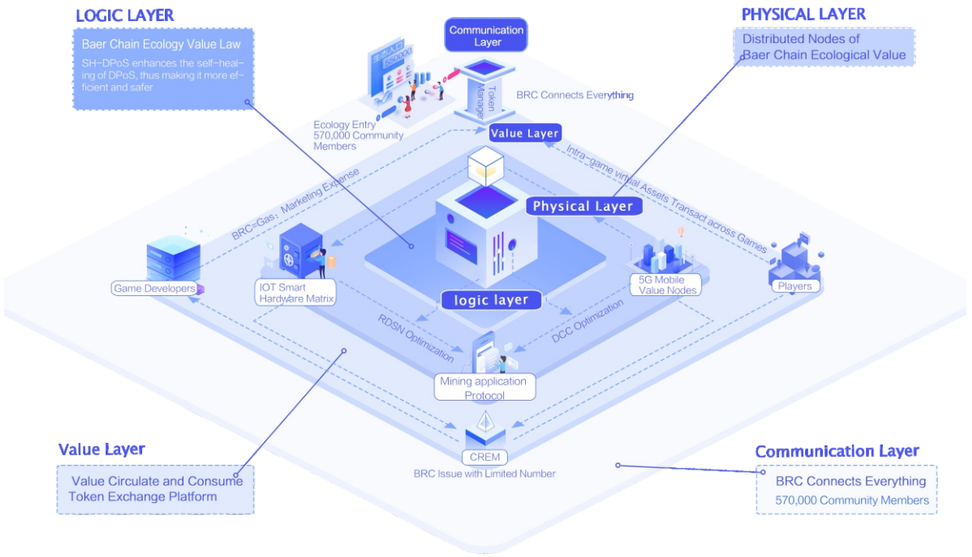
Game Operation:

when players are operating games, DCC schedules procedures according to computing capability and arrange computing procedure of game server in a containerized way.

Asset Chaining:

User can match the nearest and fastest DCC nodes via Lightening Gateway, realizing smooth game experiences with super low latency. During playing games, DCC communicates with LSAC via BGDK, writing users' asset data into blocks real-time, securing user assets.

6 BaerChain Ecology Overall Architecture



The games public chain crafted by BaerChain organically integrates the logic layer, physical layer and value layer, then builds the distinguished value closed-loop and ecology matrix system; besides, it creates an entrance to BaerChain ecological matrix via the communication layer that is formed in the token manager, which has the capability to limitlessly extend.

Founding Rules of BaerChain Ecology Value (Logic Layer)

The strengthened SH-DPoS optimized by BaerChain technology team could increase the self-healing ability, assuring the high-efficiency of error-correction, fast deliver and strict protection of values, from the underlying logic. As the core business of BaerChain business model, the technological advantages of the logic layer is the key and basis for BaerChain's differentiation competition.

BaerChain ecological value generation (physical layer)

The MAP value system developed by BaerChain technology team based on the founding rules are reflected on distributed nodes in the real world. The physical layer, as the bearing layer of linking technology to commerce, is the critical business in the reality layer of BaerChain. It not only guarantees the BaerChain games public chain to ground step by step as the grounding and realization of distributed nodes, but also an important tool that effectively maintains the binary whole relationship of customer/miner in the ecology, which makes them become the productive consumers representing the new shape of world's economy.

Gain & Consumption of BaerChain Ecology Value （Value Layer)

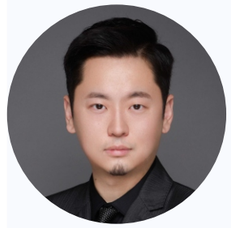
Rules shape the world. The physical layer generates the source of life—BRC that is fixed regarding the quantity, through the CREM model. BRC attracts more and more game developers and players to settle in BaerChain ecology: developers could use BRC as the gas for product marketing, obtaining vast player data on the chain; while the virtual assets that are created by players could also circulate in the form of BRC. The interactions and behaviours between them could generate considerable values, which are beared by BRC; furthermore, via the BaerChain token exchange system, the BRC could constantly circulate and proliferate, forming the ecology cycle system that is at the most basis of BaerChain world.

Value Extension of BaerChain Ecology Matrix (Communication Level)

BaerChain token manager, as the entrance to the ecology, simultaneously introduces more tertiary values into the ecological system, thus having more than 450,000 ecology users join and expand; which makes the ecology cycle system could eventually make the internal and external trigonometry of the ecology constantly and stably expand. Along with the expansion of the ecology, the BRC that is fixed in quantity will continually increase in values, facilitating the continuous prosperity and development of the ecological system; in addition, it makes all the things on and off the chain interact in an organized way, resisting the increase of entropy, and eventually, the ecology becomes a dissipative structure that breaks the sealing.

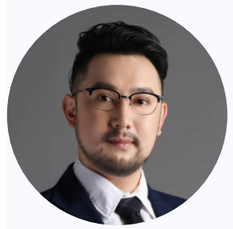
7 BaerChain Team

7.1 Core Team



Founder and CEO — Vincent

Master of business finance from UCLA. He once worked in the headquarters of American Amazon, a global e-commerce giant to take charge of operation of network and e-commerce. In 2015, he returned back to China to join in the international investment bank Morgan Stanley to take charge of enterprise asset management and information consultation and provide acquisition and overseas listing services to many large-scale Chinese enterprises. And he once participated in projects like listing of Eagle Investment and ZTO Express. He got involve BTC and ETH earlier and has understanding of his own to digital currency and block chain technology. In 2017, he established Baer Tech in Hong Kong to be devoted to application of block chain technology.



Founder, Chief Structure Officer – A-Ray

Graduated from Hong kong University of Science and Technology, later, studied in Massachusetts Institute of Technology with the major of computer science and the minor of fine arts and visual arts. Proficient in C#, Objective-C and JAVA, have more than 10 years working experience in game creation and development. Worked in Hong kong Run Up Game and Korean NEOWIZ as senior executives successively, and guided department members to finish prototype design and creation of game characters. In 2015, established GogiiGames in Hong kong and developed the game Xijingzhi independently, which was purchased by Tencent later. In 2016,

BaerChain Co-Founder & CTO, Scott Bingley

Bachelor of Information Software Engineering, University of Chicago,Master of Software Engineering, University of Boston. He owns 15 years of software development experience, used to work in Cisco and Motorola as the chief technology engineer, participating in leading the systematic framework design, research and development of multiple major projects. Scott has significant mathematical, logical and data analyzing abilities, and grasps software development technology of state-of —art around the globe. He was the senior researcher of Blockchain Research Laboratories in Oxford and IBM, and has deeply studied cryptography and distributed storage, etc.

Distributed Ledger Engineer – James Leo

Former engineer of Cisco, fan of block chain technology, and maintainer member of Deviceone system framework. Based on Hyperledger, took charge of safety, expandability and privacy of distributed ledgers.

Full Stack Developer – Ziv

Majored in computer in University of California, have rich experience in research and development of software technology, be familiar with front-end and back-end development, interfacial design, database, mobile client, Single Page Application, Web Socket and HTML5/CSS3.

Chief Marketing Officer – Jackey

Graduated from Hongkong University of Science and Technology, well-known cartoon creator and producer of game roles. Founder of the IP incubation system of PAWS anime. Obtained investment of several domestic capital institutions including IQIYI, Jiuxuancheng and Pegasus fund, have representative works like Quebec pull, DreamS, Junior Three Kingdoms and Legends of the Three Kingdoms. Have favorable commercial partner resources and operating experience in Asia.

7.2 Investment organization and Advisory Team

Investment Bodies

东方资本 EASTERN CAPITAL
币本资本 BIBEN CAPITAL
中商政和 zhongshangzhenghe
CRYPTO CAPITAL 加密资本
中科创同 zhongkechuangtong
链一科技 区块链第一门户

strategic Partners

CAPCOM
NCSOFT
51.com 真人轮对玩游戏
SEGA
NEOWIZ
墨麟集团 Mokylin Group
西山居
Mnet
namco
太平洋集團 Pacific Group

Strategic Media Partners

金色财经 | 布洛克科技 WWW.BLOCK360.PRO | 耳朵财经 | 节点财经 记录区块链每一个节点 | Finance 透视财经 | btc123.com

Advisory Team

Li Junshan

Chairman of National Blockchain Industrial Alliance
Director of National Blockchain Accreditation Centre

Shang Xiaopeng

Bosha Technology, CEO
China Shahe Blockchain Research Centre, Deputy Director

Zhang Qiguang

Reputated Entrepreneur in Taiwan
Board Director of Pacific Group of Taiwan

Zhang Xiaosong

Famous scholars in information technology and security. Director of Cyberspace Security Research Center of University of Electronic Science and Technology China, Special Professor of Yangtze River Scholars, and one of Top Ten Talents of China's National Cyberspace Security in 2017. He also served as the head of National Strategic Planning Group of Cyberspace Security of the Ministry of Education, the member of the Ministry of Defense of the Ministry of Science and Technology of the Ministry of Education, and the member of the expert committee of the Center for Network Security Innovation of National Defense Science, Technology and Industry.

Wang Xin

PhD of Computer Sicence, University of Edinburgh, Associate Professor, Master Instructor. Experts of Technology Talents Tank and Academic Leader of Sichuan Province. Doctor Wang's research is mainly focused on big data analysis, social network analysis, internet sentiment analysis, blockchain bottom framework design and realization, etc. His work "Social Network Analysis Method Based on Structural Matching" and "A Data Base Management System That Supports Boolean Expression" are patented.

Vivian

PhD of Economics, UC Berkeley, Fulbright Scholar. Over ten years of experiences in law, finance and technology. Worked as the then-youngest senior management personnel in Citibank.

Cui Mingchun

Vice —chairman of the management council of the Korean game industry. Devote to development of innovation applications in the Korean game industry;

Naseem Naqvi

Associate professor from California Institute of Technology, co-founder of BBA, and research principal.

Joichi.Ito

Joichi Ito. Ph.D of MIT, principal of media big data lab.

Nathan

Former chief risk officer of JP Morgan, have rich international experience in rick management strategy, planning, and management policy and procedure planning.

8 BRC Token Issue Plan

To promote the business application value of BaerChain, the standard amount of BRC (Baer Chain) to be issued based on ERC-20 is 58 million. During the production of creation block, 50 percen of the total number will be created, i.e., 29 million. The remained 50% will be awarded to those who make positive contributions to the BaerChain community as incentives.

Distribution Plan is as follow

Ratio	Distribution receiver	Amount	Management Details
10%	Founding Team	58,000,000	As rewards to the founding team. Release 50% in the first year and 25% each quarter during the following year.
10%	Angel Foundation	58,000,000	Angel investment Release 50% in the first year and 25% each quarter during the following year.
30%	Private Equity	174,000,000	Building of technological development team, and operation of global business market; commences at the next month; 20% is released each month, finishes in five months.
50%	Community Incentives	290,000,000	Maintenance of community, incentives to ecology contribution

9 BaerChain Foundation

9.1 BaerChain Overview

BaerChain Foundation (hereafter known as the Foundation) was established in April 2018 in Singapore. The Foundation is dedicated to the advocacy and promotion of BaerChain development, construction, managerial transparency, and promoting the security and harmonious development of open-source ecological society. BaerChain assures the security and reliability of accounts and assets via means like blockchain consensus, crypto wallet, unchangeable, etc. During the initial period of establishment, the decision committee is consisted of Chairman, founding team, super ambassadors and cornerstone institution. The term of each council member is two years.

Other than servicing and facilitating the BaerChain project itself, BaerChain is also dedicated to using the values generated from the project to supporting community members' growth. The Foundation will allot CNY 5,000,000 to back the project with funds, of which the amount varies from CNY 200,000 to CNY 1,000,000, in order to assist developers grow fast; meanwhile, the foundation has set a ten million special seed hatching funds named Magic Seed, for aiding the founding team to ground ideas rapidly, thus making games grow fast after being chained.

The foundation will strongly support and invest in the BaeChain ecology constantly, for the purpose of driving the leap-forward development of each node from the upper to the lower reach, from technology to application, making BaerChain expand from single-point prosperity of BaerChain games public chain to macrocosm prosperity of the whole BaerChain ecological recycle system.

9.2 Decision Committee

BaerChain Foundation sets up a decision committee, which has to keep high standard of integrity and moral code of business conduct, abide by relevant laws and regulations as well as industrial self-discipline principles, provide transparent financial management. BaerChain will invite a tertiary auditory institution to audit and evaluate the funds use, cost & expense and profit distribution, etc. The function of the decision committee includes: appoint and dismiss executives, as well as directors of other functional departments; make important decisions, call emergency meetings, etc. It is equivalent to a board of directors in terms of responsibilities, which has power of pers The purpose of Public Relations Committee is to serve the BaerChain Foundation and global communities, be responsible of laws, legal affairs, technology & intellectual property (IP) rights, open-source programs, brand promotion and global strategic alliances, etc.onnel appointment and dismissal.

9.3 Executives

Executives, selected by the decision committee, are responsible for the daily operation & management, coordination of each subordinated committes, hosting the decision committee meetings, etc. Executives debrief to the decision committee regularly, whose responsibility is equivalent to a company's CEO, whose appointment is decided by the decision committee.

9.4 PR Committee

The purpose of Public Relations Committee is to serve the BaerChain Foundation and global communities, be responsible of laws, legal affairs, technology & intellectual property (IP) rights, open-source programs, brand promotion and global strategic alliances, etc.

10 BaerChainTimeline

2017,project launch period

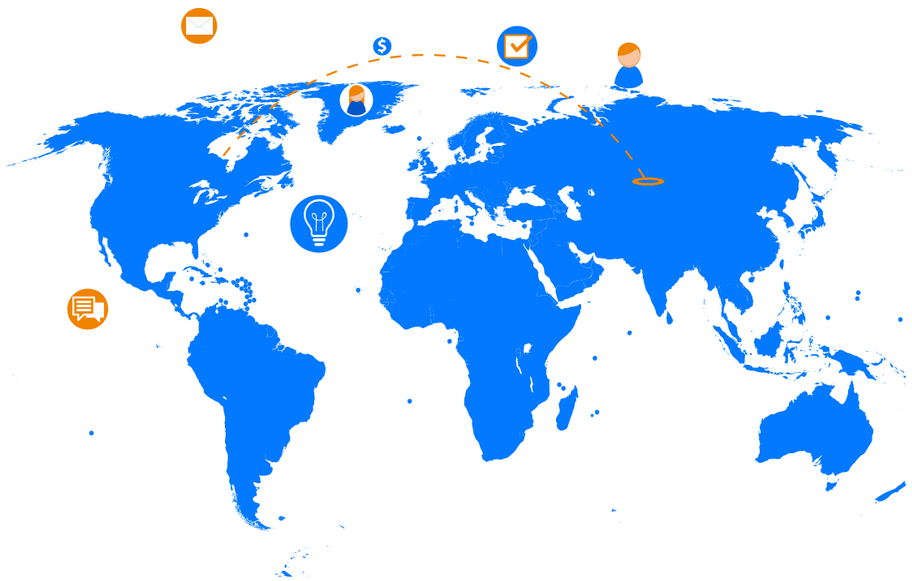
- May — Founding Team Forms, Project commences
- Dec. — Team Founded, Prototype Finishes

2018,Baer Chain Ecology Construction

- April — Baer Chain Foundation establishes in Singapore
- May — Baer Chain White Paper 1.0 releases
- June — Chaining Tokens & Token Manager Releases
- Aug. — An App (game) of Token Manager Launches, Realizing Playing is Mining
- Sept. — White Paper 1.2 Releases
- Oct. — Distributed Node programs launches
Game with New Economy Releases
BRC listed on one of TOP 3 Exchanges
Baer Chain launch BRC on the global mainstream cryptocurrency exchange,
- Nov. — Distributed Node Client MAP System Launches;
Distributed Node Hardware Launches;
- Dec. — Baer Chain Token Manager Succeeds in Storing All the Mainstream Digital Currencies

2019, Baer Chain Ecology Value Merge

- Janu. — BRC Listed on More Exchanges among Global TOP 3
- Febr. — Open Mutual Transferreing among All mainstream Cryptos in Baer Chain Token Manager
- April-June — BaerChain SDK Port Development Finishes
Global Game Developers Alliance Launches
- July-Sept. — Baer Chain Main Network Test and Release
- Oct.-Dec. — Blockchain Games Release



BaerChain Vision

Dedicated to making outstanding technological contributions to the blockchain application of global online game industry

BaerChain Vision

To make technological revolution bring about more values to the online game industry

11 Risks Statement

11.1 Transaction Security

BaerChain Foundation believes: during the development, maintenance and operation of BaerChain, there are various risks, among which lots of them are beyond the control of BaerChain Foundation. Everyone engaged in BRC (BaerChain) token transactions shall read, understand and consider the below risks carefully, and decide whether to engage in the trasactions of tokens seriously. If you participate in BRC (BaerChain) transactions, you are regarded as knowing and accepting the risks as demonstrated below:

Legal, policy and regulation risks

BaerChain is supervised and regulated by multiple different organisations around the globe,BRC is possibly going to be restricted by their requirements or actions,including but not limited to: restrictions on the use of digital currencies, e.g.,the functions and repurchase of BRC in the future could possibly be slowed down or restricted.Token buyers must conduct the due diligence by themselves, assuring that they abide by the relevant laws that concerns encrypted currencies, taxes, and bonds in the region, as well as other regulation laws.

Safety Risks

The funds raised during the Angel or PE roundare not insured, If they get lost or devalued, buyers are likely going to get no assists from any personal or public insurances.

Risk of Unauthorized BRC Claim

Anyone that obtains the login–in email addresses or account name of BRC buyers through decryption or crack of passwords, is able to maliciously claim the BRC purchased during this public issuing.Therefore, BRC that are purchased during this public release could by wrongly sent to anyone, and this kind of false sending is irrevocable and irreversible. Each purchaser shall maintain the security of the login–in account via the following means: use highly secure password, do not open or reply any fraud mails, keep the secrets and personal information highly confidential.

Technology Risks

BaerChain is still in the stage of development, the BRC seller may face technological difficulties that are unpredictable or unresolvable, due to the technological complexity of BaerChain bottom public chain development.Therefore, BaerChain development could possibly fail or terminate at anytime for any reasons.

Source Code Vulnerability Risk

No one can guarantee the source codes of BaerChain are completely unflawed. Codes may have some flaws, errors, defects or bugs. They may harm the availability, stability or safety of BaerChain, and bring negative impacts on the value of BRC.Opening of source code is based on transparency, to promote the appraise and problem–solving of codes, from the community.

Liquidity Risk

BRC is not a currency issued by any people, entities, central banks, nations, supernational or quasi–national organisations, nor is supported by any hard assets or other credits. The circulation and transaction of BRC on the market are not responsibilities or persuits of the seller. Transactions of BRC are merely based on the consensus among all parts of the market. No one has the obligation of transferring or purchasing BRC from the BRC owners, nor does any one can guarantee the circulation or market price of

BRC at any time, do any extent.

Price Fluctuation Risk

If being exchanged on the open market, usually the market prices of encrypted currencies flucate drastically. Sharp change of price happens a lot during a short period. This kind of fluctuation is possibly caused by market powers (including speculative trading), regulating policies changes,technology innovation, accessibility of exchange platform and other objective matters, which also reflects the change of supply and demand balance. BRC exchange price risks shall be taken by exchangers themselves.

Risk of Insufficent Information Disclosure

Up till the date when this White Paper is released,BaerChain is still in development. Its philosophy, consensus mechanism, algorithm, codes and other technologies as well as parameters are likely to upgrade and change often. Although this White Paper includes certain information of BaerChain, it is not absolutely complete; besides, the BRC seller may adjust and upgrade these information untimed due to certain reasons. The seller is not capable of, nor has the obligation of informing the participants every detail in the development (including the progess, expect timestones, whether push off or not); therefore, participants will not be necessarily informed with information by the BaerChain. Insufficient information disclosure is inevitable and reasonable.

11.2 Disclaimer

This White Paper does not consist of a purchase invitation at any so-called illegal jurisdictions. All or part of the White Paper is not, nor is supposed to be considered as any forms of legal, financial, tax or other professional advices. Before you make decisions, you should seek independent and professional suggestions, to decide whether to purchase, sell or accept any BRC. You need to be responsible for any evaluations, appraises and decisions of BRC purchase, sell and acceptance. BaerChain will not force anyone to accept BRC. In the maximum scope permitted by law, BRC will not assume any responsibilities caused by negative impacts or results, that are generated because of BRC.

BAERCHAIN