RRC

RECYCLING REGENERATION CHAIN

White Paper

RRNC Team

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Menu

1) Abstract 3
   1. What will RRNC do？ 3
   2. Why RRNC？ 3
2) Brief Introduction 4
   1. Market environment analysis 4
   2. Our vision 5
   3. Ecosystem of RRNC 5
3) Product Structure 6
   1. Computing Supply-Side Platform (CSSP) 6
   2. RRChain 11
   3. Recycling Regeneration MapReduce (RRMR) 12
   4. Computing Demand-Side Platform (CDSP) 13
4) Commercial Value of RRNC at different stages 13
5) Roadmap 14
6) Generate rules of RRTokens 16
7) Our team 16

1) Abstract

1. What will RRNC do?

The mission and goal of RRNC is to build a blockchain-based decentralized computing network that collects and makes the most use of the unused computing power of personal computers and smart terminals.

The overall program will be divided into 3 steps.

Step 1: Build ecosystem

Establishing public chains and issuing RRTokens to collect idle computing power of global personal terminals (computers, mobile phones) by providing users with easy-to-use mining tools, which allow users to mine through browsers, clients, and etc. and get RRTokens easily.

Step 2: Create circulation environment

By using RRTokens as leverage to create the consumption circulation environment, different scenes of consumption, such as video sites, news, e-commerce and etc. can be integrated into our economic system, thus facilitating people using RRTokens to consume.

Step 3: Establish distributed computing network to increase investment value

Once global distributed computing network is constructed by gathering residual computing power of personal terminals, those power can be used to perform commercial computing tasks, which brings new commerical value to RRNC economic system.

2. Why RRNC?

1) Technical strength

Executive members of RRNC team have more than 10 years of experience in average working in Internet.

The core founders include product experts from traditional Internet companies such as Alibaba, 360, and Sina, as well as algorithm experts from Bitland. We are a complex technical team.

2) Market development capability

RRNC also has several core members who have more than 10 years of experience in Internet marketing and promotion. They are experts on various marketing methods, including website alliance promotion, social media marketing, and public relations. Their strong market development capabilities will swiftly bring products to the market to acquire a large number of users.

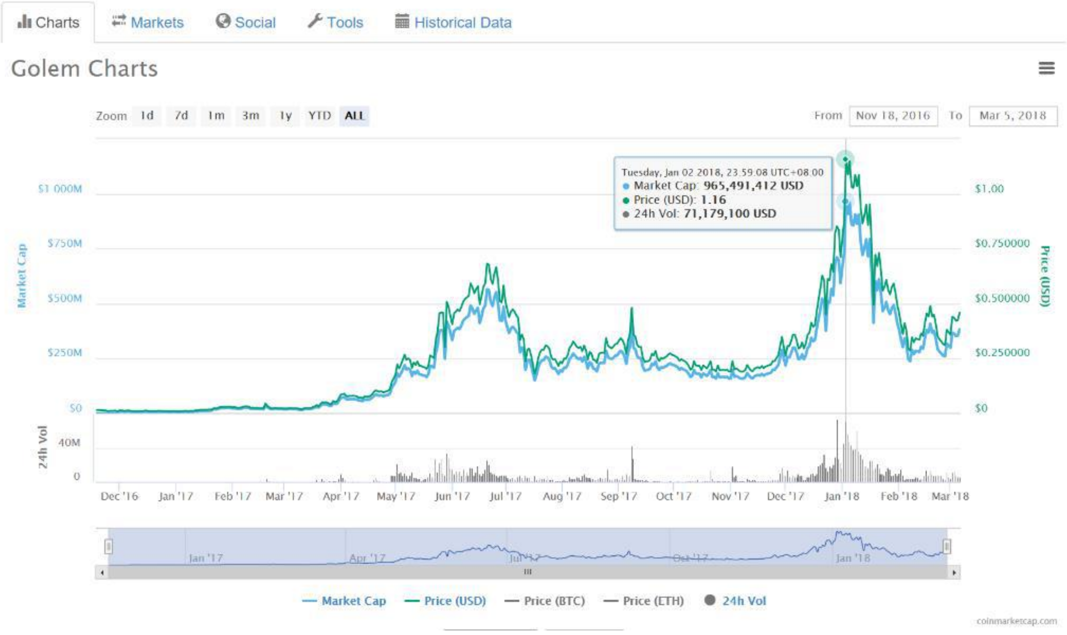
2) Brief Introduction

1. Market environment analysis

The current global computing market is monopolized by giants such as Amazon, Google, Microsoft, and Baidu, Alibaba, Tencent (normally referred as "BAT" in China). Subject to closed networks, external payment systems, and rigid operating models, now the computing market is an extremely centralized market. Those giants use their market advantages to enjoy high profits, which in turn leads to high prices for computing services. With the development of technology, the computing market can be re-architected according to a new theory, that any individual computing units can be added to the computing power network, which will greatly reduced the cost of computing.

As the blockchain market is rising swiftly, a great deal of power has been concentrated in the "mining" market doing "insignificant" operations such as hashing. If computing power of this part can be collected and applied to the practical application scenario, it will make the computing power create "significant" value.

Based on this concept, several projects have been attempting to develop blockchain-based distributed computing platforms. Standing out among them are Golem, iExec, SONM and etc., all those project were ICOs in 2016-17, and their value have been recognized by the capital market. See as below:



According to our observation, the number of participants is the most important factor in determining the size and value of the market, whether it is the computing power market or the blockchain market. Therefore, we believe that if we can build a low-threshold computing power collection and distribution network to collect the computing power that Internet users waste, and use blockchain technologies to increase its commercial value and liquidity, we can attract a lot of normal netizens to participate our project, and at the same time solve the problem of monopoly situation in computing power market. Therefore, the RRNC project is of subversive significance to both blockchain market and computing power market, and has more potentials than previously mentioned blockchain-based distributed computing projects.

2. Our vision

According to the previous analysis of the global computing market, the RRNC team hopes to participate in the wave of reconstruction of the computing power market to recreate a computing ecosystem through blockchain technology. Our core mission is the following two points:

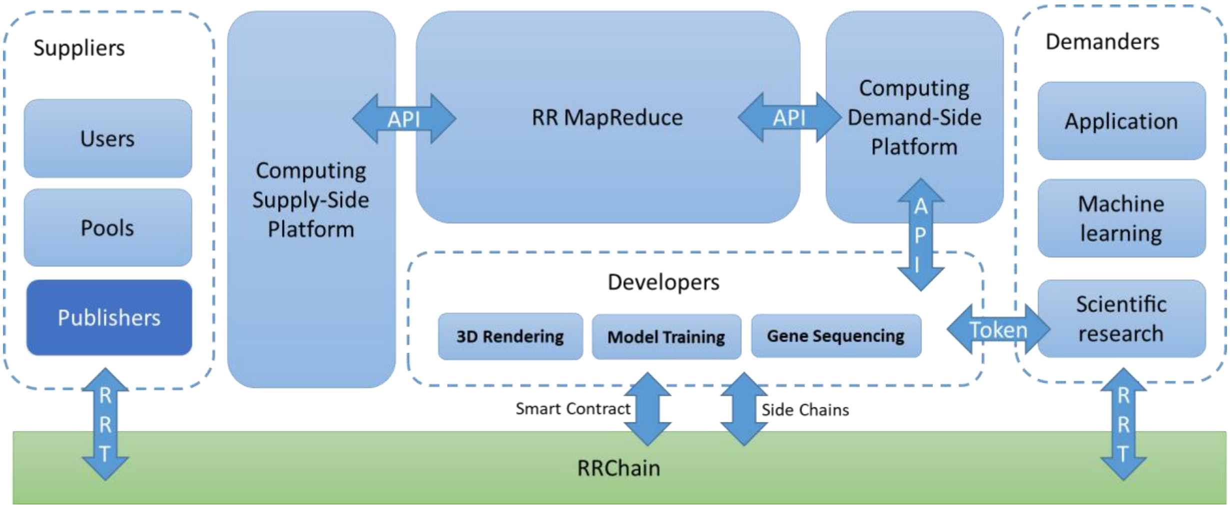
1) Build the world's largest distributed computing network of personal terminals

2) Build the world's largest multipurpose personal terminal computing power market

Blockchain technology and Token are the basic tools for solving the market liquidity of computing power. The RRNC will release its own public chain RRChain and issue RRTokens as well as RRChain-based smart contracts. Users will obtain RRC by contributing their CPU power of the personal terminals.

When all those plans are perfectly implemented, an ecosystem for different application scenarios of computing power will be developed, and RRTokens will serve as an economic lever to help the entire ecosystem functioning well.

3. Ecosystem of RRNC


Suppliers
Users
Pools
Publishers
Computing Supply-Side Platform
API
RR MapReduce
API
Computing Demand-Side Platform
API
Demanders
Application
Machine learning
Scientific research
Developers
3D Rendering
Model Training
Gene Sequencing
Token
RRT
Smart Contract
Side Chains
RRChain
RRT

There are 3 types of characters in RRNC ecosystem.

- **Supplier: individuals or organizations that will sell its computing power for economic feedbacks**.
- **Demander: buyer of computing power**.
- **Developer: people who apply computing power to special scenes to profit**.

In the early stage of the establishment of the ecosystem, the **Supplier**, especially netizens who use Internet through ordinary devices, will be the focus of our development. If we can integrate these people into our ecosystem, RRNC will have a broad user base and a solid foundation of trust that will continually make contribution to RRNC.

The **Demander** is a relatively easy to be introduced into the RRNC ecosystem due to the low price coupled with appropriate marketing. At the same time, in the actual application scenario, the Demander and the Supplier can switch their identity smoothly and form a built-in ecological closed-loop.

Considering the long-term, the **Developer** will be the central element of sustainable development of the entire ecosystem. As the ecosystem gradually matures, developers can integrate their own scenarios of various computing applications. At this time, ecosystem expansion will depend on the creativity of the Developer and the popularity of the software and the system.

3) Product Structure

- **Distributed computing mechanism**

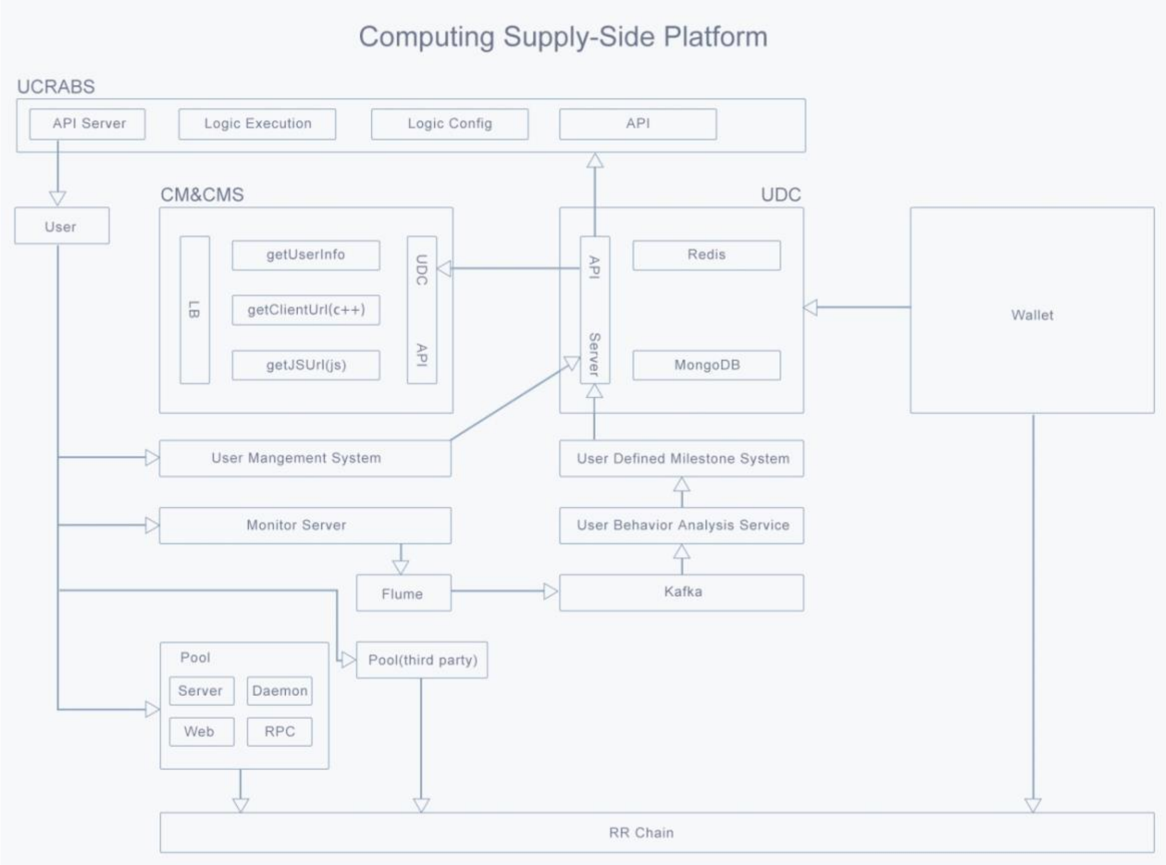
Through CSSP, we **collect the computing power of massive unreliable computing nodes. When the CDSP obtains the task, it can decompose it into extremely small computing units through the RRMR system and distribute them to each computing node. After the computing node finish the task, it will submit the result to RRMR for redundancy check, and the top n% of the computing nodes that submitted the correct result will be rewarded.**

1. Computing Supply-Side Platform (CSSP)

What the CSSP mainly needs to solve in terms of technology is how to scaled and standardized the distributed and fragmented computing power to make it economically valuable. The "aggregation efficiency" and the "grain size” of aggregated computing power are the two core elements of this platform.

Our computing suppliers are mainly divided into two categories, User and Internet Application/Service (Publisher). We will provide them with easy-to-use platforms and services based on their needs.

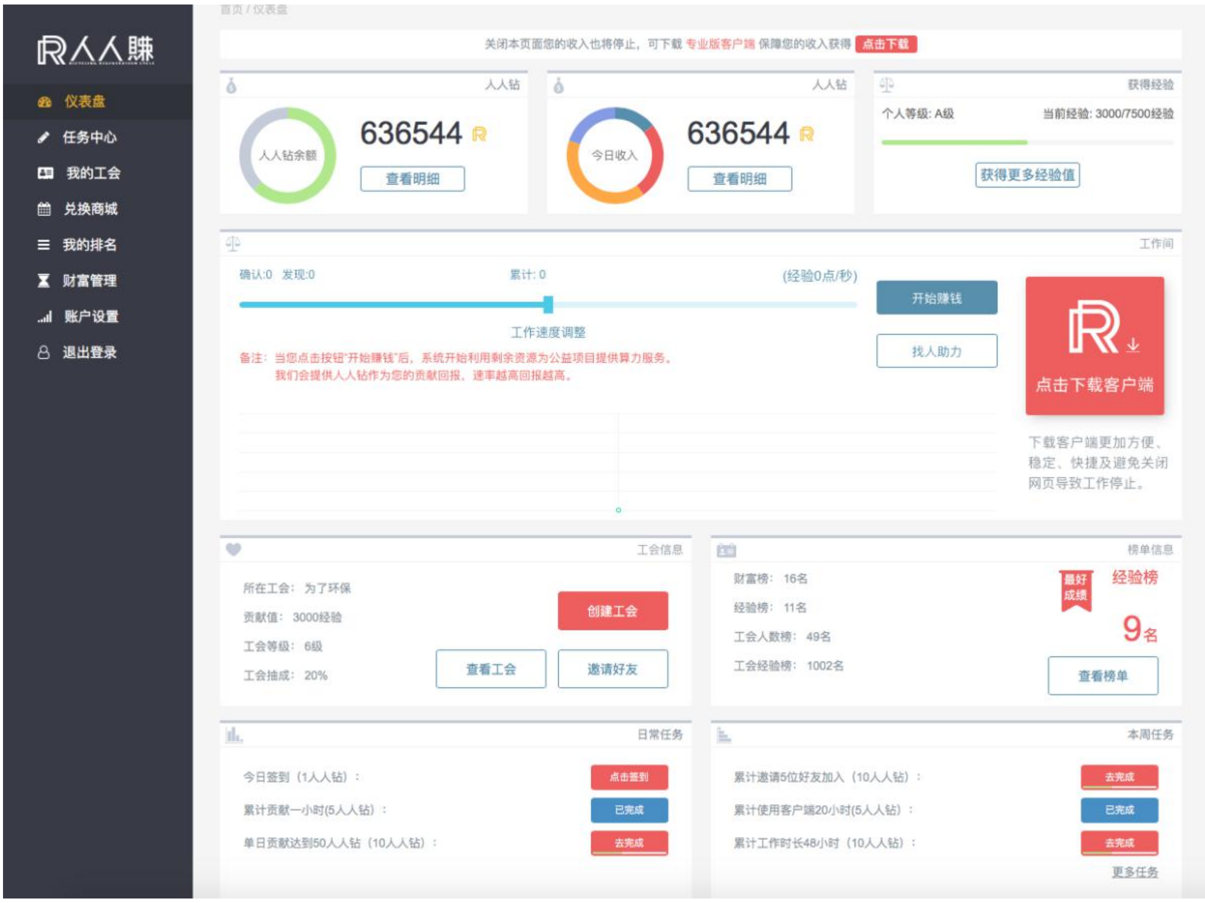
UCRABS, User Computing Resource Auto-Balanced System
CM&CMS, Client Management&Config Mapping System
UDC, User Data Center


Computing Supply-Side Platform
UCRABS
API Server
Logic Execution
Logic Config
API
User
CM&CMS
UDC
LB
getUserInfo
getClientUrl(c++)
getJSUrl(js)
UDC
API
API
Server
Redis
MongoDB
Wallet
User Mangement System
User Defined Milestone System
Monitor Server
User Behavior Analysis Service
Flume
Kafka
Pool
Server
Daemon
Web
RPC
Pool(third party)
RR Chain

User's function

Note: figures involved in the followings are all examples, not real data.

1) One-click mining


R人人賺
仪表盘
任务中心
我的工会
兑换商城
我的排名
财富管理
账户设置
退出登录
首页 / 仪表盘
点击下载
人人钻
人人钻余额
查看明细
人人钻
今日收入
查看明细
获得经验
获得更多经验值
工作间
工作速度调整
开始赚钱
找人助力
点击下载客户端
工会信息
创建工会
查看工会
邀请好友
榜单信息
最好成绩
经验榜
查看榜单
日常任务
点击签到
已完成
去完成
本周任务
去完成
已完成
去完成
更多任务

关闭本页面您的收入也将停止，可下载 专业版客户端 保障您的收入获得

636544

636544

个人等级: A级

当前经验: 3000/7500经验

确认:0 发现:0

累计: 0

(经验0点/秒)

备注：当您点击按钮"开始赚钱"后，系统开始利用剩余资源为公益项目提供算力服务。
我们会提供人人钻作为您的贡献回报，速率越高回报越高。

下载客户端更加方便、稳定、快捷及避免关闭网页导致工作停止。

所在工会： 为了环保
贡献值： 3000经验
工会等级： 6级
工会抽成： 20%

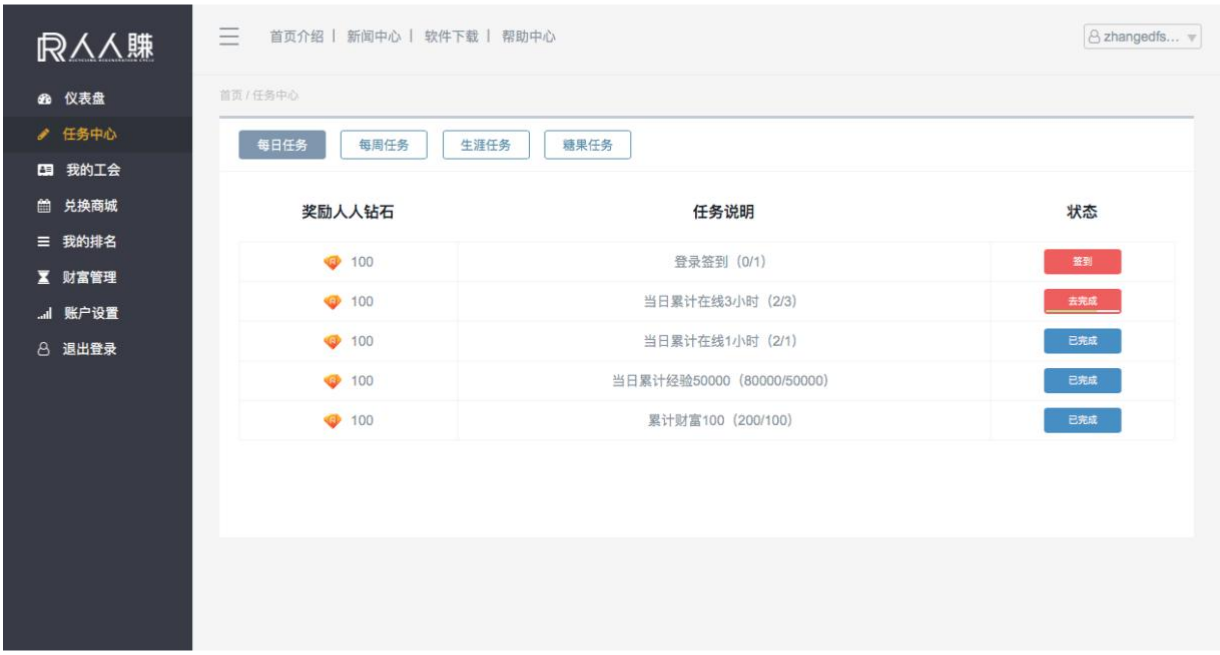
财富榜： 16名
经验榜： 11名
工会人数榜： 49名
工会经验榜： 1002名

9名

今日签到（1人人钻）：
累计贡献一小时(5人人钻)：
单日贡献达到50人人钻（10人人钻）：

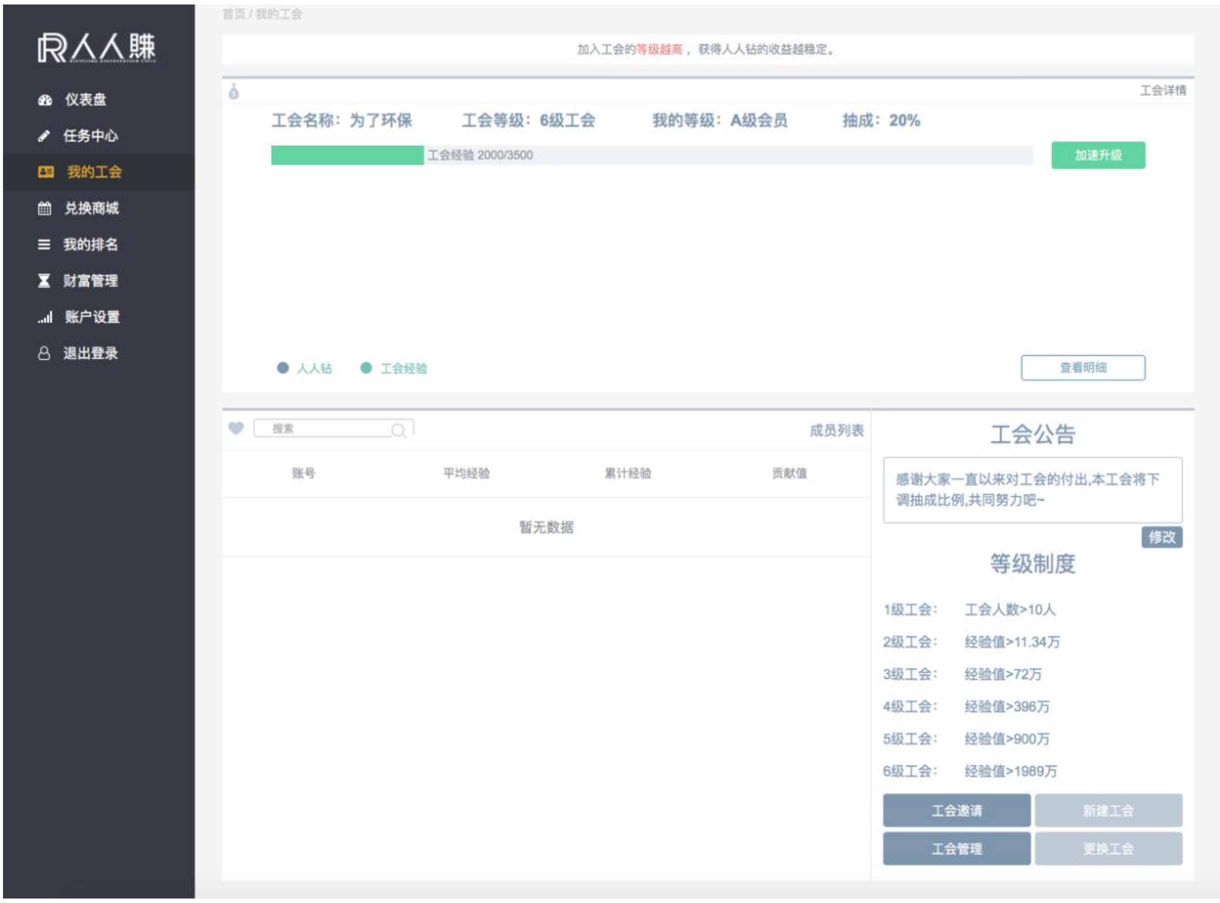
累计邀请5位好友加入（10人人钻）：
累计使用客户端20小时(5人人钻)：
累计工作时长48小时（10人人钻）：

2) Personal incentive system


人人赚
仪表盘
任务中心
我的工会
兑换商城
我的排名
财富管理
账户设置
退出登录
首页介绍
新闻中心
软件下载
帮助中心
zhangedfs...
首页 / 任务中心
每日任务
每周任务
生涯任务
糖果任务

奖励人人钻石	任务说明	状态
100	登录签到（0/1）	签到
100	当日累计在线3小时（2/3）	去完成
100	当日累计在线1小时（2/1）	已完成
100	当日累计经验50000（80000/50000）	已完成
100	累计财富100（200/100）	已完成

3) Union system


R人人赚
仪表盘
任务中心
我的工会
兑换商城
我的排名
财富管理
账户设置
退出登录
首页 / 我的工会
工会详情
加速升级
人人钻
工会经验
查看明细
搜索
成员列表
修改
工会邀请
新建工会
工会管理
更换工会

加入工会的等级越高，获得人人钻的收益越稳定。

工会名称：为了环保　工会等级：6级工会　我的等级：A级会员　抽成：20%

工会经验 2000/3500

账号	平均经验	累计经验	贡献值
暂无数据			

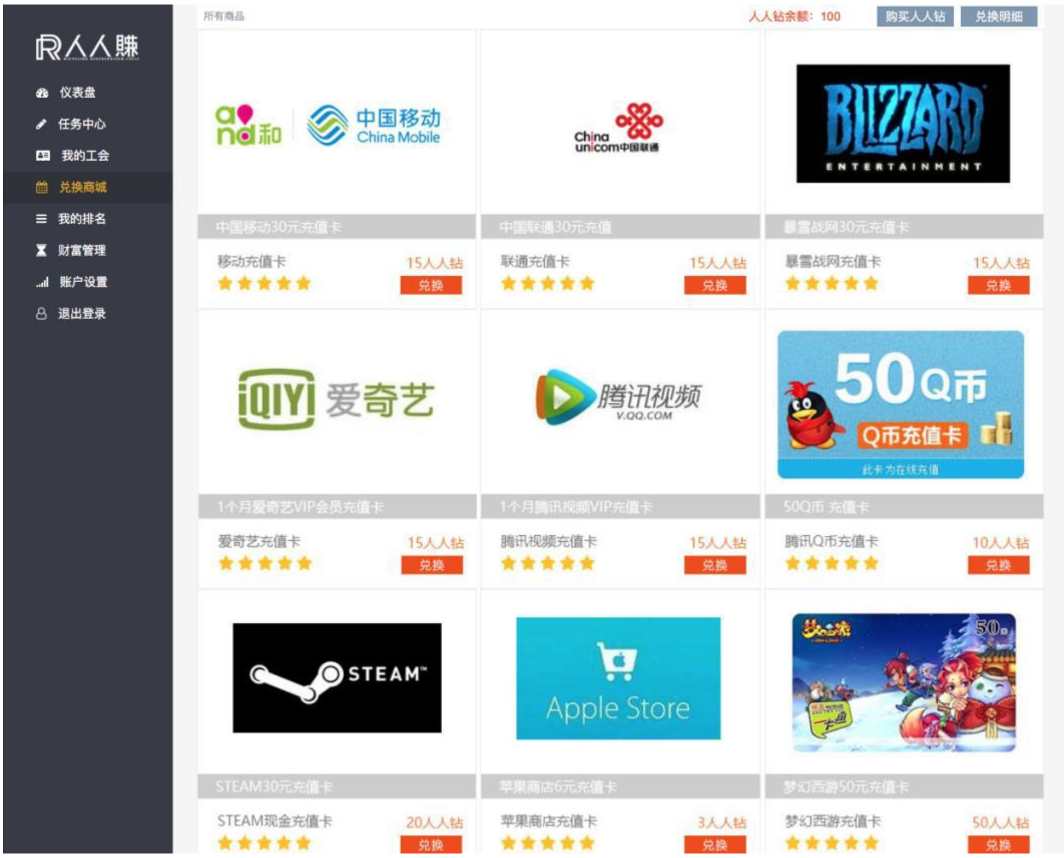
工会公告

感谢大家一直以来对工会的付出,本工会将下调抽成比例,共同努力吧~

等级制度

1级工会：　工会人数>10人
2级工会：　经验值>11.34万
3级工会：　经验值>72万
4级工会：　经验值>396万
5级工会：　经验值>900万
6级工会：　经验值>1989万

4) Shopping mall system

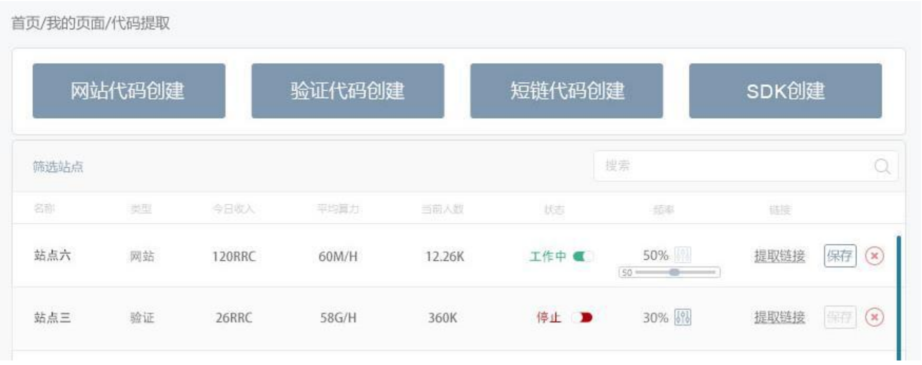

R人人赚
仪表盘
任务中心
我的工会
兑换商城
我的排名
财富管理
账户设置
退出登录
所有商品
购买人人钻
兑换明细
兑换
and和
中国移动 China Mobile
China unicom中国联通
BLIZZARD ENTERTAINMENT
iQIYI 爱奇艺
腾讯视频 V.QQ.COM
50Q币
Q币充值卡
此卡为在线充值
STEAM
Apple Store
梦幻西游
50

人人钻余额：100

商品	名称	价格
中国移动30元充值卡	移动充值卡	15人人钻
中国联通30元充值	联通充值卡	15人人钻
暴雪战网30元充值卡	暴雪战网充值卡	15人人钻
1个月爱奇艺VIP会员充值卡	爱奇艺充值卡	15人人钻
1个月腾讯视频VIP充值卡	腾讯视频充值卡	15人人钻
50Q币 充值卡	腾讯Q币充值卡	10人人钻
STEAM30元充值卡	STEAM现金充值卡	20人人钻
苹果商店6元充值卡	苹果商店充值卡	3人人钻
梦幻西游50元充值卡	梦幻西游充值卡	50人人钻

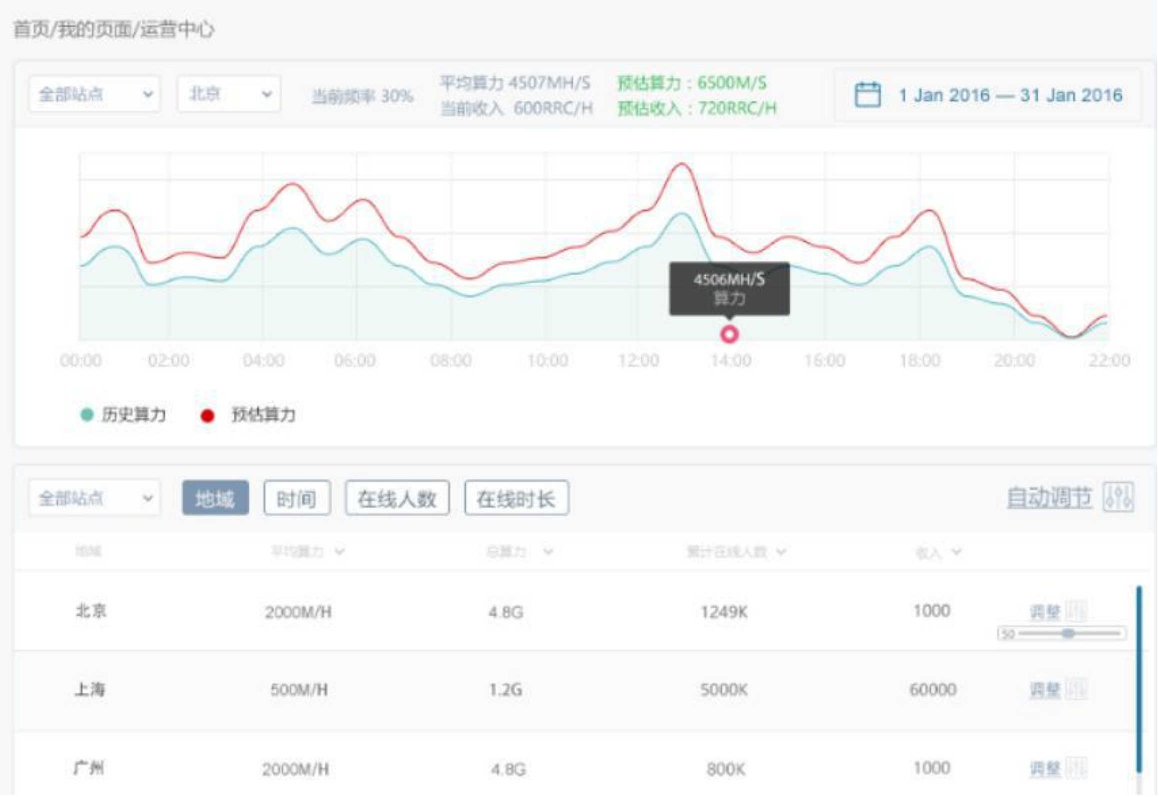
For Publisher

1) Multi-types of package code


首页/我的页面/代码提取
网站代码创建
验证代码创建
短链代码创建
SDK创建
筛选站点
搜索
50
保存
提取链接

名称	类型	今日收入	平均算力	当前人数	状态	频率	链接
站点六	网站	120RRC	60M/H	12.26K	工作中	50%	提取链接
站点三	验证	26RRC	58G/H	360K	停止	30%	提取链接

2) Operational tools


首页/我的页面/运营中心
全部站点
北京
当前频率 30%
平均算力 4507MH/S
当前收入 600RRC/H
预估算力：6500M/S
预估收入：720RRC/H
1 Jan 2016 — 31 Jan 2016
4506MH/S
算力
00:00
02:00
04:00
06:00
08:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
历史算力
预估算力
全部站点
地域
时间
在线人数
在线时长
自动调节
50
调整

地域	平均算力	总算力	累计在线人数	收入
北京	2000M/H	4.8G	1249K	1000
上海	500M/H	1.2G	5000K	60000
广州	2000M/H	4.8G	800K	1000

3) Flexible API Interface

CSSP provides an API interface to Publisher to help them query, operate or count in order to meet their users with additional services such as free file download, get rewards about online game currency or props, and etc.

2. RRChain

RRChain uses the unique consensus mechanism of blockchain technology to record the labor and labor income of suppliers. RRTokens will be used as a reward throughout the ecosystem.

Proof of Contribution (POC) mechanism: All nodes that access the RRMR will implement two types of calculations: Hash and Task. For this purpose, we design a POC mechanism to solve the problem of measuring the contribution of a single computing node. In this POC mechanism, proportion of Hash and Task can be set in one single calculation task and the Hash can be randomly distributed throughout it. Computing nodes must complete all hash calculations and verify them with other nodes in the blockchain before they can measure the task contribution based on the time share of the two parts of the task, i.e., (Task calculation time / Hash calculation time) * Hash calculation return = Return of the entire calculation task.

The RRChain also supports the Developer using smart contracts or sidechains to issue Tokens based on their own services.

To ensure the original intention and vision, RRChain will develop a set of POC algorithms called RR algorithm that are much complex than X11 version of Bitland mining machine and require the use of all components of CPU.

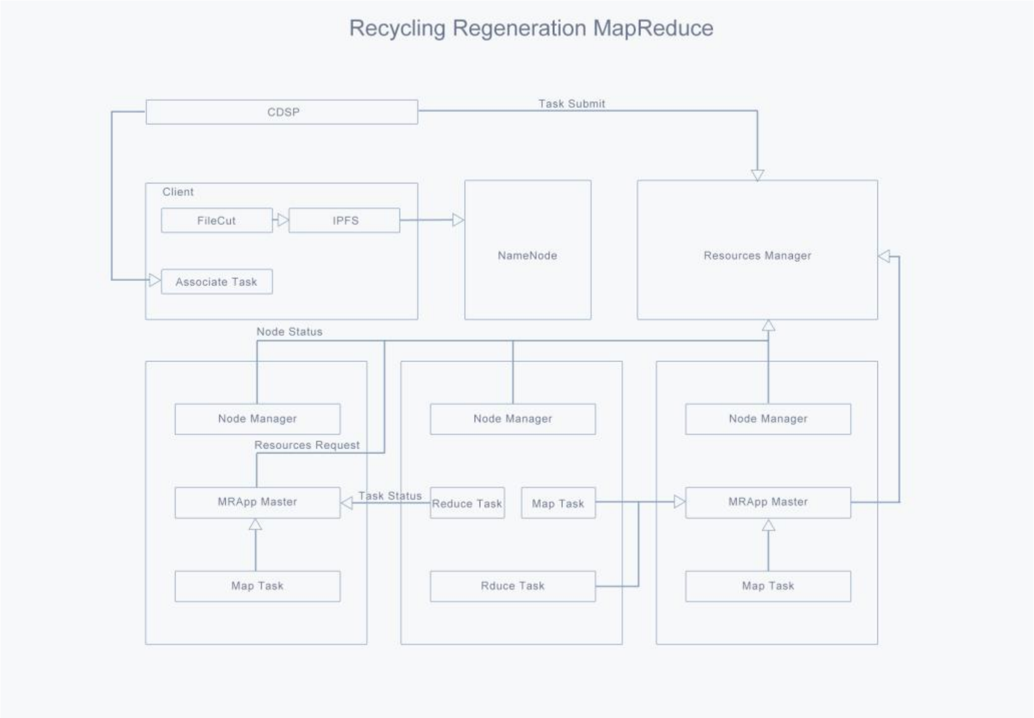
Development will be implement into 2 stages.

In Stage 1, we will improve CryptoNight in order to ensure the early security of the main chain. We will add requirements for DRAM with appropriate capacity to eliminate the threat of CryptoNight mining machine that may occur in the near future. The reason why the current CryptoNight algorithm does not allow the CPU to lag behind the GPU much is due to its 8-byte random access to small blocks (2MB), which is particularly suitable for the L3 Cache of the CPU because the latency of processing core on the CPU accesses L3 is very small, while the Cache and DRAM on GPU are good at reading and writing large blocks of continuous data but the random access to 8-byte short data is poorly supported. However, the CryptoNight algorithm cannot prevent the ASIC mining machine because the integration of 2MB of SRAM is of low cost in the advanced integrated circuit manufacturing process.

In stage 2, since the ASIC mining machine has a long period of time that includes at least one year of algorithms research, chip design, chip manufacturing, machine manufacturing, capacity ramping, sales, and mining, from project approval to the initial capital outlay recovery. If the collection of POC algorithms implements block-by-block rotation, as the algorithm set changes continuously over time, the interval between changes is less than the life cycle of the miner, then the optimization of the ASIC mining machine will be unprofitable, for it can only configure and refresh algorithm. At the same time, data dependence will be used to eliminate the possibility of massive parallel processes. In this way, even the ASIC mining machine is designed as configurable, it muse be designed like CPU very much. Currently, there are few industry-recognized secure hash algorithms, but a sandwich structure can be used to transform almost any algorithm on a CPU into a hash algorithm. First we use a standard hash function H to expand the nonce and seed to get a large number of random numbers input I, defined as I = H (nonce, seed). Then we use the algorithm A that the CPU excels at to process the random number input I to get some output O, defined as O=A(I). Then we use another hash function h to calculate the hash value of these outputs, resulting in h(O), and we judge whether the difficulty requirement is satisfied by counting the number of leading zeros. Sandwich structure of this kind has been proven effective by ZCash. What we only need to do is to modify the general birthday paradox issue in the middle part to other algorithms that the CPU is excelled at. Because there is a standard hash algorithm to confirm the result, h(A(H(nonce, seed))) which is difficult to collide, can satisfy the avalanche and irreversible characteristics of hash function, thus being a qualified hash function.

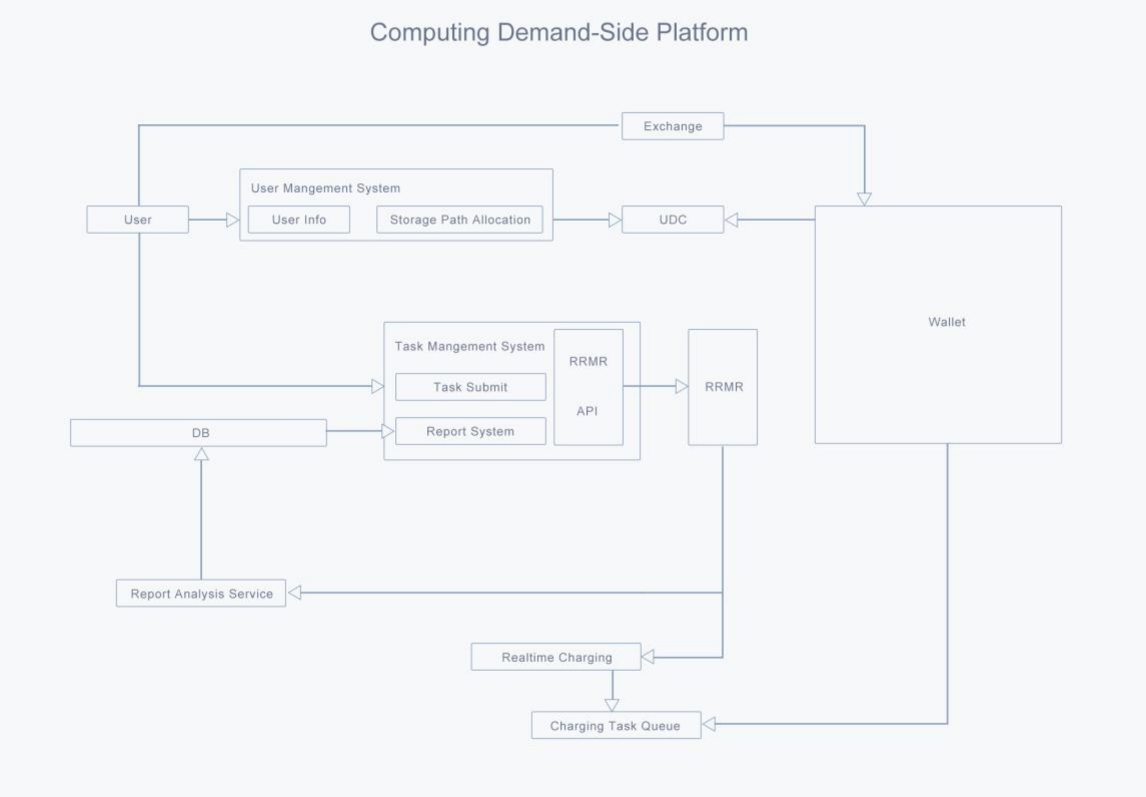
3. Recycling Regeneration MapReduce (RRMR)

The RRMR mainly solve the dismantlement of distributed computing tasks and fine management of massive micro-computing node task distribution. RRMR also adjust the redundancy of task allocation according to the dimensionality characteristics such as area and time to ensure the balance between resource input and timeliness of tasks.


Recycling Regeneration MapReduce
CDSP
Task Submit
Client
FileCut
IPFS
Associate Task
NameNode
Resources Manager
Node Status
Node Manager
Node Manager
Node Manager
Resources Request
MRApp Master
Task Status
Reduce Task
Map Task
MRApp Master
Map Task
Rduce Task
Map Task

4. Computing Demand-Side Platform (CDSP)

The CDSP is mainly to solve the ease use of submission and deployment of computing task, and issues related to the transparency marketization of computing power trading.


Computing Demand-Side Platform
Exchange
User Mangement System
User
User Info
Storage Path Allocation
UDC
Wallet
Task Mangement System
RRMR
Task Submit
API
RRMR
DB
Report System
Report Analysis Service
Realtime Charging
Charging Task Queue

4) Commercial Value of RRNC at different stages

As mentioned in the abstract, BBNC's project development plan is divided into three major phases, in which the commercial value of BBNC is reflected in different aspects.

Step 1: Build ecosystem

In this stage, a large number of individual users will quickly obtain RRTokens. When the price of RRTokens increase, a considerable number of individual users will purchase RRTokens for investment.

Step 2: Create circulation environment

In this stage, a large number of consumption scenarios will be created. Individual users can use RRTokens to purchase goods. In the process, the market awareness of RRTokens will be further promoted and the user base will be further expanded as well, which will in turn attract more Publishers to join this ecosystem and further promote the value of it.

Step 3: Establish distributed computing network

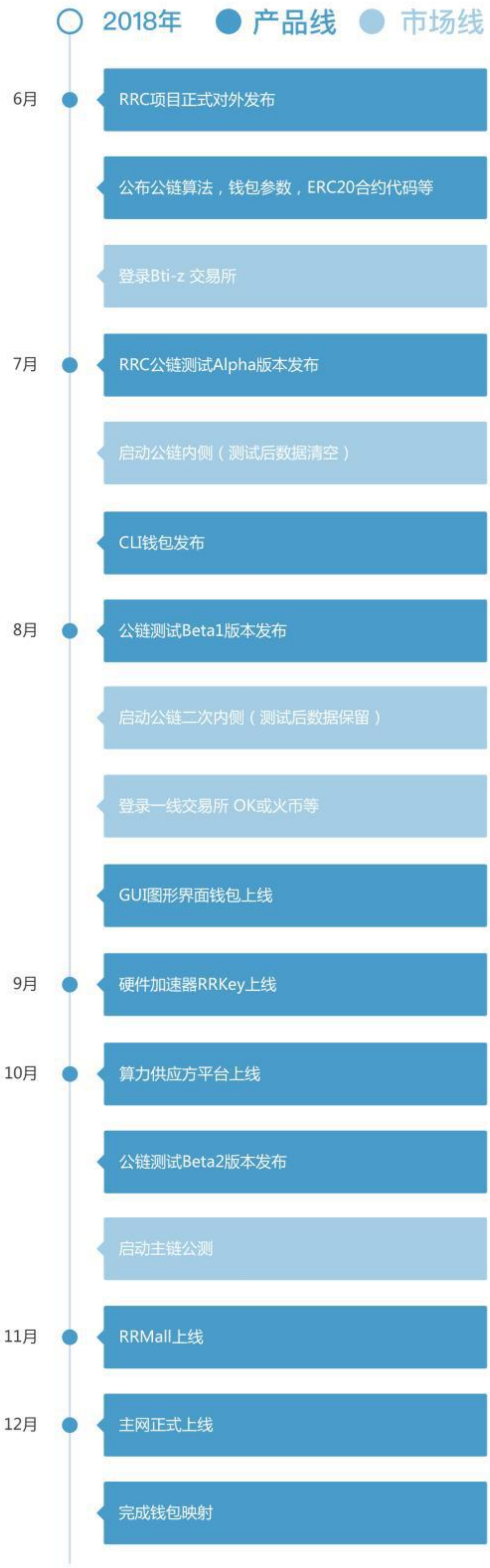
Compared to traditional self-built big data clusters or cloud computing services, the computing power generated by RRNC will have more advantages on price, which will result in being highly competitive for off-line computing services with low real-time requirements.

Taken log extracted task for example, if there are 4T original log file to be extracted, the data size that Mapper sent to the Reducer is 600G, and the task will be divided into 10000 subtasks by using Hadoop plan in a cluster with 40 nodes and 600 cores. The entire task will consume 60 minutes. If Alibaba Cloud EMR were chosen, it would cost about 550 RMB. But if RRMR were chosen to computing the same task, assuming each terminal only provide 1 core for computing and the task is distributed to 6000 nodes, time consuming will be the same. If we reward each node with 0.05 RMB, then completing the same task using RRNC would only cost about 1/2 of Alibaba Cloud. At the same time, if the user continues to contribute 1 core computing power, the user him/herself will get a 36 RMB monthly income.

	Time (minutes)	Price (RMB)	Core number	Income/(h*core) (RMB)	Income/(month*core) (RMB)
Alibaba Cloud	60	550	600	0.92	660
RRNC	60	300	6000	0.05	36

5）Roadmap

Our development plan is as follows according to the four main platforms:



○ 2018年 ● 产品线 ● 市场线

6月
- RRC项目正式对外发布
- 公布公链算法，钱包参数，ERC20合约代码等
- 登录Bti-z 交易所

7月
- RRC公链测试Alpha版本发布
- 启动公链内侧（测试后数据清空）
- CLI钱包发布

8月
- 公链测试Beta1版本发布
- 启动公链二次内侧（测试后数据保留）
- 登录一线交易所 OK或火币等
- GUI图形界面钱包上线

9月
- 硬件加速器RRKey上线

10月
- 算力供应方平台上线
- 公链测试Beta2版本发布
- 启动主链公测

11月
- RRMall上线

12月
- 主网正式上线
- 完成钱包映射

6）Generate rules of RRTokens

Total amount: 1.8 billion

Token release amount: (Total amount - Total released amount) >> Token release speed

RRCHAIN will release gradually, based on a total amount, each reward is based on the total amount minus an algorithm that has already been issued.

The difficulty adjustment algorithm uses BCH's DAA algorithm

The DAA algorithm is designed to avoid sudden difficulty reductions and spikes. For example, when the RRC computing power changes exponentially, the network will quickly adjust the difficulty and also avoid feedback oscillations.

The difficulty will be adjusted for each new block based on the amount of work done by the previous 144 blocks and the elapsed time.

7）Our team

TEAM

Liu Shuang, Founder&CEO

Has 14 years of experience in the digital marketing industry in China. Has been responsible for displaying advertising products for Alibaba Group since 2008, and has established well-known advertising product systems in various industries such as diamond exhibition and TANX, bringing more than 10 billion yuan in annual revenue to Alibaba Group. After leaving Alibaba Group, he joined WPP Group, established the first company based on e-commerce and advertising in the 4A system, called KUVERA, and became the CEO.

Wang Qiang, Chief engineer of the chain

Served as a senior engineer for device-driven of Founder's Electronic Graphics Division , and was responsible for multi-platform driver for Konica Minolta-related devices.. he chief architect of a blockchain project is responsible for the creation, development, and maintenance of the chain. Years of work experience in encryption algorithms and security systems.

Wang Xin, Chief of Product and Marketing

Over 10 years of product design and marketing experience. Used to be the director of product and marketing of Intercom and Youyi Interactive, and now he is the general manager of Behe Adtech. Leading the design of China's first programmatic marketing system.

Consultant:

Shen Bo, Expert consultant

The founder of FBS capital. One of the founders of Invictus Innovations Incorporated, which is a founding team of BitShares projects. He is also a veteran of traditional finance and has over 12 years of experience in securities, hedge funds and investment banking.

Yuan Ye, Expert consultant

MBA from Tsinghua University. He is currently an executive director of the Shuimu Tsinghua Alumni Foundation, a member of the Expert Committee of the "Internet+" college student Innovation and entrepreneurship competition of the Ministry of Education, and a youth tutor of the China Entrepreneur Training Camp of Tsinghua University. He has many years of asset management experience in the secondary market, early stage investment experience in the primary market, and entrepreneurial experience in the financial data field. He has invested in dozens of start-up companies in the fields of financial technology and intelligence.

Li Zongcheng, Expert consultant

Co-founder of Timestamp Capital, CFO of 8 BTC. Established two major product lines, including 8 BTC and the Bytom chain. 8 BTC provides the underlying basic information and data services for blockchain entrepreneurs and investors. Bytom chain provide solutions for asset registration and circulation on the blockchain. Li successfully combined vertical portals and public chain in an ecosystem.

Feng Chi, Expert consultant

A representative of the first batch of post-90 entrepreneurs, started business at university and quickly obtained multiple rounds of financing. After joining 36Kr, he established a high-quality entrepreneurial board of private entrepreneurs of the Internet "Monsters Academy", and later became the head of the marketing department of the "Whale" marketing division of the primary market data and system provider. He has unique insights into the primary market. He is currently CEO of Genesis Capital and is known as "the investor who knows the most about entrepreneurs.

Liu Junfeng, Expert consultant

14 years of continuous entrepreneurial experience, the founder of the Behe Adtech, used to be the former media director of McCann Advertising Co., Ltd.; in 2005, founded Kuree (the predecessor of StormPlayer); founded Yoyi in 2007.

Dai Jun, Expert consultant

Worked as senior engineer of Sina Weibo platform; leader of Youyi interactive data project, led the team to design and develop the first DSP system in China; leader of Sohu accurate advertising project, responsible for the design and research and development of Sohu accurate advertising system and AdExchange; 360 commercial products leaders in technology, upgrading the navigation display advertising system; Behe technology CTO, forming a technical team, developed a complete digital marketing system from scratch.

Main Investment

FENBUSHI CAPITAL

INNO 英诺天使基金 INNOANGEL FUND

GENESIS 创世资本

巴比特 服务于区块链创新者

HORUS CAPITAL