Parlay

Decentralized prediction game platform,

powered by public

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PARLAYCHAIN.IO

Overview

The objective of this Whitepaper is intended to formally document and describe the features and concepts of the Parlay. Parlay is a project to pursue scalable blockchain solution that has PrimeNodes to minimize blockchain network delay and user-friendly masternode. Moreover, Parlay is an event-driven cryptocurrency which provides decentralized prediction game platform, operated by public community.

Proof of Stake for consensus algorithm in order to increase and secure scalability of blockchain network. Parlay Chain embeds auto-scaling nodes which has unique node management system to stabilize the mainnet.

Cryptocurrencies with masternode feature highly depends on the investor who operates masternode for community. However, managing masternode has always been challenging for non-programmers and investors hurdle from configuring their masternodes. This is the critical reason why we have decided to build user-friendly ecosystem in masternode configurations. For instance, Parlay team focuses on user experience and easy management system for running a masternode. More information about the configuration methods will be presented at PrimeNodes section.

We adopt incentive rewards to promote the network service (PrimeNodes) and to secure the network (PoS wallet). Community rewards advocate parlay proposals and voting systems to develop the fastest growing blockchain ecosystems.

1.Secured Scalability

1.1.Blockchain network delay and Blockbuster attack

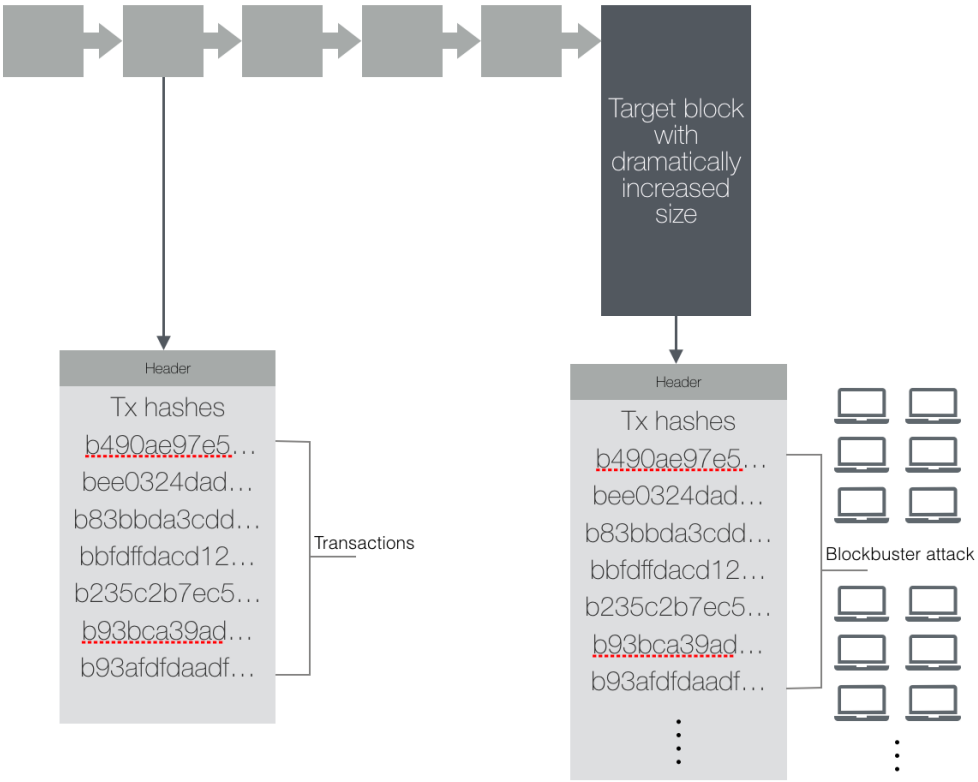
Since Bitcoin appeared in 2008, numerous cryptocurrencies have been developed and launched with each own features. The features include technical, business-service model, ecosystem, and protocol based platform.

However, all cryptocurrencies embed common backbone structure; game theory, mining/rewards, decentralized ledger, merkle tree, and blocks.

Because of the similar features in blockchain technologies; they allocate correlated critical issues such as network congestion and network delays. Therefore, Parlay team mainly focuses to resolve and to minimize network delay to stabilize the transaction in the network.

Why does blockchain network experience the network delay? It occurs when the number of transactions instantly increases in a short amount of time while the mining difficulty remains the same until retargeting next difficulty after generating a block.

In other words, one can intentionally increase the number of transactions repeatedly in a short-time frame to cause network congestion and network delays. If a program has a method to generate transactions in a short-time to blockchain network, it could harm the network by causing stoppage of generating block for elongated time. Parlay team named it as blockbuster attack which is similar to DDOS attack to server network.



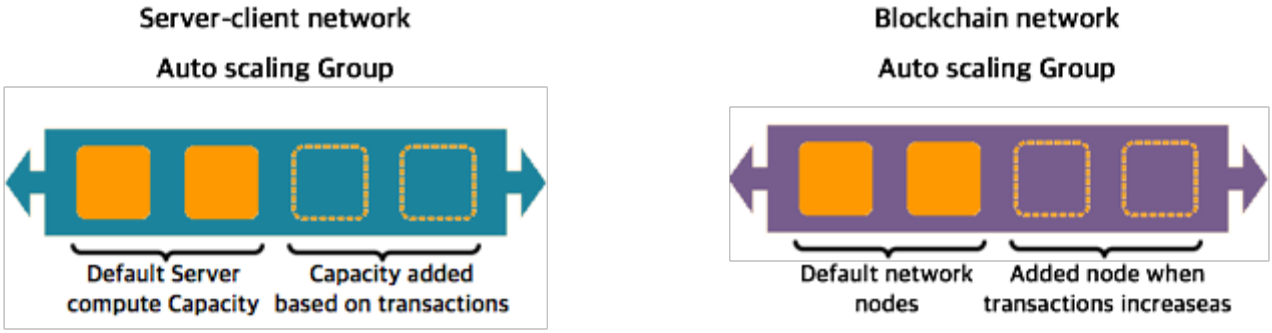
(Image 1 : Blockbuster attack)

Delay due to overflowing transactions is challenging to overcome especially in Proof of Work (PoW) consensus algorithm because it requires physical hashpower to increase the transaction speed.

Because mining is the concept of voluntary participation, network cannot anticipate the amount of hashpower at certain time. This is inevitable solution that Satoshi Nakamoto's initial Bitcoin limited its maximum block size to 1mb. Limiting maximum number of transactions in a block to 1mb increases the speed of transfer block information to peer node. Therefore, the lightness of a block size helps to minimize the length of queued transactions which leads to faster synchronization between the network and peer nodes.

In addition, the network problem of overflowing transactions is the critical issue on existing server-client models, because each server has its physical limit to process the transaction amount. Prevalent solution in regards of the problem is to install more servers to increase its processing power. However, it is much time consuming and inefficient to install hardware and software setup in a short amount of time to respond to sudden congestion. While installing new servers to increase instant computational power to resolve the sudden congestion, it will pile up the number of unsolved transactions and cause belated responses for its live services.

For this significant and occasional issue in the blockchain technology, Parlay team applied the auto-scaling feature to the blockchain network to minimize its network delay. An auto-scaling feature refers to the method that automatically increases and decreases the number of server depending on the congestion level (ie; AWS's VPS services). This will facilitate us to overcome the sudden congestion and to process irregular transaction caused by increasing demands.



(Image 2 : auto-scaling in blockchain)

The idea of auto-scaling group in blockchain network is similar to the server-client network. The only difference is that the server-client network requires servers to compute transaction; and blockchain network requires nodes to process transactions.

In Proof of Stake (PoS), the node does not require physical computational power from mining rigs as in Proof of Work (PoW). Therefore, the node in PoS can be turned on and off relatively easier than the node of PoW. If the number of transactions are properly monitored, blockchain network is enabled to increase and decrease the number of nodes to maintain its stability of the network.

1.2.Blockchain Transaction Monitoring System

Basically, blockchain monitoring system tracks and reports all incoming transactions from blockchain nodes. Nodes continuously broadcast generated transactions to peer nodes.

Broadcasted transactions relays peers to peers and those transactions are written to memory pool (mempool) of each node. Since the most of node shares the exact mempool, a single node can monitor how many remaining transactions are in a mempool. It indicates whether transactions can be gathered and verified in a single block. If transactions are made in a short amount of time, it could cause overflowing transactions and sync improperly between the list of transactions in each mempool. Since verification process of transactions in mempool has always been a bottleneck in blockchain technology, building a monitoring system in spreaded nodes is necessary to predict network delay and to inform the network status.

1.3.Blockchain Auto-scaling System

The monitoring system acknowledges the amount of transactions in nodes' memory pool, the system sends RPC call to each preliminary PrimeNodes when network delay is predicted. Based on the congestion level of monitoring system, the number of preliminary PrimeNodes will be flexibly chosen to be operated.

On the other hand, when the network congestion level is low, PrimeNodes will be turned off gradually in order to maximize rewards on Parlay Chain.

2.PrimeNodes

2.1.User-friendly Masternode Service (Prime Service)

Running a masternode has always been challenging burden for non-programmers. It is time consuming task to understand the system and to configure the masternode even for the developers. To solve such issue, Parlay team will provide Prime Service to help users to setup masternode at relatively ease.

Based on the experience and operation in blockchain technology, Parlay team explored that user-friendliness is the key to the service. In general, innumerable masternode blockchain systems only provide developer-friendly masternode guide. In consequences, many investors give up running masternode and lose their potential returns.

Blockchain network needs community backed up in order to maintain its stability and value of the network. Developer-friendly masternode could narrow down the target of users and reduce the size of community. Therefore, Parlay team determined to develop user-friendly PrimeNodes setup to maintain its community.

Prime Service is a simple solution that automates masternode setup. It does not include any challenging engineering works, but its highly effective enough to gather users who have hesitated to operate masternode.

The Prime Service is based on Docker. Docker is an open source program that allows developers to package all the dependencies for software. Synchronization between docker and blockchain technology provides highly effective method to operate PrimeNode.

Docker creates virtual space in VPS and provides a container which includes all the requirements of Parlay Chain. Since, the Prime Service simplifies setting up the PrimeNodes by minimizing steps, the users can easily operate and manage their masternode.

3.Parlay.Live

Parlay.Live is decentralized prediction game platform, operated by public community.

3.1.Proposal on Community

To support the network growth and stability, Parlay.Live platform provides the proposal right to users who supports Parlay network service (PrimeNode). Any PrimeNodes holder can post Parlay event on Parlay.Live and obtain incentives from our system. Parlay Prize will be set by our budget managing system and will integrate with Parlay.Live.

Proposal on Parlay.Live should contain the following items:

- Parlay event description including race, game, competition, and/or other future events.
- Parlay Prize : type of prize & reward size
- Parlay Fee : event ticket price
- Parlay Period : event participation period

3.2.Approval by Parlayers

One Parlay (PAR) holds one vote. To censor the proper parlay event, the committee examines and reviews pre-proposal. If the committee approves the event, Parlay Chain automatically enforces the event.

3.3.Gameplay Detail

In Parlay.Live prediction game, Paralyers pick the winners of three or more gameplay to win the Parlay Prize. To give clear idea on Parlay event system, we will initiate our Parlay.Live service starting with 2018 Russia WorldCup. Please contribute your passion and fortune to make life become more entertaining and profitable.

3.4.Future Vision

An event can be interpreted as more broad definition in Parlay community. Subsequently, the event will become a form of an election and/or a governance decision on community opinion. The future of Parlay live platform encourages community to post new events for multiple purposes. As previously mentioned, an event organizer can post a demo-election for Parlay event before the actual election

starts. Participants could vote to the demo-election like game play. Those voting results from the demo-election could be used as predictive sample of the election.

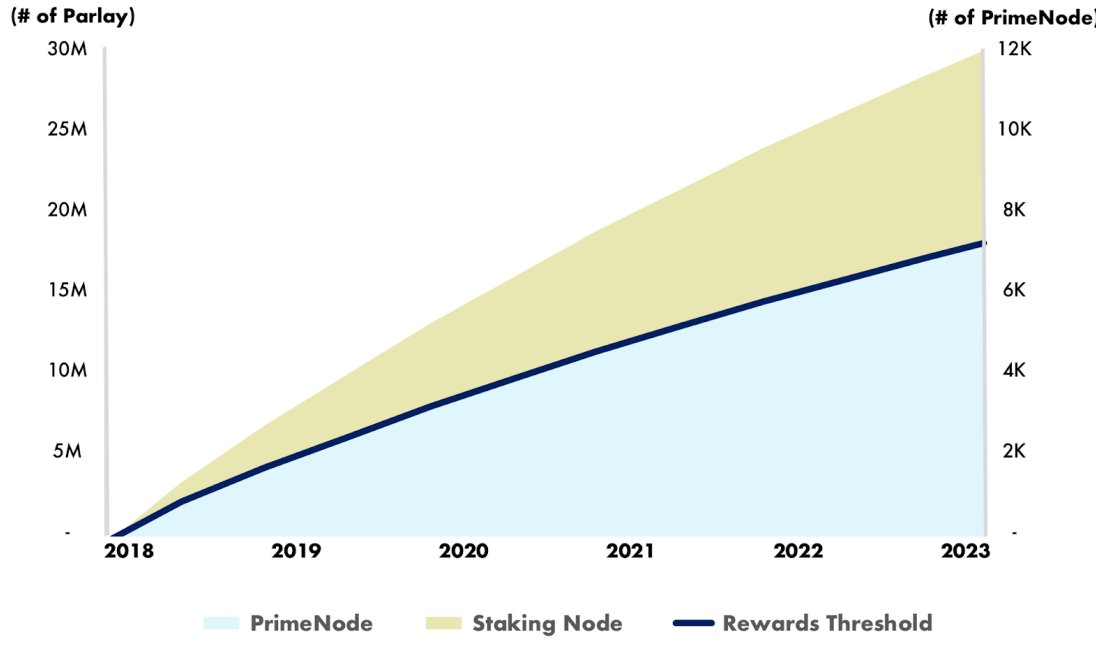
The above example is one of future usage that Parlay team strongly anticipates. Including such use case, Parlay events can evolve into numerous forms mainly driven by its community members and Parlay holders. Hence, Parlay.Live is the platform service that gathers and evaluates diversified collective intelligence proposed by the community. Parlay team urges to potentially expand and stimulate by the community and for the community.

4.Parlay Chain Specification

Parlay's PoS consensus algorithm enables every stakeholder to participate in the validation of transactions on the network. To promote the stable and secure network growth, we assigned more incentives to PrimeNodes holder. Each Parlay PoS block reward is split to 60% assigned to PrimeNodes and 40% assigned to staking nodes.

4.1.Rewards Threshold

PrimeNodes has better Return on Investment (ROI) than Staking Node if Image 3



(Image 3 : Parlay's Proof of Stake Incentive System)

4.2.Specification

Symbol	:	PAR
Algorithm	:	Scyrpt
Max supply	:	30,000,000 Parlay
Block time	:	90 seconds
***Block Rewards**	:	20 PAR
Reward distribution	:	PrimeNodes 60% / Staking Node 40%
PrimeNodes Collateral	:	2,500 PAR
Difficulty retargeting	:	every block
Block Maturity	:	88 blocks
Transaction Confirmation	:	10 blocks
****Premine**	:	0.5%

* **Inflation Adjustment** : 10% reduction by every year

1st : 345,600 Block

2nd : 691,200 Block

3rd : 1,036,800 Block

4th : 1,382,400 Block

5th : 1,728,000 Block

Max supply : 1,855,288 Block

**will be used for bounties, exchange listings, masternode listings, promotion campaign, and Parlay Prize

5.Roadmap

Q1 2018

Whitepaper V1.0

Parlay Wallet Test

Q2 2018

Mainnet Launch

Parlay QT Wallet

Bounty Program

List on Exchange

Parlay.Live Pilot Test (2018 Russia FIFA WorldCup)

Q3 2018

Whitepaper V2.0

Mobile Wallet

Parlay.Live System Development

ParlayGate (Public/Private API)

Q4 2018

Marketing Partnership

Web Wallet

Enterprise Engagement

Contact

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Twitter : https://twitter.com/ParlayChain

Discord Channel : https://discord.gg/CK38myY

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