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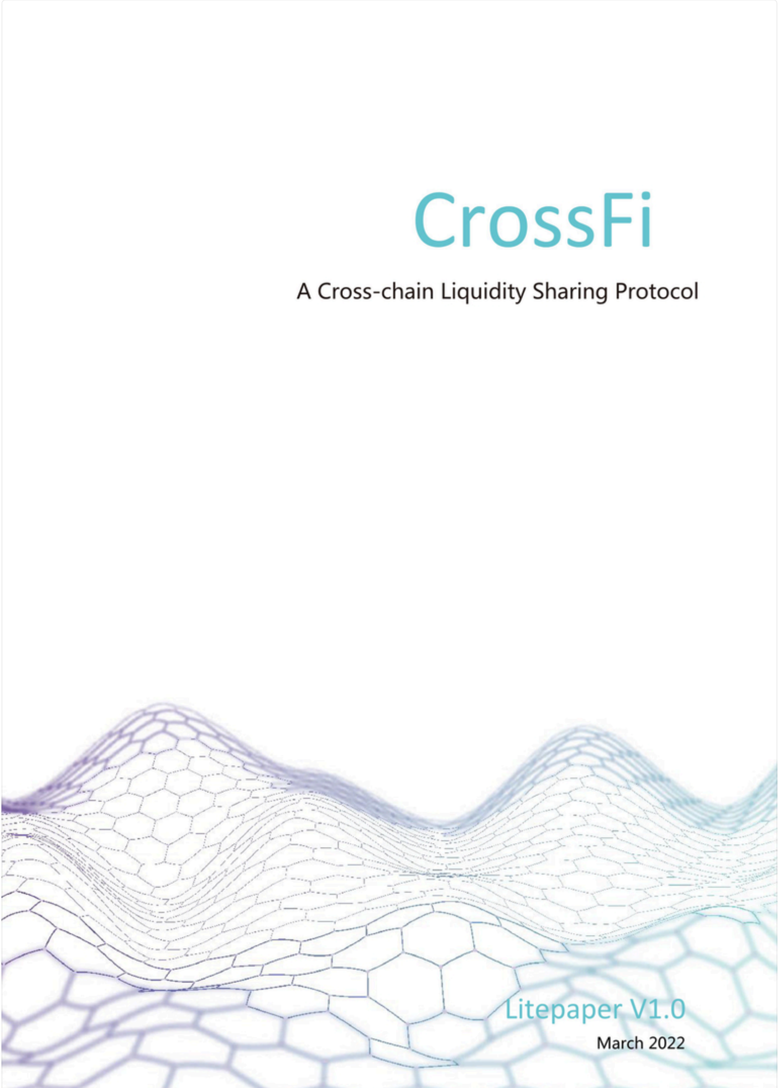

CrossFi

A Cross-chain Liquidity Sharing Protocol

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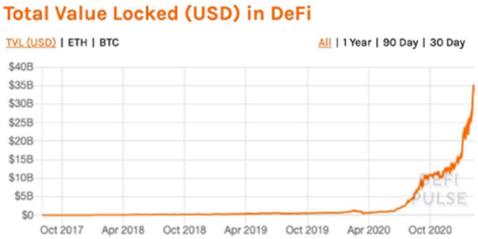
Abstract

CrossFi is a decentralized asset lending and liquidity sharing protocol based on world-leading interoperability technology. Aiming to connect all the isolated assets and liquidity of all existing public chains, and committed to breaking the technical obstacles for those isolated assets, CrossFi will provide sufficient asset value and liquidity support for the further development of cross-chain DeFi, and truly create a WEB3 driven value Internet ecology based on multi-assets interconnection.

Preface

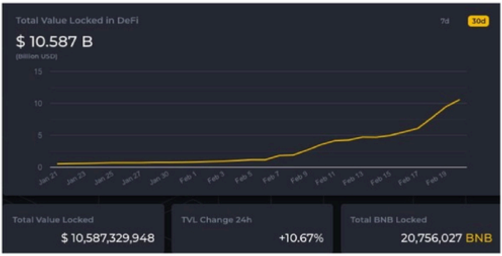
DeFi has become the core engine driving the prosperity of the entire cryptocurrency industry. From the global peer-to-peer electronic cash system initially created by Bitcoin to the rise of the smart contract powered systems represented by Ethereum, DeFi is moving from the most basic transfer and payment functions onto the rich and diverse application scenarios such as lending, swaps, financial derivatives, insurance, and prediction markets. Moreover, Ethereum has become an open test field for various genius financial products. Cryptopunks have carried out a series of bold attempts to create the algorithm controlled stablecoin, the rebase mechanism for example, as the native on-chain innovation to hedge the market volatility, which fully shows that DeFi still owns the enormous exploration space and potential in the long run and is potential to trigger a truly global financial innovation under the framework of open finance. Up to now, according to DeFi Pulse, the DeFi data tracking and statistical website, the entire DeFi industry has shown explosive growth since 2020. According to incomplete statistics, the Total Locked Value (TVL) of the entire Ethereum ecosystem has exceeded $33.3B dollars.



TVL in Ethereum (Source: DeFi Pulse)

However, the above data still cannot show the full landscape of the entire crypto-asset industry. At present, DeFi is mainly concentrated on Ethereum. The asset utilization rate on other public chains is still low and has not been well released

and utilized. For example, according to the data of Defi station, the TVL on Binance Smart Chain has broken through a record high, and the total locked value has exceeded$10B dollars.



TVL in BSC (Source: Defistation)

However, these accumulated huge liquidities are still isolated from each other and cannot release greater value through free circulation. The core reasons are as follows:

The Immaturity of Cross-chain Technology

In the past few years, despite the rapid development of cross-chain technology, there are still shortcomings such as high cost, low security, and a high threshold for use. Its development difficulty is much higher than that of DAPP based on smart contracts;

Insufficient Liquidity of Assets

In the process of asset interoperation a different cross-chains, it is often necessary for each public chain to provide sufficient liquidity support, otherwise, public chain users with sufficient liquidity (such as Ethereum users) will not have any incentive to transfer assets to public chains with insufficient liquidity because of the liquidity risks;

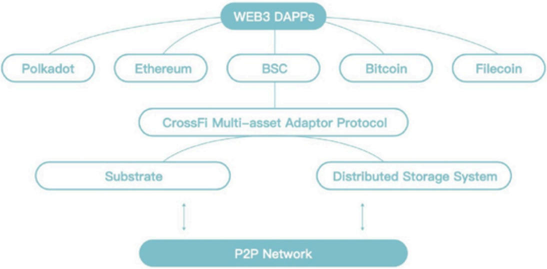
The Incomplete Supporting Infrastructure

For the cross-chain ecology, what is needed is not only the realization of cross-chain technology but also the creation and improvement of a series of infrastructures including cross-chain wallets and liquidity acceptance dealer systems. It is necessary to provide users with access to convenience, security, and liquidity.

CrossFi is a financial public chain protocol serving WEB3. It will connect all isolated assets and liquidity of existing public chains based on the decentralized asset lending and liquidity sharing protocol based on cross-chain interoperability technology, and is committed to breaking the current liquidity barriers between all mainstream public chain assets and providing abundant asset value and liquidity support for the further development of cross-chain DeFi.

Architecture

The vision of CrossFi is to utilize the existing mature WEB3 technical framework to build a stable and reliable cross-chain liquidity sharing protocol for isolated assets, which mainly includes the following core parts:



The layered architecture of CrossFi

Multi-Asset Adaptor Protocol(MAP)

The Multi-asset Adaptor Protocol(MAP) is the core component of CrossFi, and will become the infrastructure of the entire cross-chain asset lending and liquidity sharing network, used to bridge the value transmission of major public chain assets. If the public chains are not compatible, users will be able to bridge the assets of non-compatible public chains with the help of the MAP adapter network. Therefore, CrossFi's Multi-asset Adapter Protocol will be a public chain jointly maintained by a series of independent net-work nodes. Each network node will run a unified optimized state transition function and consensus algorithm to ensure that the network can efficiently and scalably serve the verification and transfer of assets a cross-chain. In addition, the public chain will use a universal public/private key pair to form an accounting system and will be compatible with Ethereum's smart contract virtual machine.

For the adapter network, node operators need to stake a certain amount of CRFI token (CrossFi's native token) and maintain the latest version of the node software to join the consensus network. Any cross-chain assets transferred to the network will be jointly guarded by the entire node network to ensure asset security. Any transactions, transfers, mortgages of assets must be safely confirmed through secure multi-party calculations and threshold signatures.

Considering the maturity and universality of cross-chain technology, CrossFi will give priority to construction based on substrate. Substrate is an open-source blockchain development framework developed by Parity, which can help developers build a fully-functional blockchain network in a short period of time. Its basic modules include, but are not limited to, plug in consensus, an upgradeable operating environment, and high efficiency state machine, a P2P network layer, etc. For developers, the use of substrate can greatly reduce development costs, save time and effort for repeated development, and also support rapid docking and deployment of blockchain networks to the Polkadot network.

Docking Module

A docking module consists of two parts. One is the standard asset interoperability interface based on the CrossFi adapter chain, and the other is the module deployed on the public chain that needs to receive and send assets, usually written in smart contracts or scripting languages. At the same time, the docking modules will also cross-validate their own data with data provided by other oracles or API networks to improve the data security.

Supervision Network

The supervision network is a guardian network composed of randomly selected independent nodes (off-chain workers). They mainly make profits by discovering vulnerabilities (data and code vulnerabilities) and errors and betting against validators. It will form the last line of defense of the entire CrossFi system, but the challenge action can only be activated by depositing a certain amount of CRFI tokens into the challenged contract for both participants involved. The result of the challenge will be arbitrated by the entire network and permanently written into the block record.

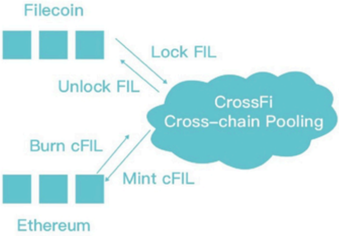
Cross-chain Lending and Liquidity Sharing

CrossFi is committed to building a universal lending and liquidity sharing protocol based on cross-chain interoperability technology, which will become a circulation bridge for major isolated public chain assets, thereby providing the necessary infrastructure for the WEB3 ecology.

Cross-chain Asset Lending

CrossFi will provide the necessary tools for the cross-chain liquidity sharing of major public chain assets. For example, it will lock the native asset on the primitive chain, then map and release the projection token on the target chain through cross-chain mapping technology. Through this mechanism, CrossFi will be able to provide users with a simple, efficient, and secure cross-chain asset lending service. Users only need to mortgage their assets in the primitive public chain connected to the CrossFi docking module, and then they can access any other financial services like lending/borrowing freely on the target chain. CrossFi's adapter network will automatically completes the cross-chain mapping and lending functions of assets.

For example, Filecoin is currently the well deserved leader of the distributed storage track, but its native asset FIL can only be circulated in its own public chain, and cannot be connected to the current mainstream Ethereum DeFi ecosystem, nor can it be empowered by DeFi financial tools. In the CrossFi ecosystem, Filecoin holders will not have to sell FIL tokens, but only need to stake on the corresponding platform, then the FIL held by them will be locked in the Filecoin network and its projection token cFIL, with an equivalent value to FIL, will be released in the Ethereum chain according to the collateral rate. This cross-chain mapping process is a two-way reversible process. Users only need to send the cFIL to the redemption contract to burn off, and the locked FIL token will be redeemed and unlocked in the Filecoin network after paying a certain settlement fee.



Cross-chain Synthetic Asset Markets

In the CrossFi system, users can stake the system's native asset CRFI, mint cUSD stablecoins at a certain mortgage rate, and then trade virtual synthetic assets through cUSD. The way of synthetic assets will allow users to access the following services:

Trading Off-chain Assets in CrossFi

CrossFi can track real-time price changes of off-chain assets like stocks by synthesizing assets, allowing users to enjoy the profits brought about by asset price changes without having to hold the actual assets themselves. Due to the globalization and permissionless features of the blockchain, CrossFi will have a huge advantage in internationalization, and it can also provide the world's unbanked users with the ability and opportunity to participate in the traditional asset trading market

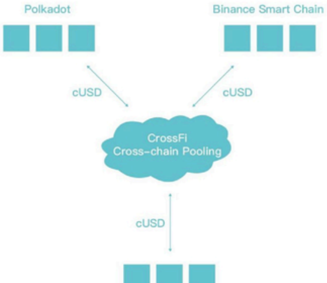
and obtain benefits. In order to mint and trade synthetic assets, CrossFi requires a collateralization ratio of 200% and creates a debt denominated in the collateral asset. If the value of the asset is lower than the minimum collateral requirement, the system will automatically liquidate the minted synthetic assets to hedge the market risk.

Synthetic ETF

CrossFi will allow users to mint cUSD and form a synthetic ETF by combining the price of certain assets. The asset portfolio can be native crypto assets or traditional assets. The price of the asset will be provided and secured by a decentralized oracle, and the price will fluctuate with the price of the asset portfolio. Users can profit from the rise and fall of synthetic asset prices, or through arbitrage between the price difference between synthetic assets and real assets.

Cross-chain Zero-slippage Swap

Synthetic assets can be traded without slippage. Therefore, the cross-chain liquidity pool built by CrossFi will be able to provide zero-slippage swap services for cross-chain block asset transactions. The basic principle is: First, the assets need to be transformed into the responding synthetic assets in the asset docking module, where synthetic assets are calculated and marked in the basic value unit cUSD. Then, any synthetic asset could transform with each other without loss as simple as mathematical factorization (the so called zero sliperage swap). Therefore, for cross-chain asset trading at scale, the main cost will come from the service fee during the minting and redemption of synthetic assets. In this transaction process, since the settlement of synthetic assets is not real-time and synchronous, any unsettled swap will mint a specific NFT token to indicate until the entire transaction process is completed.



Schematic diagram of cross-chain synthetic asset trading

Token Economics

In the CrossFi ecosystem, all synthetic assets use the native token CRFI as the only collateral asset. Users can stake CRFI tokens with a collateral ratio of 200%, and at the same time mint the basic synthetic asset value unit cUSD (1:1 pegged to US dollar). After the user mints the basic synthetic asset unit cUSD, it can be exchanged for any advanced synthetic asset based on it, such as synthetic bitcoin, synthetic ether, synthetic stock or synthetic asset ETF.

In the initial stage, in order to effectively control the debt risk in the entire system, a large number of other assets will not be introduced as collateral assets. In the future, even if other collateral assets (such as BTC or ETH) are introduced, an independent debt pool will be created to control the system risk.

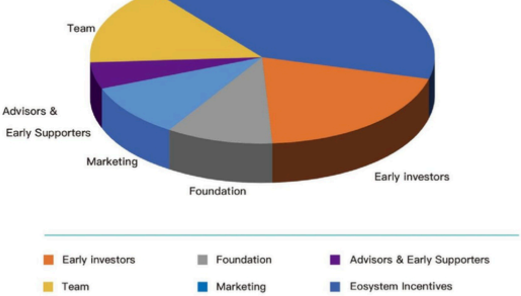
In addition to serving as the only collateral asset, CRFI will also serve as a native asset providing incentives for the nodes of the entire network, and also acting as the payment medium and value unit of on chain services such as on chain transfer, transaction, asset minting, and burning.

In order to further incentive users to mortgage assets, a certain percentage of the fees in the entire CrossFi system will be drawn to a common fee pool, and then distributed to all CRFI token stakers. In addition, only users who have staked CRFI tokens can activate the right to participate in the community governance of CrossFi. CRFI tokens will have an annual inflation rate of 5%-10%, of which 80% of the inflated tokens will be allocated to all CRFI token stakers, and the remaining 20% of the new tokens will be allocated to the Stabilization Fund to hedge the market risk.

Token distribution of CRFI is shown as follows:

CRFI is the only native utility token. The total supply of CRFI tokens is 100 million, and the distribution is as follows:

CRFI Token Distribution



- **Early Investors** 20%
- **Foundation** 10%
- **Marketing** 10%
- **Advisors & Early Supporters** 5%
- **Team** 15%
- **Ecosystem Incentives** 40%

Governance

The entire CrossFi ecosystem includes the following roles:

The Validators in MAP Network

The MAP(Multi-asset Adapter Protocol) network is the core of CrossFi, powering the cross-chain transaction, lending, and liquidity sharing. The validator node in the network is mainly responsible for validating all on-chain activities (such as transactions) to ensure network security.

Supervision Nodes

The supervision network is designed to be the guardian mainly responsible to double check the on chain transactions in the entire CrossFi network, to prevent corruption of the nodes like performing unfair transaction verification signatures.

Asset Acceptor for Docking Modules

CrossFi deploys an asset docking module system driven by scripting language or smart contract in each public chain, which is mainly used to convert the native assets of other public chains into the CrossFi ecosystem. Therefore, the acceptor node often needs to undertake the asset acceptance and will ensure asset security through the threshold signature of multiple nodes and the secure multiparty calculation. In addition, the acceptor not only requires a certain amount of CRFI native tokens to stake but also requires a certain amount of corresponding public chain assets to be locked in the Docking Module.

CrossFi is committed to becoming a decentralized cross-chain asset lending and liquidity sharing protocol. Therefore, a specific governance module will be developed for the community, allowing CRFI token holders to participate in voting by staking CRFI tokens at any time. However, there will be an unlocking period of 14 days.

Roadmap

2021.Q1

The beta version of the lending platform is online.

2021.Q2

Launching one-stop .
Lending platform.

2021.Q3

Test docking modules on the mainstream public chain.
Launch of the Crossfi Swap Opportunity(CSO) plan.

2021.Q4

Launching multi-asset network switching protocol & the L2 integrations.
synth-based markets DEX Development.

2022.Q1

Expand the application ecosystem of CrossFi.

2022.Q2

Dex, liquidity mining and staking dividends will be launched on BSC, ETH, Near networks; IDO will be launched online; Launch the aggregation transaction function based on the AMM model.

2022.Q3

The NFT trading market will be released launched on the BSC, ETH, and Near networks.

2022.Q4

Promote the development of DEX business.

2023-

Expand the ecological development of CrossFi.