izumi Finance Litepaper V2.0

Introduction:

izumi Finance is a platform providing liquidity as a service with Uniswap V3 and a built-in multi-chain dex. Izumi Finance proposes innovative liquidity mining protocols to help protocols attract liquidity efficiently by distributing incentives in certain price ranges.

izumi Finance provides “Liquidity as a Service” (LaaS) based on Uniswap V3, designed to solve two problems: incentive inefficiency and pool 2 dillema.

izumi enhances incentive efficiency by supporting “non-homogenous” Uniswap V3 liquidity mining and enables protocols to distribute incentive rewards in certain price ranges. E.g., Stablecoin pools only pay out incentive rewards within a narrow price range (0.99,1.01).

izumi solves “pool 2 dilemma” problems by providing structured-incentive and auto-rebase modules, which could attract more liquidity with low emission rate for protocols while enabling non-impermanent liquidity mining for liquidity providers.
(Pool 2 dilemma - high APR liquidity mining incentives in pool 2 usually brings high inflation rate and sell pressure)

Liquidity as a Service (LasaS) Roadmap:

a.LaaS on Uniswap V3: v3NFT Farming

The izumi Finance v3NFT Farming provides non-homogeneous liquidity mining (LM) tools with Uniswap v3 LP NFT, which enable protocols to provide incentives precisely and efficiently in certain price ranges, which can optimize liquidity distribution and encourage users to stake Uniswap V3 LP tokens to earn extra rewards.

b. Concentrated liquidity service on bridge: C-AMM Bridge

Fast, decentralized, auto-rebalance cross-chain bridges are needed in the multi-chain era. izumi plans to establish a C-AMM bridge to make the cross-chain transaction cost less than 1 minute and with a low gas fee. Cross-chain safety will be guaranteed by multi-validator relay networks, which are decentralized and transparent.

c. Concentrated liquidity service on multi-chains: Discretized Liquidity DEX

Extend concentrated liquidity service like Uniswap V3 to other layer2 chains. Range orders and "limit orders" will be available for makers to enhance capital efficiency for multi-chains.

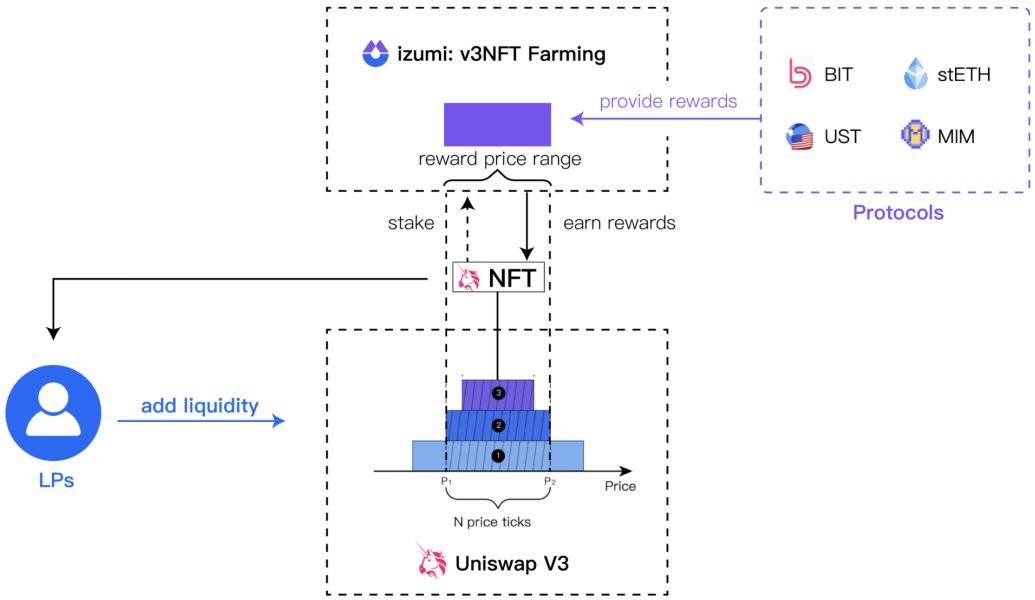
Products

v3NFT Farming

Compared with Uniswap V2 only allowing LPs to provide liquidity in the full price range from 0 to infinity, Uniswap V3 allows LPs to be within a certain price range. LPs receive NFTs (Non-Fungible Token) after adding liquidity, and due to the non-fungible nature of the positions, fee earnings are stored separately and held as tokens in which the fees are paid.

izumi team first proposed and implemented a liquidity mining scheme based on Uniswap V3 NFT LP tokens. Unlike the traditional V2 fungible LP tokens that are directly staked for mining, when designing the V3 liquidity mining incentive plan, the protocol can clearly set the value range of the incentivized LP tokens.

And after users stake V3 LP tokens to izumi protocol, izumi's smart contract will automatically determine whether the value range of the LP tokens is within the liquidity incentive value range set by the project owner. If it is within the range, the smart contract will issue a liquidity mining token reward for the liquidity provider based on the incentive program.

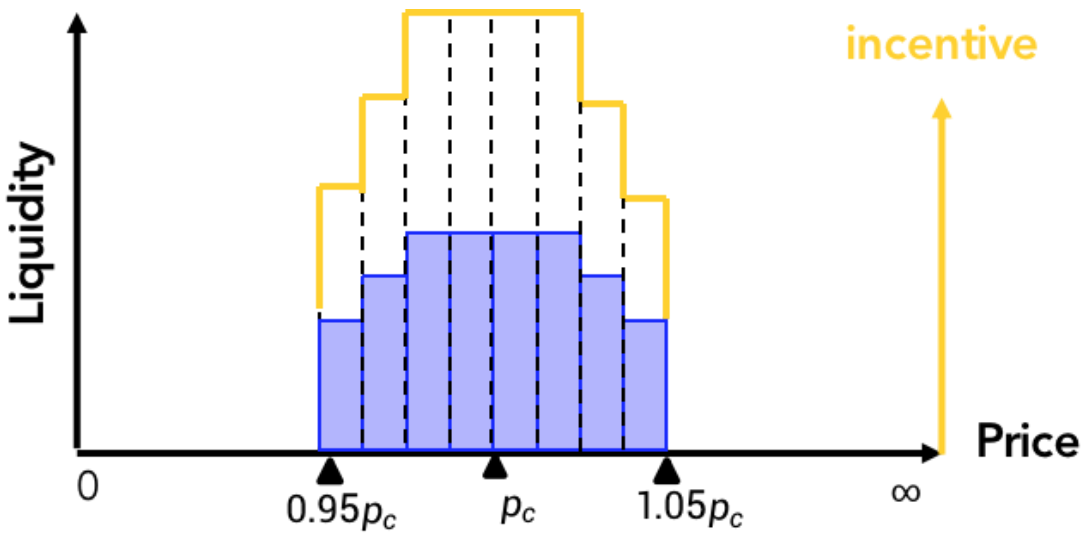


5 Models of izumi's v3NFT mining

Project parties can set up pairs and liquidity pools based on Uniswap V3 to attract liquidity more efficiently by offering rewards in a limited range and different rewards in different price ranges.izumi Finance provides a wide range of liquidity options to meet the needs of different projects.

Option 1: "**Concentrated liquidity mining model**" with fixed reward price range for stablecoin and pegged-asset

Each block in the (0.95p,1.05p) price range earns 10 tokens from the stablecoin and pegged-asset issuer. Izumi evaluates the total effective liquidity in the (0.95p,1.05p) price range and assigns incentive linearly according to the proportion held by each LP. The incentives attract liquidity to this price range, that achieves minimum slippage.



Note: If the LP provides liquidity in a price range that is over-covering (0.95p,1.05p), only the liquidity within (0.95p,1.05p) is calculated as the weight of the incentive allocation; if the NFT price range offered by the LP is inside (0.95p,1.05p), such as (0.98p,1.02p), weight penalty factor is applied.

Analysis: When compared to the xy=k model, the 0.95-1.05 interval is over 50 times more capital efficient, requiring only one-fifth of the TVL and incentives for the same slippage.

Option 2: "**One-sided non-impermanent loss mining model**" for emerging-asset to make liquidity mining more attractive when price continues going up

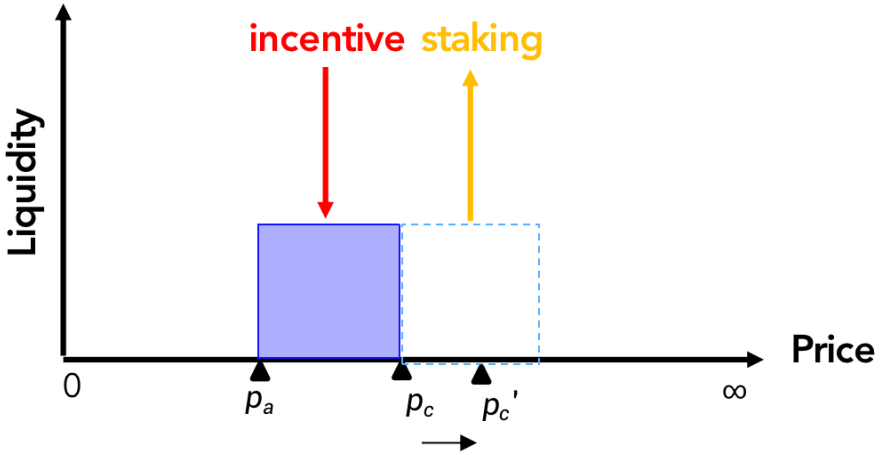
Similar to the traditional xy=k model, the LP also puts half value of the USDC and half value of the project tokens into the izumi platform to start liquidity mining with one click.

However, in order to avoid the "Pool 2 dilemma" caused by the traditional xy=k model (i.e. LP puts all USDCs as potential buy orders and project tokens as potential sell orders into the liquidity pool of the trading pair, causing LPs to passively sell their project tokens and suffer from impermanent losses when the price goes up.

It also increases passive selling pressure on the project side, preventing price increase and creating a "lose-lose" situation. izumi innovated the "one-sided non-impermanent loss" model based on Uniswap V3, which puts the LP's USDC into the (Pa,Pc), just below the current price Pc, and puts the LP’s project tokens into the staking mining instead of into the trading pool (i.e. above Pc as potential sellers), thus creating a model of "stronger buying than selling", which is more conducive to price increase.

Liquidity Provider sends 50% USDC+ 50% XYZ into izumi (as in Sushiswap and other xy=k DEX):

- **buy-side liquidity mining**: 50% USDC deployed below current price in UniV3
- **sell-side token staking**: 50% XYZ put into staking mode out of trading pool



when price goes up from p_c to p_c' there will be no impermanent loss for LP & no pasive sell pressure for protocols

For example, if the current price of XYZ token is 3 USDC, LP will deposit 1k XYZ and 3k USDC into the izumi platform in one click to mine and receive a 90% APR on the total principal (similar to the Sushiswap xy=k model). izumi manages this by placing 3000 USDC in the Uniswap V3 (0,3) price range to provide potential buying orders when the price declines. The 1k XYZ is placed in the staking module to lock in liquidity, but not in Uniswap V3, so it won't be sold passively when the price rises, resulting in no impermanent loss or passive selling pressure on the project side.

Analysis: When the price goes up, there is no impermanent loss, and when the price goes down, the percentage of impermanent loss for LP (Pa=0) is the same as xy=k. The overall distributed incentives for the project are the same as in the xy=k model. In the up cycle, passive sell liquidity is low, whereas in the down cycle, buying support is consistent (if Pa is greater than 0 then the buying power is also enhanced).

Option 3: An "active interval mining" model incentivizes non-stable tokens to provide dynamic liquidity around current prices.

Essentially, the project incentivizes LPs that provide effective liquidity around the current price, and the percentage of the project owner's reward is calculated by counting the time they are active in providing effective liquidity.

Option 4: "**Additional rewards proportional to trading fees model”** for protocols to incentivize professional market makers

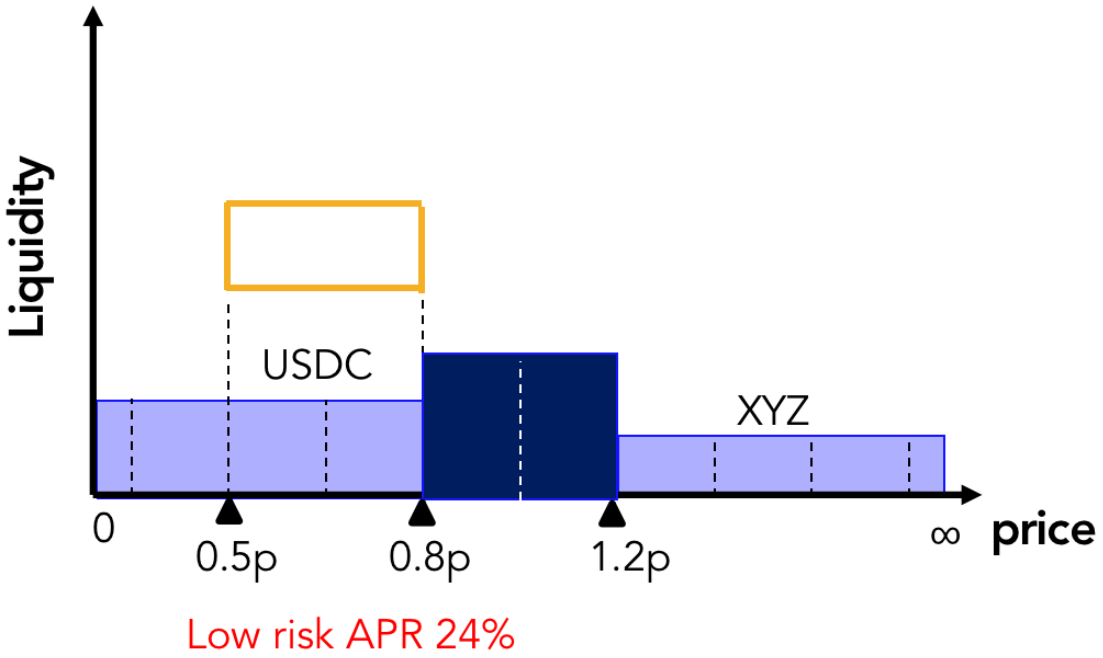
After staking Uniswap V3 NFT on the izumi platform for liquidity providers or LPs, izumi analyzes the trading fees earned by this LP NFT throughout the staking period and provides additional incentive provided by the project.

For example, a user supplies XYZ-USDC liquidity, generates an LP NFT, and stakes it on the izumi platform, and the project owner offers an additional 1X rewards on the fees during that time. The user receives 30 XYZ and 90 USDC when he withdraws the NFT and claims the commission, and he can then receive an extra 60 XYZ reward from the izumi platform.

Analysis: This program is equivalent to the project side providing additional subsidies to professional market makers, so that professional market makers can dynamically adjust their positions to the current price perimeter even if the trading fee is not enough in the early stage of low market cap tokens, and market makers could get the trading fee multiplier to achieve profit. The reason is that in Uniswap V3, Taker fees cannot be assigned to a specific Maker (LP), so as long as the market maker does not provide more than 50% of the effective liquidity and cannot reach conspiracy, the cost of fees for the market maker's fake trading (acting as both taker and maker) is higher than the platform rewards. Therefore, there is no incentive for this kind of fake trading.

Option 5: **"One-sided mining with lock-up period model”** for short put options

The liquidity provider can put liquidity within a price range, lower than Pc, on Uniswap V3 and lock the LP NFT for a period of time, which is essentially equivalent to providing passive buying support when prices fall. From the financial product perspective, it is close to short put options, which can be used as a public product that project parties pay to buy for the community, or an insurance product that lending platforms use to hedge liquidation purchases.



For example, if XYZ=3USDC and an LP places 10k USDC of liquidity in the (1.5,2.4) price range and locks the position for 30 days, the LP can receive a reward of 10k*24%(APR)*(1/12)=200USDC equivalent of XYZ at the end of the lock (66.7pcs).

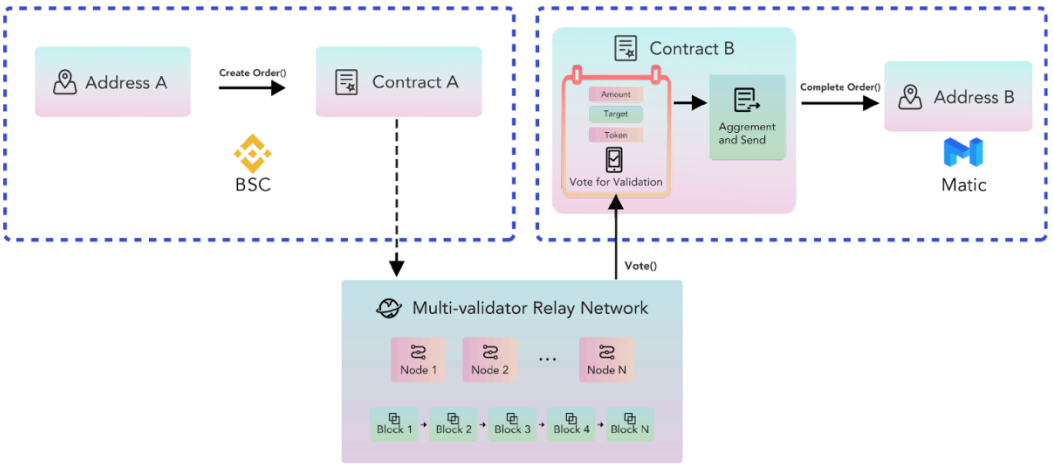
Analysis: When the price rises or does not fall below 2.4, the LP incurs no impermanent loss, which is equivalent to single token gain APR=24%; when the price falls below 2.4, the LP obtains the mining reward but bears the impermanent loss.

Note: The APR of the project side reward can be calculated using the BSM option formula and dynamically adjusted with the volatility, lock-in time, risk-free interest rate and other factors. Each cycle is limited and offered on a first-come, first-served basis.

C-AMM Bridge (experimental)

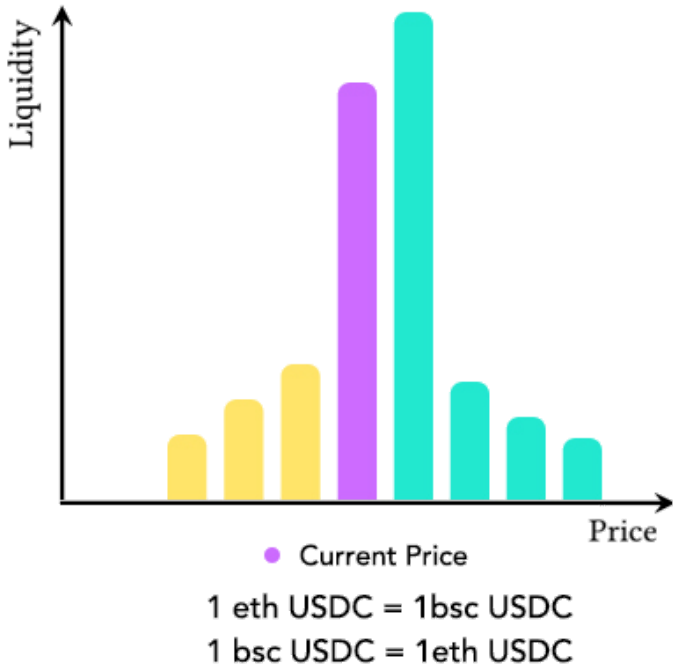
Cross-chain liquidity-swap: reserve pool of tokens on each side. The user experience will be like sending USDC to the reserve pool on ChainA and receiving USDC from the reserve pool of ChainB a while later. It shall be noted that the transferred USDC is an officially issued token instead of bridge wrapped token.

Multi-validator Relay Network: Multi validators on the Relay Network read the data in each block. When they find transactions associated with the reserve pool on any side of the bridge, they will vote and get to consensus, then send the multisig transaction to the other side.



Bridge with Multi-validator Relay Network

Concentrated-liquidity AMM: Compared with fixed exchange rate bridges which encounter empty pools occasionally, AMM bridge auto adjusts exchange rate and utilizes arbitrageurs and market power to finish the auto-rebalance between two reserve pools. And concentrated liquidity AMM is expertized at capital efficiency which is the crucial factor when liquidity is segmented into different chains.

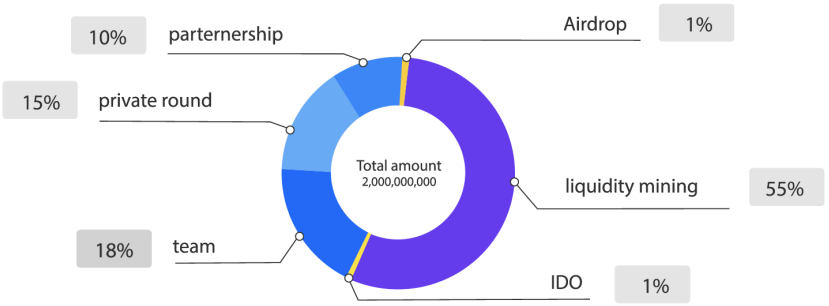


Tokenomics

Token info

a. Type: ERC-20 Token on Ethereum
b. Ticker: iZi
c. Total supply: 2 billion iZi tokens
d. Contract:0x9ad37205d608B8b219e6a2573f922094CEc5c200

Token allocation



Vesting schedule

Token Distribution	Amount of Token	% of Total Supply	Release Schedule
Team	560,000,000	18%	10% release at 6 months post initial listing date, and the rest linearly released in 18 months.
Ecosystem	1,100,000,000	55%	3% initially in Uniswap V3 and the rest released in the next 4 years
Private Round	300,000,000	15%	10% release at listing date, and then 3 months cliff, and the rest linearly released in 12 months
Partnership	200,000,000	10%	10% release at 6 months post initial listing date, and the rest linearly released in 18 months.
IDO	20,000,000	1%	after listing
Airdrop	20,000,000	1%	after listing

iZi and ve-iZi

iZi token

iZi token is izumi platform's utility token, it can be used to pay for cross-chain trading fees, incentive pool set-up and v3Toolbox usage.
Additionally, users need to stake iZi token to acquire ve-iZi token, which is izumi platform's governance token that enables holders to be eligible for a range of benefits and participate in governance.

ve-iZi token

ve-iZi is not tradable or transferable and can only be obtained by staking iZi tokens. The amount of the ve-iZi balance is based on the amount of iZi tokens locked, and the time left before the unlock. The ve-iZi balance is linearly decreasing since the time of lock. The iZi tokens locked can not be withdrawn before the timelock has expired. However, it is possible to extend the timelock or increase the amount of staked iZi tokens.

The iZi token (let amount be N) can be locked for a selectable locktime t_l, where t_l < t_max, and t_max = 4 years. After locking, the time left to unlock is t ⩽ t_l. The amount of ve-iZi token(N) is :

$$n = N \cdot (t/t\_max)$$

This algorithm sets the amount of ve-iZi to be both amount- and time-weighted, which is suitable to represent a community member's support and confidence in izumi finance.

Utility

ve-iZi token qualifies the holders for earning boosting, dividends distribution and DAO voting rights, based on the amount of ve-iZi tokens in their account.

Boosting

ve-iZi holders can earn a boost on the UniV3 liquidity mining incentives.

The boost mechanism will calculate your earning weight by taking the smallemul multiplier of the two values. The first value is simple, it's the amount of v_liquidity calculated from the UniV3 LP NFT the user staked on the izumi platform. The second value is based on the number of held ve-iZi.

Dividends

ve-iZi holders will gain a portion of the ecological revenue, and the portion will be determined by DAO governance. At the beginning, 50% of the platform revenue, including cross-chain fees and pool setup fees, will be distributed to ve-iZi holders. For the remaining 50%, it will be collected by Platform Vault and used for operation.

Proposals and Voting

ve-iZi holders can initiate and vote on DAO proposals, and the vote weight is based on the obtained amount of ve-iZi tokens at the time of casting the vote. izumi team believes that, combined with the dual-token governance system, users will jointly contribute to a better future of izumi, and will receive lucrative benefits along with the development and governance.

If you wish to create a new official proposal, you should draft a proposal and post it on the governance forum. You must research if it is possible and gauge the interest of the community via the izumi Discord, Telegram or Governance forum.

Proposals can include the use and allocation of izumi treasury funds, adjustments to important platform parameters, major development proposals and more aspects of decentralized governance of izumi.

Roadmap