Ruby.Exchange Tokenomics

RUBY Token And Gemstone NFT Issuance: Lite Paper v1.0

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June 24, 2022

Summary

- Total supply: 200 million RUBY (Ethereum mainnet/Europa SKALE Chain).
- Initial circulating supply: 2.871 million RUBY.
- XY=K liquidity pools with USDP base pair: RUBY, SKL, ETH, WBTC
- USDT/USDC/USDP/Dai StableSwap 4Pool.
- Liquidity mining rewards: 100 million RUBY tokens (50%) over five years, decreasing annually.
    - 80% rewards allocated to XY=K pools
    - 20% allocated to StableSwap
- Single-sided RUBY staking.
- 0.3% trading fees distributed to LPs (0.25%), RUBY stakers (0.04%), and burned (0.01%).
- 0.04% StableSwap fees distributed to LPs (0.02%) and Ruby Treasury (0.02%)
- Gemstone NFT user profile identifiers.
- NFT-permissioned rewards:
    - Trading fee reductions
    - LP yield boosts
    - LP early exit penalty reduction
- Reward parameters progressively to be managed by the Ruby DAO.

Introduction

This Lite Paper details the tokenomic model for Ruby.Exchange, an NFT-powered decentralized exchange (DEX) built on the SKALE V2 network for Ethereum. Ruby.Exchange went live on **June 16, 2022**.

Ruby combines several emerging technologies to deliver a feature-rich, accessible, and rewarding user experience for traders and liquidity providers (LPs). At the heart of the project is an Automated Market Maker (AMM): A smart contract that allows users to trustlessly trade against tokens locked in Ruby's pools by LPs.

Building Ruby on SKALE enables zero-gas transactions, offering the opportunity to integrate NFTs throughout the UX without the costs of minting and distribution that

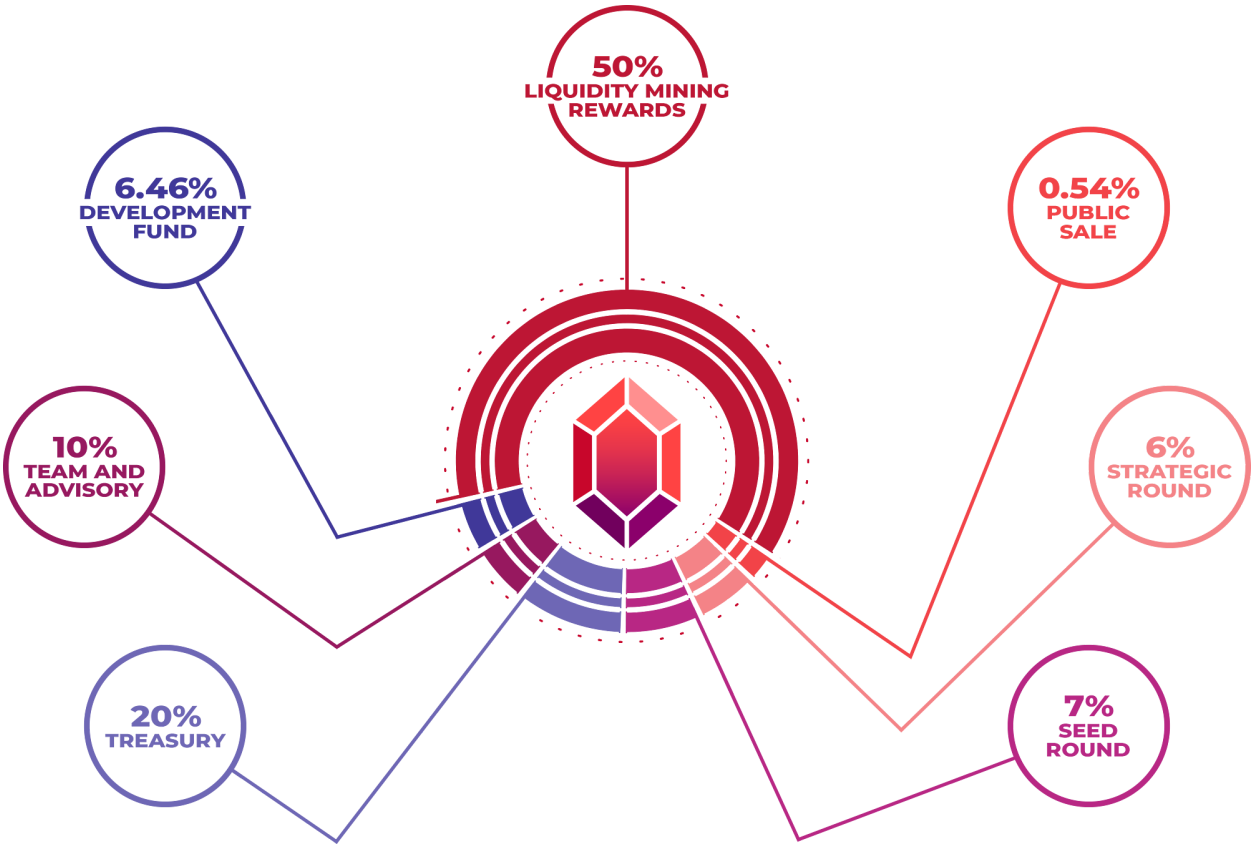
would make such functionality uneconomical on Ethereum mainnet.

Additional features include rapid confirmation times and finality, and protection against front-running built in at the network level. A fast, transparent bridge allows secure migration of tokens from Ethereum mainnet to **Europa**, the SKALE Hub Chain on which Ruby is hosted, while direct transfers between SKALE Chains are free and near-instant.

Ruby DAO will distribute RUBY platform tokens as rewards for liquidity providers. The introduction of gemstone NFTs will modify the rewards received by different stakeholders, providing new ways for traders and liquidity providers to earn.

RUBY Token Supply And Distribution

The RUBY token will be a non-upgradeable ERC20 token, minted on Ethereum L1 with a **fixed supply of 200 million**. Following Ruby's token generation event (TGE), no more RUBY will be created.



ALLOCATION	UNLOCK	VESTED
SEED	1-MONTH CLIFF	VESTED LINEARLY OVER 18 MONTHS
STRATEGIC	1-MONTH CLIFF	VESTED LINEARLY OVER 12 MONTHS
PUBLIC SALE	FULL	
LIQUIDITY MINING	0%	EMITTED OVER 5 YEARS
TREASURY	0%	ACCORDING TO DAO VOTES
DEV FUND	5%	95% VESTED LINEARLY OVER 24 MONTHS
TEAM / ADVISORY	6-MONTH CLIFF	VESTED LINEARLY OVER 24 MONTHS
INITIAL CIRCULATING SUPPLY: 2,871,426.92 RUBY (1.435%)		

RUBY vesting will take place on the SKALE network due to the flexibility and efficiency enabled by gasless transactions.

Liquidity Pools And Staking

Ruby will offer multiple XY=K liquidity pools with RUBY liquidity mining rewards, as well as the StableSwap 4Pool. Selected pools will offer SKL rewards. There will also be single-sided RUBY staking.

Liquidity Mining

Ruby.Exchange will distribute a total of **100 million RUBY** tokens as staking and liquidity mining rewards, over **five years**. Distribution will follow a "thirdening" model: Rewards

will be emitted evenly over the course of a year, and reduced by a third every successive year, with a larger decrease of around 69% in the final year.

- Year 1: 40,000,000 RUBY (3,333,333.33 RUBY per month)
- Year 2: 26,666,666.67 RUBY (2,222,222.22 RUBY per month)
- Year 3: 17,777,777.78 RUBY (1,481,481.48 RUBY per month)
- Year 4: 11,851,851.85 RUBY (987,654.32 RUBY per month)
- Year 5: 3,703,703.70 RUBY (306,172.84 RUBY per month)

Of these rewards, 20% are allocated to LPs who supply liquidity to Ruby's StableSwap 4Pool, with the remaining 80% allocated to the XY=K pools. At launch, the allocation of rewards across pools is as follows:

- RUBY-USDP: 24% of total allocated rewards
- ETH-USDP: 20%
- SKL-USDP: 18%
- WBTC-USDP: 18%
- StableSwap (USDP, USDT, USDC, Dai): 20%

Staking And Locking

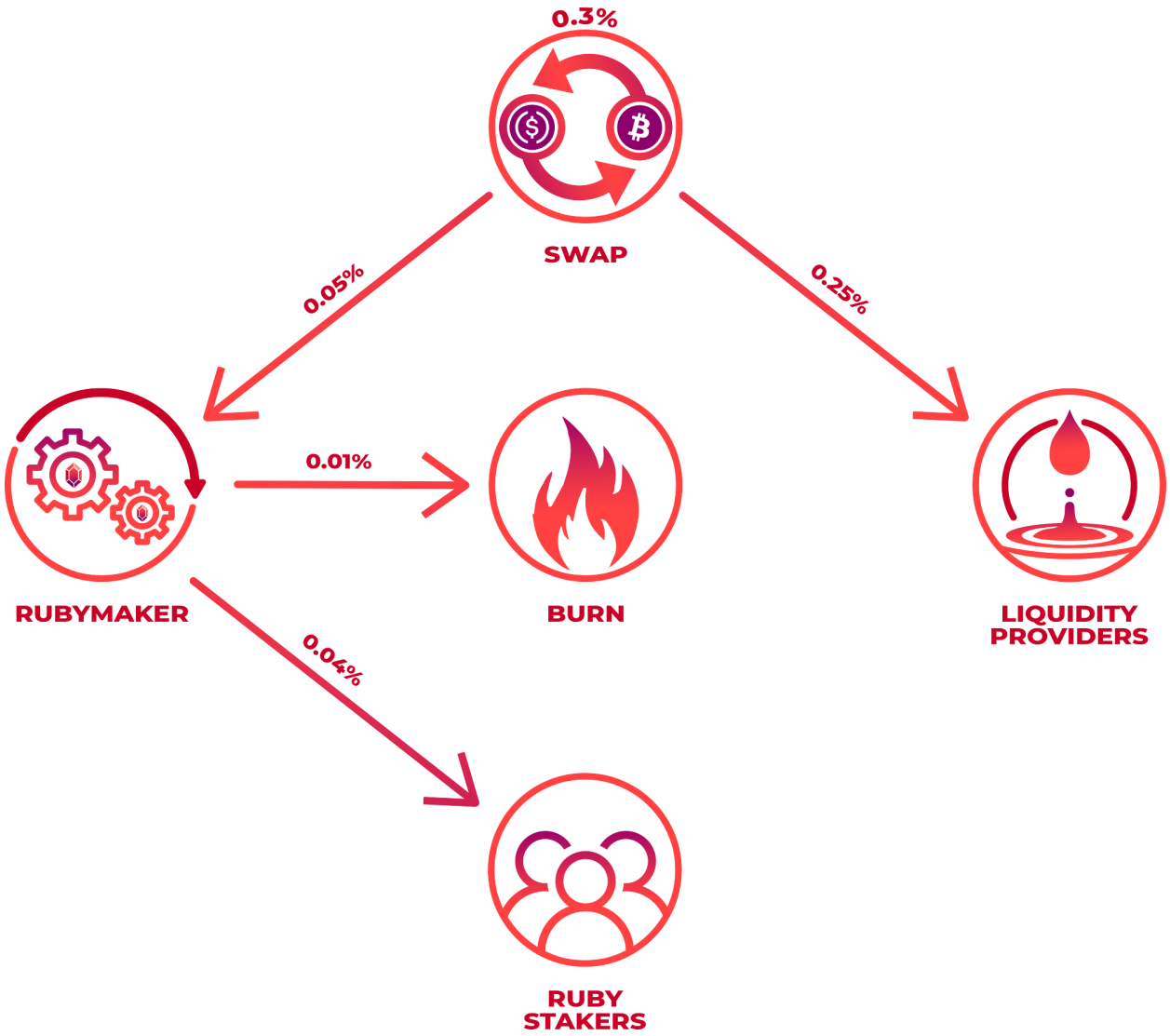
Ruby.Exchange supports single-sided staking, with two options for RUBY holders:

- Stake RUBY with no restrictions. Users will earn a share of 0.04% of every swap made on Ruby.Exchange, taken from the default 0.3% swap fee, proportional to their stake. Tokens can be unstaked at any time.
- Lock RUBY for three months. In addition to earning the same share of trading fees as stakers, users will receive the 50% fees that yield farmers pay to access their rewards before their vesting claim completes.

Ruby Swap Fees

Traders are charged a default commission fee of 0.3% on every swap that uses one of Ruby's XY=K pools, and 0.04% for every StableSwap trade. These fees are divided between **Liquidity Providers** (LPs) for those pools, and the RubyMaker contract, which distributes a percentage of fees to RUBY holders who have staked their tokens. LP rewards are locked for three months. LPs who want to access their earnings before the end of this vesting period can do so by paying a 50% penalty fee.

RUBY Stakers can opt to receive their rewards immediately, with no restrictions. Alternatively, they can lock their RUBY for three months and receive a higher rate of rewards, paid for by the 50% early-exit penalty fees for LPs.



NFT Tokenomics

Ruby.Exchange integrates gemstone NFTs throughout the platform's UX to increase stickiness and create a rewarding, feature-rich user experience. Gemstones will initially be used for two purposes:

- **Profile gems**, to be displayed as user identifiers.
- **Reward gems**, with three different functions: **Trading fee rebates**, **LP reward boosts**, and **Reduced early-exit penalties** on yield farming earnings.

These NFT-permissioned rewards are paid for by adjusting the distribution of the fees charged on every swap to different platform stakeholders.

At launch, **Zero-fee trading NFTs** will be available via raffles, with the other two gemstone types added in the future.

Profile Gemstones

Upon completing their first trade on Ruby, every user will receive a profile gemstone, generated at random using a wide range of parameters including color, shape, edge brightness, roughness, wear, and other properties.

Addresses without an profile NFT will automatically receive one upon conducting their next transaction, so new gemstones can be minted simply by burning NFTs or sending them to another account. Unwanted profile gemstones can be traded on Ruby's NFT marketplace, to be implemented at a future date.

Traders: Fee Rebates

The first category of reward gemstone reduces the commission fee (default 0.3%) that traders pay on every swap. There are no limits on the size of the swap to which these NFTs apply.

Initially, this will be implemented as a full rebate: Users who hold the gem will not pay

any trading fees.

In the future, partial fee rebates will be implemented, with a series of gems that reduce traders' fees by varying amounts. The balance of the fee charged will be distributed in the same proportions as before (83% to LPs, 13% to RUBY stakers, and the rest burned).

For example, if the fee is reduced from 0.30% to 0.21%, LPs will receive 0.175%, stakers 0.028%, and 0.007% will be burned.

LPs: Reward Boost

Liquidity providers receive 0.25% of the total 0.3% trading fee by default. This is implemented at the point that liquidity is deposited to Ruby's AMM pools: A percentage of LP tokens is minted to the liquidity provider, with the remainder sent to the RubyMaker contract. The LP Rewards NFT increases the percentage allocated to the liquidity provider, meaning they receive a larger fee from every swap conducted on the platform. The remainder of the fee is distributed to stakers and burned in the same proportions as before.

Each LP Reward Boost gem can be used to lock a certain maximum amount of funds. The gem expires after it has been used, ensuring it cannot be used to increase rewards on unlimited liquidity.

LPs: Reduce Unlock Penalty

Rewards claimed by LPs are locked for a three-month vesting period. However, LPs can opt to receive their rewards immediately, at the cost of a 50% early exit fee. A third category of NFT reduces this penalty, giving LPs instant access to higher rates of rewards.

Because these three NFTs involve altering the allocation of swap fees, their use requires no additional RUBY rewards to enter the system. Like profile gems, reward gems can also be bought and sold on the NFT Marketplace.

Gemstone Raffles

NFTs are allocated at random via a simple raffle process controlled by a smart contract. Each raffle runs for a specified period of time, with a set number of tickets, and a set ticket price. A raffle has at most one NFT as its prize, and so the number of tickets issued effectively determines the odds of winning.

The smart contract uses the BLS signature included in every SKALE block as a random number generator. Because this is a threshold signature, it represents a trustworthy and decentralized source of randomness that cannot be front-run by an attacker, whether a user or a rogue network validator.

The raffle framework is designed to be flexible, allowing cash prizes (RUBY, USDC, etc) to be paid out to winners, as well as an NFT prize. Where multiple NFTs of the same type and value are to be distributed (for example, a series of 10 gemstones that reduce trading fees), the required number of raffles is simply held consecutively, with the next one starting when the previous one has been won.

Raffle Mechanics

Each raffle is initialized with a configurable number of tickets. Users can buy one or more tickets. Ticket numbers are randomly generated, or selected manually by the user from available remaining tickets, rather than being issued sequentially by the contract.

At the end of the raffle, a specified number of tickets are drawn in order (first, second, third place, etc).

If a user holds a ticket with the same number as one drawn for a prize, they win the prize allocated to that place. If a winning ticket number has not been bought by any user, the ticket is not redrawn and the prize for that place instead goes to the treasury.

There are two types of prize for every raffle:

1. A percentage of the "pot", or the total value of all tickets purchased for the raffle.
2. An NFT (optional).

First place wins a percentage of the pot and the NFT, while the remaining places win only percentages of the pot.

Because a percentage of the entry fees for each raffle can be burned, gem distribution can be net deflationary for the platform, and is never inflationary.

Raffle Configuration

The following variables can be configured for each raffle:

- The currency used to purchase tickets. The default currency is RUBY.
- The price of each ticket in the purchase currency.
- The address and id of the NFT to award for first prize. This can be disabled (i.e. there is no NFT prize) by setting it to zero.
- The percentage of the pot that will go to each prize place (maximum ten prizes).
- The percentage of the pot to be burned.
- The percentage of the pot that will go to the treasury, or another specified address. This address also receives any prizes for which a ticket has not been purchased.
- The total number of tickets to be generated.
- The duration of the raffle in seconds. The raffle will end after this time, regardless of whether all tickets have been sold.

Example Raffle

A raffle is initialized with:

- 1,000 tickets
- Tickets are priced in RUBY tokens
- The purchase price for a ticket is 1 RUBY
- A gemstone NFT is specified for the prize
- Four prizes are specified for first, second, third, and fourth places: 35%, 25%, 15%, and 10% of the pot respectively (total 85%)
- 5% of the pot is to be burned
- 10% of the pot goes to the treasury address
- The raffle will last for 24 hours

The raffle begins and users purchase 780 tickets for a total of 780 RUBY. The raffle ends after 24 hours with the remaining tickets sold.

Four ticket numbers are drawn: 201, 438, 778, and 955.

- Ticket 201 has been purchased and the holder receives the first prize of 35% of the pot, or 273 RUBY, and the NFT prize.

- No one has purchased ticket 438, so the second prize (25% of the pot or 195 RUBY) goes to the treasury address.
- Ticket 778 has been purchased and the holder receives the third prize of 15% of the pot, or 117 RUBY.
- Ticket 955 has been purchased and the holder receives the fourth prize of 10% of the pot, or 78 RUBY.
- 5% of the pot, or 39 RUBY, is burned.
- 10% of the pot, or 78 RUBY, is sent to the treasury address, in addition to the 195 RUBY from second prize.

Any prize (including NFTs) can be claimed by the winner indefinitely. There is no deadline.

Example Use Cases

Alice wants to deposit $50,000 in RUBY and USDP to a liquidity pool. In return, she will receive an LP token that pays her a share of the 0.25% of every swap allocated to liquidity providers. Alice enters a raffle and wins an NFT that increases this share by 0.02%—an 8% increase on the default amount.

Bob runs a bot that he estimates will place trades totaling $1 million in volume in a year. He knows that he will pay 0.3% commission fees, or a total of $3,000. Bob wins an NFT that reduces this to 0.24%. This represents a 20% rebate, saving him $600 on $1 million trading volume.

Charles has earned 10,000 RUBY from yield farming. Under normal circumstances, claiming these entails a three-month vesting process. He would like to access the funds immediately, but knows that this will cost him 5,000 RUBY. Charles purchases an NFT from the marketplace that allows him to reduce the penalty from 50% to 30%. He accepts the 3,000 RUBY penalty and unlocks the remaining 7,000 RUBY early.

Additional gemstone functionality will be implemented in the future, including NFTs for unlocking premium features, copy trading and social sharing identifiers, and status badges.

Ruby DAO

As the community grows, responsibility for all Ruby token economic decisions, as well as the overall development and maintenance of the platform, will be handed fully to the Ruby DAO.

Any updates that need to be made to the emission schedules for RUBY tokens and reward NFTs will be informed by a number of internal and external factors, and may adjusted on an ongoing basis if governance decides. Over time, as the Ruby economy stabilizes, updates are expected to be required less frequently.

Find Out More

- Ruby.Exchange
- SKALE Network
- What Is An AMM And What Makes Ruby.Exchange Special?
- How Ruby.Exchange Works: A 30,000-Foot View