Thorstarter: Incubator and Rune Liquidity Relayer

www.thorstarter.org

Abstract: Thorstarter is a decentralized protocol to increase and relay liquidity through the native Thorchain network. It allows users to efficiently and safely swap long tail crypto assets, and allows any smart contract enabled blockchain to access liquidity from any other Thorchain-compatible chain.

Thorstarter will act as an IDO platform for new projects, providing them with deep liquidity right from the start. Alternatively, Thorstarter will enable existing projects to reach investors and participants across multiple blockchains by creating a liquidity pool for their token paired with XRUNE. Thorstarter complements the Thorchain ecosystem, and benefits from its liquidity and capabilities, while also extending its utility.

Background: The Problem With Thorchain, and Our Solution

Thorchain uses an economic model to aggregate and deepen liquidity. The protocol will have important implications for the future of both crypto and DeFi. To understand these implications, we need to take a step back and look at how Thorchain works.

Understanding Thorchain

Thorchain's native token, RUNE, is akin to a form of money, effectively solving the "double coincidence of wants" problem. This is a problem that arises when two individuals wish to trade items that the other party does not want in exchange (at the same time). For example, if one individual wishes to trade a battle axe today, while another wishes to trade leather belts tomorrow, a monetary medium of exchange is needed.

In the traditional finance world, fiat money like USD is used as a medium of exchange. In crypto, currencies like ETH or stablecoins like USDT are often used instead. This is because, with tens of thousands of crypto assets available, it's not always the case that someone will want to trade your battle axe ("TOKEN-A") for their leather belts ("TOKEN-B")

at the same point in time. As such, an intermediary step and medium of exchange is required.

Thorchain provides the liquidity required to make this exchange possible, effectively enabling an "axe-to-belts" exchange in one quick, low-cost swap. This is why Thorchain claims to "bind all cryptocurrencies together with an accessible, secure, and lightning-fast bridging protocol."[#]

The Problem

There are some difficulties associated with using Thorchain, however. In fact, in its current state, Thorchain doesn't bind all cryptocurrencies together at all. Instead, it actually limits the number of available assets which can pool with RUNE and thus access multichain swaps.

Thorchain is excellent when it comes to supporting economically significant assets like BTC, ETH, and BNB, but long-tail assets cannot access Thorchain's cross-chain liquidity unless they're approved by the protocol. Not only does this make Thorchain an unfair launch platform, but it also limits the liquidity available to investors.

The Solution

A solution to this problem is therefore needed: one which supports smaller, long-tail crypto assets and creates a fairer approach to launches. This solution is Thorstarter.

The Thorstarter protocol uses XRUNE as a settlement currency between new projects (IDOs) and Thorchain's active pools. Thorstarter therefore acts as a horizontal layer for Thorchain, leveraging its established network security and unique economic model to build the next generation of the RUNE ecosystem.

In this paper, we describe the components of the Thorstarter protocol as well as the use cases of XRUNE. We will also discuss XRUNE's role in building the emerging ThorFi ecosystem in tandem with Thorchain. In this way, we believe that the existing functionality of XRUNE can be used to power the next generation of ThorFi.

Thorstarter: An Overview

The first proposed use case for Thorstarter is as an initial dex offering (IDO) platform, and as a follow-on incubator for launched projects. Initially, DeFi users looking to support new projects will be able to do so using XRUNE.

Later, users will be able to swap their tokens for a project's new tokens using any Thorchain-approved asset. A project which wishes to access cross-asset swaps via Thorstarter and Thorchain does not need to IDO on the platform; they may do so by acquiring XRUNE and pooling it with their own token. Early project selection will be handled by a governance council - called the Council of Asgard - who will refer and vet projects.

After a project is selected, an additional pool of XRUNE will be seeded together with a project's token - "ASSET" - for an initial IDO launch. The proposed distribution mechanism for provisioning liquidity and resources to Thorstarter IDOs will be discussed later.

In positioning XRUNE as a pair on both Thorchain and on AMMs on different chains, Thorstarter acts as a liquidity relayer for long tail crypto assets. Users will be able to swap cross-chain assets using an XRUNE-ASSET liquidity relay, regardless of whether or not ASSET is in an approved Thorchain pool. This will ultimately serve as an alternative to centralized exchanges (CEXs) like Coinbase and Binance and single-chain decentralized exchanges (DEXs) like Bancor, Uniswap and Pancakeswap.

An additional relay mechanism is needed to swap between assets using the underlying RUNE pools on Thorchain. XRUNE provides an effective medium to access cross chain liquidity provided by CLPs by using secondary token XRUNE to pair with base RUNE. New assets can be paired with XRUNE in new XRUNE-ASSET pools to access the same liquidity as short tail crypto majors.

In essence, Thorstarter takes the original design of Thorchain and adds a liquidity relay to it. Assets paired with XRUNE can access RUNE liquidity without needing to hit the minimum required RUNE liquidity in Thorchain pools. This allows cross chain swapping without the required RUNE depth. This will bring additional liquidity to both base RUNE and XRUNE asset pairs.

Thorstarter Provides Fair Launches and Deep Liquidity

Those unfamiliar with the core technology of Thorchain are encouraged to read the whitepaper which describes the platform, and the community resources[#] which have been built around it. Thorstarter builds on these functions, and expands them, offering advantages to each group of individuals who interact with Thorchain.

As outlined in the Thorchain whitepaper[#], and elaborated in a research survey by Oaksprout and M. Khalil[#], there are three main roles involved in the Thorchain network and several supplementary ones. Of these, three are key to Thorstarter:

- Projects
- Investors
- Voters

Thorstarter offers advantages for all three of these groups:

Projects: New projects come to Thorstarter to launch their token because of the platform's community and reach. However, they are also seeking a fair launch paradigm in which all of their nascent community can participate. Once established, projects pool their token with XRUNE on connected-chain automated market makers (AMMs) in order to enable swaps from any ThorChain supported asset to and from their token.

Investors: Thorstarter's primary end users. They will come to the Thorstarter dapp, a simple web based UI, to take part in a project's IDO, or to swap long and short tail crypto assets in one transaction.

Voters: May vote in proposals which focus on the health of the network. Voters are likely to be individuals that want to be part of the future of DeFi, and of the Thorstarter and Thorchain ecosystems.

Network Design & Economics

Like Thorchain, Thorstarter is made up of many different liquidity pools. In Thorchain, RUNE pools sit on Thorchain's native AMM. In Thorstarter, there are XRUNE pools on Thorchain as well as on external AMMs.

Thus, XRUNE has three primary functions:

First, XRUNE is paired with RUNE as a liquidity pool on Thorchain. LPs earn fees in both RUNE and XRUNE, based on the volume of transactions occurring between these assets block by block. This follows the standard rewards model of all other approved RUNE-ASSET pools on Thorchain.

Second, XRUNE is a token whose utility is early access to projects which IDO on Thorstarter. Approved projects are seeded with XRUNE liquidity by the Thorstarter DAO, creating XRUNE-ASSET pools on secondary market AMMs. XRUNE is required to participate in the initial liquidity event.

Third, XRUNE is paired with ASSETs on external AMMs, either as provisioned liquidity by the Thorstarter DAO or simply by LPs looking to gain exposure to yield. External *LPs* earn

fees based on the fee structure of the AMM where they provide liquidity. In the case of Eth-based AMMs Uniswap and Sushiswap, this fee is 0.3%. In the case of Pancakeswap on BSC, this fee is 0.2%.

Secondary Network Effects

XRUNE also has several secondary benefits for Thorstarter network participants. Primarily, it allows cheap ASSET-ASSET swaps when on the same chain, and allows for the integration of other smart contracts and DeFi protocols.

Further, a steady pipeline of high quality IDO launches on Thorstarter has the added benefit of creating buying demand for XRUNE. As Thorchain network liquidity deepens, the ecosystem fund will be further capitalized to support projects which launch in a fair, decentralized way. The Thorstarter launch sale structure and fair launch ethos has been made publicly available.

Finally, ThorFi allows access to the cross-chain superhighway by allowing the creation of virtual assets based on underlying Thorchain liquidity pools. This opens up the potential to bootstrapping entire networks and individual protocols, and positions Thorstarter as an important part of the emerging ThorFi ecosystem.

Network Security

Thorstarter utilizes the existing decentralized security framework of Thorchain. Thorstarter utilizes Thorchain network validators and nodes to ensure security, including witnessing cross chain transactions. Bonded RUNE works to ensure that network security is maintained, and malicious behavior punished.

Smart Contract Security

In order to ensure the security of smart contracts, the Thorstarter team will perform frequent security audits in partnership with the Thorchain core contributing team. We will also commission multiple paid audits from reputable audit firms.

We will observe a set of general best practices:

Preparing for failure: Our smart contracts will launch with the ability to pause for a short amount of time (a 'circuit breaker'). This will give us the time to re-deploy new, patched smart contracts, including a way for users to migrate over, should we discover any critical vulnerabilities. We will also launch a bug bounty program, encouraging security experts to find and report vulnerabilities before they are exploited.

Slow rollout and deployment: We will start with local testing when making changes to smart contracts. This will be followed by a period of testing on public testnets, where all community members will be encouraged to test our changes and report any issues. We will launch certain products and features in a closed beta before opening them to the public, in order to test security with real funds but limited risk.

Simple contracts: We aim to keep our smart contracts as simple as possible, and will avoid building future functionality into one large contract. Instead, we will add functionality only when needed, and via separate, interoperable, and equally simple contracts. We rely on a secure and audited base for reusable functionality and libraries (OpenZeppelin).

Code updates: We understand that the crypto landscape evolves fast and our practices and code needs to keep up in order to stay secure. That's why we are already using the latest version of the Solidity compiler and the latest version of the OpenZeppelin smart contracts and development tools.

Adhering to blockchain properties: All of our math is based on block numbers instead of timestamps in order to avoid timestamp dependence, and because we are cautious of reentrancy bugs arising during state transitions.

Last, we are working closely with the Thorchain team and community to audit all contracts, and to improve on the economic model of the Thorstarter network.

Governance

Thorstarter will launch as a community-governed DAO, and will evolve through two distinct epochs: The Age of Asgard, and Valhalla DAO.

This means Thorstarter will never be a company in the traditional sense. The protocol and community will be managed by the Thorstarter DAO. A "DAO first" model has been validated by other protocols, notably BarnBridge.[#] It addresses a few major challenges and concerns. This model:

- Ensures equal voting among early parties and stakeholders, limiting the possibility of errors that could jeopardize the network.
- Ensures that early voting does not exclusively benefit one individual or small group.
- Incentivizes voting by the early DAO members to carefully choose Council members who are well aligned with the project, both ethically and economically.
- Furthers the ethos of fairness, decentralization, and democratization.

The initial stage will involve a stewardship period to align all key stakeholders and grow the community organically.

The Age of Asgard

The initial period of stewardship will be conducted by 9 members elected by the DAO. The initial DAO will be based on a modified version of the Aragon Company DAO template. Aragon's code has been tried and tested, and we trust the security of its contracts. Thorstarter will be working closely with several Aragon Experts to ensure the success of the initial launch DAO.

The initial 9 council members will ensure the success and growth of Thorstarter. This group will be poetically named The Council of Asgard.

Early Council leadership will ensure that the project reaches a critical mass of investors. Over time, as the community grows and network liquidity deepens, the existing council will vote in new council members. Council seats are time-bound and require active participation in the DAO.

Confirmed members consist of Thorchain core team members, developers, Thornode operators and early supporters, institutional liquidity providers, and thought leaders in the Thorchain ecosystem.

Project Selection and Incubation

The initial onboarding of any new project will be managed by the DAO and DAO fund. Each new project, after being selected, will pass through four stages:

1) Project vetting and negotiation
2) Liquidity provision of ASSET
3) Liquidity provision of XRUNE/ASSET. This will be provided by the Treasury
4) IDO announcement and marketing

Soon after launch, the wider community of XRUNE holders will elect Council members and vote on all DAO proposals. This transition will result in what we call the Valhalla DAO.

Valhalla DAO

The final goal of the Thorstarter DAO is to evolve into on-chain governance structure called the Valhalla DAO. In this later phase, Valhalla DAO members will identify and

recommend projects, provide opportunities for liquidity pools, and adjust incentives for liquidity providers. Members of the DAO will be able to pool capital and decide which projects to support.

On-chain governance will allow XRUNE holders to propose and vote on a number of strategies via the DAO. Execution of these strategies will then be provided by Council members. Valhalla DAO will allow democratic voting for protocol upgrades and new features, as well as treasury allocation. Decisions will be made via Discord discussions, community calls, forum discussions, and ultimately Snapshot votes.

Voting in Thorstarter

XRUNE is the governance token of Thorstarter, and those who hold it may elect to make changes to the Thorstarter protocol. Anyone may submit a proposal via Snapshot, but only XRUNE holders can vote. Note that XRUNE tokens must first be staked as vXRUNE in order to vote on submitted proposals.

Proposals may include:
- Allocation of DAO treasury and resources
- Changes and selection of Thorstarter's oracles (which determine price)
- New launch parameters and features
- Upgrade to the governance model, including buyback and burn/make mechanisms
- Liquidity pool rewards and incentives for LPs/stakers

Importantly, vXRUNE holders will decide in a consensus how to distribute the DAO Treasury Fund to pay for ongoing operational expenses, new hires, and protocol upgrades. The Thorstarter governance model launches with adaptability in mind.

XRUNE holders will have the final say in how the Thorstarter protocol is governed. Thorstarter governance is open to anyone who holds XRUNE and wants to participate in a protocol at the forefront of DeFi.

Thorstarter's xIDO Model

Project launches have been a popular target for bad actors. Launchpads have taken steps to protect users, largely by implementing defensive strategies and systems. Still, each launch format has its own set of vulnerabilities. Ensuring that bots and attackers can't steal value from interested investors will be an ongoing effort for the Thorstarter team, and one conducted in line with feedback from projects and investors.

Projects launching on Thorstarter will have the flexibility to choose from several different launch models. This will allow them to optimize for a token distribution that is most suitable for their project and community. This will be referred to as xIDO, reflecting the flexibility available when using XRUNE as part of project launches.

In addition, there are many customizations and features available on Thorstarter:

- **Fixed Price Crowdsale.** Sale participants would be given allocations of tokens at a specific price, which they can claim until all tokens in the crowdale are sold out.
- **Dynamic Price Auction.** Token price changes based on certain parameters. A common dynamic price auction format is the Dutch Auction, where token price starts high then deceases over time and weighted to demand.
- **Pool Share.** Projects would allocate a fixed number of tokens to the sale pool, and a set amount of contributions in a contribution pool. The token price would be calculated at the end of the sale based on the each participant's contribution relative to the total contribution pool.
- **Limited Supply vs. Elastic Supply.** The standard launch model is to have a limited supply of tokens; however, projects may wish to have an elastic token supply and could implement this using
- **Minimum Purchase vs. Max Purchase.** Simple parameter for keeping allocations within a specific range. Note that different purchase amounts could have different prices, set by the project (ie, larger contributions would pay more, letting users speculate on ROI vs size of investment, and would have a similar effect to Thorchain's slip-based fee[#]).
- **Open vs. Gated Tiers.**
  - Limited to XRUNE holders, and/or;
  - Limited to whitelisted investors, and/or;
  - Limited to whitelisted investor, capped, selected by lottery, and/or;
  - Whitelist based on holders of a different token
- **Overflow Sale Method.** Users put up as much capital as they want and get allocated token proportional to their share of the funds raised. All funds not used to purchase tokens are refunded.
- **Multiple Sales.** Projects may wish to run two sales concurrently, or structure follow on sales in chronologically order. Token supplies for each sale could cater to different audiences, e.g. one with a low cap for smaller contributors and one for large whales but with a participation fee.
- **Lock Ups and Vesting.** Similar to the dynamic pricing models mentioned above, vested tokens allow different sale participants to speculate on the net present value of their tokens, relative to the future vesting date. This is a feature often sought by IDO projects, but not offered by most IDO platforms.

Development on these launch contracts is ongoing. We will be working closely with the first IDO projects to ensure their needs are met, and that the sale structure is clearly communicated to them and their communities.

Roadmap

Thorstarter development can be broken down into three distinct phases:

Phase 1: dApp Build and Launch DAO

The first phase of Thorstarter development is currently underway. The project will entail a forked version of ASGARDEX with specific features kept in tact, and others omitted. The end user will arrive at the Thorstarter website and be able to choose from the app (UI to swap between assets), available IDO projects, token farms, governance, FAQs, and other pertinent information. Thorstarter's Aragon Company DAO contracts will be launched, and the Council of Asgard will be elected by the DAO.

Estimated time to complete Phase 1 development is approximately 10 weeks.

Phase 2: IDOs and DEX Improvements

The second phase of Thorstarter development will include upgrades to the Thorstarter swapping functionality and UI, integrating with XDEFI and other chains, and launching IDOs. The IDO launch contracts will be able to be upgraded and modified over time, as the feature suite is rolled out. Thorstarter will launch with a plan to IDO 1-2 projects per month for the first several months.

Estimated time to complete Phase 2 is approximately 3 months.

Phase 3: Ongoing IDOs and Protocol Work

The third phase of Thorstarter development will refine the cross-chain IDO model. Further, protocol work will focus on partnering with existing projects to tap into XRUNE-RUNE liquidity regardless of whether or not they IDO on Thorstarter. This has the added benefit of bringing additional buying power to XRUNE as a means to tap into RUNE cross-chain liquidity. Projects which may wish to access Throchain liquidity but not IDO will be able to do so based on integrations during this phase.

Phase 3 will be an ongoing development phase.

Conclusion

Thorstarter is a protocol for relaying liquidity between Thorchain network and long tail crypto assets. XRUNE will act as a settlement currency between new projects (IDOs) and Thorchains' active pools. Each IDO on Thorstarter will bring new users to the Thorchain network, deepening liquidity in both RUNE and XRUNE pools and, in turn, strengthening the security of the Thorchain network.

In this way, we believe that the existing functionality of XRUNE can be used to power the next generation of ThorFi.

#References

Thorchain's Liquidity Breakthrough. (10 October 2018).
https://medium.com/thorchain/thorchains-liquidity-breakthrough-85a0fdbcd396

Thorchain Whitepaper. (10 August 2020).
https://Github.Com/Thorchain/Resources/Blob/Master/Whitepapers/Thorchain-Whitepaper-May2020.Pdf

Thorstarter Midgard: Launch Structure and Community Ethos. (28 April 2021).
https://medium.com/@thorstarter/thostarter-midgard-launch-structure-and-community-ethos-1553f00f29b5

Thorchain - Opportunity and Risk Analysis. Oaksprout, M. Khalil.
https://docs.google.com/document/d/1wvwYAfQpFHz1Wym1fg3F44bF8nh5pOh8Rz0HNvfd3bQ/edit#

Continuous Liquidity Pools
https://docs.thorchain.org/how-it-works/continuous-liquidity-pools

DAO First: A new governance model. Tyler Scott Ward. (16 September 2020)
https://medium.com/barnbridge/dao-first-a-new-governance-model-863e8434bf00