

SIP-13 Migration to Arbitrum

Summary

SlingShot DAO has the opportunity to migrate to the Arbitrum Ecosystem, with support from Offchain Labs (the creators of Arbitrum), allowing the DAO to offer a greatly improved user experience, near instant transactions, meaningfully cheaper gas fees and the opportunity to collaborate with the many other projects in the Arbitrum community.

The opportunity for SlingShot DAO to move to Arbitrum includes:

- Faster, cheaper and improved user experience for all users of the dApp, especially important for web2 users, using AnyTrust Layer 3 technology.
- Massively scalable and more affordable infrastructure ultimately secured by Ethereum mainnet (layer 1).
- Collaborations and introductions with many gaming projects deploying across Arbitrum.
- Support from notable members of the Arbitrum community, such as Offchain Labs.

Author

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Sponsorship

gimmers.eth
nftsbust

Proposal Type

Initiative proposal

Rationale & Incentive

1. Improved user experience and scalability

One of the primary benefits of migrating to an Arbitrum Orbit chain is the resulting improvements to the end user experience within the SlingShot dApp.

Current issues:

Slow transaction times (> 1 second)

Given tx propagation and block times on Polygon, transactions with the dApp can often take a few seconds to complete.

Web2 abandonment rate

Transactions that take a few seconds for a web3 audience is okay, but the community has observed from user testing and feedback that for a web2 audience this is too slow, and the perceived sluggishness of interacting with the dApp leads to a high session abandonment rate among web2 users.

Gas price volatility and stuck transactions

Slow transactions can become most severe during times of high gas volatility, which can lead to transactions becoming stuck in the mempool and taking minutes, sometimes hours to complete.

Expensive Gas Fees

Currently the SlingShot DAO community is sponsoring the gas fees for users who use social login (web2 users), sometimes costing thousands of dollars a month. As the number of web2 users grows, this is expected to become a significant expense.

Opportunity for improvements:

Fast transaction times (< 300ms)

Arbitrum Orbit chains, specifically AnyTrust chains, leverage the use of data availability committees and trusted sequencers to significantly improve the response times of transaction completions, often within ~260ms.

Cheaper gas fees

By using AnyTrust architecture user transaction fees are also minimal, as data can be stored off-chain with minimized trust requirements, falling back to a regular roll-up to the parent chain only when N-1 of the committee is unavailable.

No gas price volatility

This approach also alleviates gas volatility, as the layer 3 chain instead sequences transactions on a first come first serve basis, eliminating transactions becoming stuck in a mempool and an end user experiencing transaction time volatility during large gas price fluctuations.

High bandwidth for the future

As transactions are sequenced in a FIFO basis, Arbitrum AnyTrust chains are dependent on bandwidth for a smooth UX, having an estimated bandwidth of up to 40,000 TPS, which would be dedicated entirely to SlingShot related transactions.

For further case study we can look to other high profile projects such as XAI, Treasure DAO, Rarible (RARI Chain), and others that have deployed orbit chains.

2. \$SLING as a native gas token

It would be possible to add to the utility of \$SLING, by using it as the native gas token on the layer 3 chain.

This is interesting as it both simplifies the user experience and adds further utility to the token.

Once bridged onto the layer 3 chain, a user would only need to manage \$SLING to both transact within the dApp and pay gas for their transactions.

It would also become technically possible to secure a wider ecosystem of applications, collaborations and experiences within the SlingShot ecosystem using \$SLING as the native token.

3. Arbitrum community collaborations

SlingShot DAO has been offered support from Offchain Labs (the entity that built Arbitrum technology) and other Arbitrum community members. At a time when growing the community and spreading the word of SlingShot DAO is preeminent, welcoming new and exciting collaborations will be a benefit to all.

Offers of support include but are not limited to:

- Inclusion in newsletters
- Hosted on Twitter/X Spaces
- Live streams of SlingShot DAO titles
- Discord amplification
- Assistance with PR
- Introduction to other projects

4. A growing ecosystem

Arbitrum was highlighted in dApp Radar's end of 2023 industry report citing 600% growth year over year and as a leader in TVL growth coming into 2024.

At the time of writing (22/05/24) Arbitrum is one of the fastest growing chains on dApp Radar, currently listed as the 7th most popular chain (by number of deployed dApps) and showcasing consistent increases across key metrics over the last 30 days.

dApps: +16 (30d) (total dApps 488)

Total UAW: +55.09% (30d)

DeFi TVL: +49.85% (30d)

NFT volume: +4.48% (30d)

Transactions: +86.07% (30d)

What would a migration look like?

Migration Key Considerations:

- Freeze the SlingShot dApp at the end of the current round.
- Redeploy \$SLING ERC-20 token on Arbitrum One (layer 2).
- Deploy an Arbitrum Orbit chain (layer 3).
- Re-deploy the voting escrow and dApp related contracts on the layer 3 chain.
- Communicate and coordinate withdrawal of liquidity ahead of Polygon chain snapshot date to protect LP providers.
- Take a Snapshot of the Polygon chain at a set date and time.
- Best efforts to recreate contract states and balance of wallets holding \$SLING across the Arbitrum layer 2 and layer 3 chains.
- Migrate dApp infrastructure and re-launch the dApp on Arbitrum.
- Coordinate updating the listing of \$SLING across various mediums (CoinGecko, Gitbooks, Medium posts etc).
- Migrate the DAO treasury.
- Provide post migration support for anyone who runs into issues.

Misc:

- Opportunity to upgrade some contracts and feature sets during the migration.
- Opportunity to fix any errors or misuse observed from the original \$SLING deployment on Polygon.

Redeploy \$SLING on Arbitrum

Given the way the current dApp contracts and voting escrow locks work, redeploying \$SLING as a new ERC-20 token on Arbitrum One is the most sensible option.

(Bridging the existing Polygon supply to Arbitrum would lead to significant engineering effort needed to upgrade all contracts, rebuild the dApp to be cross-chain aware and notably increases future risk to bridge exploits as a huge amount of supply will need to be bridged.)

The easiest way to do this would be to coordinate a date to take a snapshot of \$SLING holders on the Polygon chain and then recreate this on Arbitrum.

Any wallets holding \$SLING in exotic states with third party contracts will need to reach out for support following the migration. Realistically this is expected to be very few community members, if any at all.

\$SLING tokens on Polygon are immutable and cannot be frozen or otherwise locked, so will continue to exist after a migration occurs. This is notable as the sequence will need to be carefully considered so

that LP providers are not left providing any liquidity for the old token after a chain snapshot has occurred.

Freeze the dApp

During the window required to snapshot the Polygon chain, redeploy the contracts and setup the new infrastructure on layer 3, it makes the most sense to pause the dApp and wait before starting the next round.

Trying to run a round with live data and recreate the state on Arbitrum within that time would add a great deal of complexity.

Instead the DAO could freeze the dApp at the end of the current round and use the following 30 days to facilitate the migration, with an aim to relaunch the dApp thereafter, as close to the start of the month as possible, and thus returning to the familiar round cadence that the DAO currently observes.

Liquidity

It's important that LP providers are notified in advance of the Polygon chain snapshot date, so that they can coordinate the withdrawal of liquidity ahead of this time.

It's important to avoid the scenario where some community members are caught still offering liquidity for the old \$SLING token after a snapshot has taken place.

Therefore, when considering timelines, it should be prioritized to maximize the time between communicating the snapshot date and the snapshot taking place.

Once the token has been redeployed on Arbitrum One, liquidity can also be re-established on Arbitrum One.

Relaunch the dApp

Once contracts have been redeployed and the dApp infrastructure migrated, the next leaderboard voting round can be initiated and return to the usual cadence.

Risks

Risks if this proposal does not pass

- Stagnant community growth as web2 users abandon the app due to long transaction times.
- Gas price volatility on Polygon continues to disrupt dApp use during busing periods.
- Gas costs for the DAO become unsustainable as the community grows.

Risks if this proposal passes

- Unexpected delays during migration.
- Material risk to LP providers if they do not withdraw liquidity before the snapshot date.
- Complexity of token migration means potential for some users with exotic contract interactions to require direct support.
- Bridging risk between Arbitrum One and the layer 3 chain.

Key Terms

Arbitrum

The Ethereum based roll-up technology suite developed by Offchain Labs <https://arbitrum.io/>

Arbitrum One

The first Arbitrum Rollup Chain running on Ethereum mainnet. Governed by the Arbitrum DAO.

Layer 1 (L1)

The base protocol and underlying blockchain of the Ethereum network. Responsible for maintaining the integrity of the distributed ledger and executing smart contracts. Contains both Ethereum's execution layer and consensus layer.

Layer 2 (L2)

Trustless scaling solutions built on top of Ethereum's Layer 1 (L1) base protocol, such as state channels, plasma chains, optimistic rollups, and ZK-rollups. Layer 2 solutions aim to increase scalability and reduce the cost of transactions on Ethereum's Layer 1 without introducing additional trust assumptions.

Layer 3 (L3)

A chain whose core contract resides on a Layer 2 (L2) chain.

Native Fee Token

An ERC-20 token used as the native currency for gas fees on a chain (i.e., as opposed to using Ether).

Offchain Labs

The initial builders of Arbitrum; current contributors to the Arbitrum ecosystem and service providers to the Arbitrum DAO. Offchain labs also runs and maintains the Sequencers for Arbitrum One and Arbitrum Nova.

Arbitrum AnyTrust Protocol (AnyTrust)

An Arbitrum protocol that manages data availability with a permissioned set of parties known as the Data Availability Committee (DAC). This protocol reduces transaction fees by introducing an additional

trust assumption for data availability in lieu of Ethereum's Trustless data availability mechanism.

SlingShot DAO

A decentralized autonomous organization, that is governed by the holders of \$SLING token.

dApp

The SlingShot DAO web-app to submit and vote on ideas to be built. <https://slingshotdao.com/>

TPS

“Transactions per second” is often used to measure the potential bandwidth of a blockchain until it starts to degrade user experience with long transaction queues or gas premiums.

Gas Fee(s)

The fee, most often charged in native tokens, a user pays to submit a transaction on some blockchains (such as Ethereum). Often a user is able to set this fee themselves and to potentially pay a premium with the hope to have their transaction processed by the network more expediently.

FIFO

First in, First out.

Specifications

Actions

Administer a successful migration of the SlingShot ecosystem to the Arbitrum network.

This includes but may not be limited to:

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- Migrate the DAO treasury.
- Provide post migration support for anyone who runs into issues.

Measurements of success & desirable outcomes

A successful migration to Arbitrum would look like:

- The dApp redeployed and working on the Arbitrum network.
- \$SLING token redeployed on Arbitrum.
- \$SLING holders and contract state recreated as accurately as possible on Arbitrum.
- The identification of upgrades to any contracts or fixes to any errors or misuse to be realized and amended during the migration.

Impact on Working Groups

All working groups affected to assist with the migration efforts.

Impact on economics

- \$SLING token redeployed on Arbitrum One.
- DAO treasury migrated to Arbitrum One.
- Reduced gas fees for layer 3 transactions.