

Point of Contact:

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1. Introduction

Scroll proposes the deployment of wstETH (Wrapped staked ETH) to Scroll, with the ultimate goal being recognition of wstETH bridge endpoints as canonical by the Lido DAO.

2. Scroll's Rapid Growth and Ecosystem

[Scroll](#) is an EVM-equivalent ZK-Rollup built upon Ethereum, designed for scaling without sacrificing security, developer, or user experience:

- EVM Equivalence & Developer Friendliness:

Scroll is bytecode-compatible and builds upon Geth, enabling seamless migration of infrastructure and will support all existing development tools, including debuggers. Developers can work with a familiar development environment. No bytecode re-audits are required, minimizing the risk surface tremendously.

- Ethereum-native & Community first:

Scroll originated in close collaboration with the Ethereum Foundation's zkEVM research within the [PSE \(Privacy and Scaling Explorations\) group](#)—in fact, our team has contributed [~50% of the upstream PSE zkEVM codebase over the past 2 years](#). Scroll has been open source & peer reviewed since day one, our testnet has been permissionless since its inception, and we continuously [publish research](#) in an effort to demystify the inner works of [zk circuits and cryptography](#).

- Decentralization & Security:

Scroll has continually made upgrades across testnets to make it more trustless, and is committed to decentralizing both its sequencing and proving. In addition, Scroll has a strong in-house security team that found and reported bugs in fellow ZK-Rollup's proving systems in the past. In addition, Scroll has a [\\$1M Immunefi bug bounty and has audits from OpenZeppelin, Trail of Bits, Zellic, and Kalos](#).

ZK-Rollups are widely considered to be the Holy Grail of Ethereum scaling. Scroll's vision is to build a fully EVM-compatible ZK-Rollup that any existing Ethereum application can easily migrate to. Scroll launched mainnet on October 17th, 2023, and since then, we've had significant traction, seeing:

- ~70M bridged TVL / ~30M DeFi TVL
- 16M+ transactions (averaging over 100k+ tx/day)
- 3M unique wallet addresses

In addition, between our Alpha (Goerli) and Beta (Sepolia) Testnets, we've ~60M transactions, 10M wallet addresses, and 7M blocks produced. We've also seen 150+ projects deployed on Scroll, ranging from established DeFi protocols to brand-new Scroll-native applications.

3. High Demand for wstETH

Lido's stETH (and wstETH) is a critical asset in the Ethereum ecosystem with a significant market capitalization, and has emerged as a crucial component in DeFi applications. Naturally, a wide variety of protocols on Scroll—both established and native—have already indicated significant demand for wstETH across various use cases. Examples of this include wstETH's usage as collateral, in lending protocols, DEX pools, vaults, yield optimizers / farming, indexes, LST-backed stablecoins, etc.

Furthermore, already more than 3700 wstETH tokens have minted on Scroll, with over 7000 unique holders. There has been steady, organic growth of the asset with clear demand since Scroll's mainnet launch.

4. Implementation

Scroll has already implemented the canonical wstETH L1 and L2 Gateways, and has concluded its audit. The design uses the architecture of [wstETH on Optimism and Arbitrum](#) and [governance forwarder](#) used on multiple L2s as reference. Moreover, the path forward is upgrading in response to reference architecture and governance decision-forwarding demand, not redeploying the token from scratch, significantly simplifying the necessary next steps. Further details below:

- [Governance Forwarding](#)
- Emergency Brakes: The upgrade architecture allows emergency pause functionality for wstETH deposits/withdrawals, activated using the established mechanism of [Emergency Breaks](#).

5. Conclusion

In conclusion, this proposal seeks recognition of wstETH bridge endpoints as canonical by the Lido DAO; this will be a crucial step forward in enabling wstETH as a core asset in the Scroll ecosystem and encouraging new use cases for it on the network. Scroll itself will also work towards researching and developing new areas for wstETH utility, in an effort to increase the application, decentralization, and community support / adoption of wstETH.

Scroll Bridge and Rollup Contract Audits

- Bridge and Rollup contract
- OpenZeppelin
- [Phase 1](#)
- [Phase 2](#)
- [GasSwap, Multiple Verifier, Wrapped Ether and Diff](#)
- [ScrollOwner and Rate Limiter](#)
- [USDC Gateway](#)
- [Contract diff](#)
- [Phase 1](#)
- [Phase 2](#)
- [GasSwap, Multiple Verifier, Wrapped Ether and Diff](#)
- [ScrollOwner and Rate Limiter](#)
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- [Contract diff](#)
- Zelic
- [Contract v1](#)
- [Contract v2](#)
- [Contract v1](#)
- [Contract v2](#)
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- [Contract v1](#)
- [Contract v2](#)
- [Contract v1](#)
- [Contract v2](#)

Audits

- [Governance crosschain bridges \(ScrollBridgeExecutor\)](#)
- [wstETH on Scroll \(L1LidoGateway, L2LidoGateway, L2WstETHToken, LidoBridgeableTokens, LidoGatewayManager\)](#)

Testnet Contracts

Core Protocol

- wstETH token: [0xB82381A3fBD3FaFA77B3a7bE693342618240067b](#)
- Aragon Agent: [0x32A0E5828B62AAb932362a4816ae03b860b65e83](#) (proxy)

Lido on L2

Ethereum component

- L1LidoGateway (proposed)
-): [0xF22B24fa7c3168f30b17fd97b71bdd3162DDDe029](#) (proxy)
- L1LidoGateway (proposed)
-): [0x99845934FC8Ed44F3E6e66b3BAecf24d9e457F7f](#) (impl)
- ProxyAdmin (proposed)
-): [0x0dB416f4387ED89c1C99955fe0Ecad458f07c467](#) for L1LidoGateway

Scroll component

- ScrollBridgeExecutor (proposed)
-): [0x6b314986E3737Ce23c2a13036e77b3f5A846F8AF](#)
- L2LidoGateway (proposed)
-): [0x635B054A092F6aE61Ce0Fddc397A704F6626510D](#) (proxy)
- L2LidoGateway (proposed)
-): [0x906CD1Bfa5C3f7B2FF9BFBB5950ada841ED99E72](#) (impl)
- L2WstETHToken (proposed)
-): [0x2DAf22Caf40404ad8ff0Ab1E77F9C08Fef3953e2](#) (proxy)
- L2WstETHToken (proposed)
-): [0xaed405fc13d66e2f1055f6efe9a5ce736652fa55](#) (impl)
- ProxyAdmin (proposed)
-): [0xc6cdc2839378d50e03c9737723d96d117b09bda5](#) for: * L2LidoGateway
- L2WstETHToken
 - L2LidoGateway
 - L2WstETHToken

We will follow up shortly in the comments with mainnet contracts and levers setup when it is completed.