

The Graph PR #552 Summary

Introduction

This supplemental document is a list of the issues that were part of [PR #552](#) which are detailed in [The Graph Protocol Arbitrum Bridge Audit Report Updated - July 2022.pdf](#). Below is a brief summary of the functionality that this PR covers, the scope of contracts included in this PR, a list of the specific issues that are related to it (coded by severity), and the status as to whether they are resolved or not.

Summary

[PR #552](#) implements an Arbitrum bridge for the Graph Protocol, in order to support scaling the protocol via a Layer 2 network. This change set adds four key contracts: L1GraphTokenGateway, L2GraphTokenGateway, BridgeEscrow, and L2GraphToken. These contracts provide the foundation for transferring GRT tokens from L1 to L2 and vice versa. A detailed overview and discussion of the design decisions can be found in the [Graph Improvement Proposal GIP-0031](#)

Scope

- **Repository URL:** <https://github.com/graphprotocol/>
- **Commit:** 359d2547deb1b2f62064da3d77a104a115b5531f
- **Files in Scope:**
 - contracts/arbitrum/IArbToken.sol
 - contracts/arbitrum/IBridge.sol
 - contracts/arbitrum/IInbox.sol
 - contracts/arbitrum/IMessageProvider.sol
 - contracts/arbitrum/IOutbox.sol
 - contracts/arbitrum/ITokenGateway.sol

- contracts/arbitrum/L1ArbitrumMessenger.sol
- contracts/arbitrum/L2ArbitrumMessenger.sol
- contracts/gateway/BridgeEscrow.sol
- contracts/gateway/GraphTokenGateway.sol
- contracts/gateway/L1GraphTokenGateway.sol
- contracts/governance/Managed.sol
- contracts/l2/gateway/L2GraphTokenGateway.sol
- contracts/l2/token/L2GraphToken.sol
- contracts/token/L1GraphToken.sol

Issue IDs with status

The following issues were related to this PR. Next to each ID is the status as to whether it is resolved or unresolved. Please note that each issue ID (i.e. L-01) can be used to look up the details of the specific issue in the larger [The Graph Protocol Arbitrum Bridge Audit Report Updated - July 2022.pdf](#) document.

- **M-02** Non-expirable permits (unresolved)
- **L-07** Lack of input validation (resolved)
- **L-08** Multiple sources of truth for the allowed callhook callers (unresolved)
- **L-09** L1 gateway outbound transfer could fail if msg.value is too big (resolved)
- **L-13** Token gateway does not guarantee atomicity for inbound requests with transaction data (resolved)
- **L-14** Not using OpenZeppelin's libraries (unresolved)
- **N-01** Implicit ERC20 allowance requirement (resolved)
- **N-02** Deprecated or unused events (unresolved)
- **N-03** Gas optimization on permits (resolved)
- **N-04** Gateway uses a separate pausing mechanism (unresolved)
- **N-05** General code improvements (resolved)
- **N-06** Incomplete documentation (resolved)
- **N-08** Inconsistent use of named return variables (resolved)
- **N-09** Incorrect or outdated documentation (resolved)
- **N-10** Initialization inconsistency (resolved)
- **N-12** Re-implementation of Arbitrum library (resolved)
- **N-13** Multiple contracts per file (resolved)

- **N-14** Naming suggestions (resolved)
- **N-16** Typographical errors (resolved)
- **N-17** Unnecessary inheritance (resolved)
- **N-18** Unnecessary private visibility on MAX_UINT256 constant (resolved)
- **N-19** Unnecessary code (resolved)
- **N-20** Unneeded maximum value calculation (resolved)
- **N-23** Whitelist add/remove functions don't check if address already exists (resolved)