Security Assessment

Uart Token

Jun 24th, 2021

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Summary

This report has been prepared for Uart Token smart contracts, to discover issues and vulnerabilities in the source code of their Smart Contract as well as any contract dependencies that were not part of an officially recognized library. A comprehensive examination has been performed, utilizing Static Analysis techniques.

The auditing process pays special attention to the following considerations:

- Testing the smart contracts against both common and uncommon attack vectors.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Ensuring contract logic meets the specifications and intentions of the client.
- Cross referencing contract structure and implementation against similar smart contracts produced by industry leaders.
- Thorough line-by-line manual review of the entire codebase by industry experts.

The security assessment resulted in findings that ranged from critical to informational. We recommend addressing these findings to ensure a high level of security standards and industry practices. We suggest recommendations that could better serve the project from the security perspective:

- Enhance general coding practices for better structures of source codes;
- Add enough unit tests to cover the possible use cases given they are currently missing in the repository;
- Provide more comments per each function for readability, especially contracts are verified in public;
- Provide more transparency on privileged activities once the protocol is live.

Overview

Project Summary

Project Name	Uart Token
Description	An ERC20 token
Platform	Ethereum
Language	Solidity
Codebase	https://github.com/uni-arts-chain/UART-erc20
Commit	ebb24138cbdfc19b4e0bbc9fc51abdc19ca0c618

Audit Summary

Delivery Date	Jun 24, 2021
Audit Methodology	Static Analysis
Key Components	

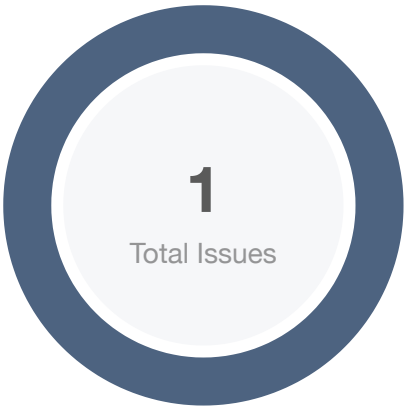
Vulnerability Summary

Total Issues	1
Critical	0
Major	0
Medium	0
Minor	0
Informational	1
Discussion	0

Audit Scope

ID	file	SHA256 Checksum
UTC	UartToken.sol	ab499388e9aa471f9095c81f330e48fede6412a7d3d0f05a730f0be3df789bae

Findings



Critical	0 (0.00%)
Major	0 (0.00%)
Medium	0 (0.00%)
Minor	0 (0.00%)
Informational	1 (100.00%)
Discussion	0 (0.00%)

ID	Title	Category	Severity	Status
UTC-01	Unlocked Compiler Version	Language Specific	Informational	Acknowledged

UTC-01 | Unlocked Compiler Version

Category	Severity	Location	Status
Language Specific	Informational	UartToken.sol: 1	Acknowledged

Description

The contract has unlocked compiler versions. An unlocked compiler version in the contract's source code permits the user to compile it at or above a particular version. This, in turn, leads to differences in the generated bytecode between compilations due to differing compiler version numbers. This can lead to ambiguity when debugging as compiler-specific bugs may occur in the codebase that would be hard to identify over a span of multiple compiler versions rather than a specific one.

Recommendation

It is a general practice to instead lock the compiler at a specific version rather than allow a range of compiler versions to be utilized to avoid compiler-specific bugs and be able to identify ones more easily. We recommend locking the compiler at the lowest possible version that supports all the capabilities wished by the codebase. This will ensure that the project utilizes a compiler version that has been in use for the longest time and as such is less likely to contain yet-undiscovered bugs.

Appendix

Finding Categories

Language Specific

Language Specific findings are issues that would only arise within Solidity, i.e. incorrect usage of private or delete.

Checksum Calculation Method

The "Checksum" field in the "Audit Scope" section is calculated as the SHA-256 (Secure Hash Algorithm 2 with digest size of 256 bits) digest of the content of each file hosted in the listed source repository under the specified commit.

The result is hexadecimal encoded and is the same as the output of the Linux "sha256sum" command against the target file.

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About

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