NonceAudits

Security Assessment

Aurus

AWXVesting.sol

Smart Contracts Audit

Date: 28th September, 2022

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1. Introduction

This Audit Report mainly focuses on the overall security of **AWG.sol**. With this report, we have tried to ensure the reliability and correctness of their smart contract by a complete and rigorous assessment of their system's architecture and the smart contract codebase.

1.1 Auditing Approach and Methodologies

The NonceAudit team has performed rigorous analysis of the project starting with analyzing the code design patterns in which we reviewed the smart contract architecture to ensure it is well structured and safe use of third-party smart contracts and libraries.

Our team then performed a formal line-by-line inspection of the Smart Contract to find any potential issues like race conditions, transaction-ordering dependence, timestamp dependence, and denial of service attacks. In Automated Testing, we tested the Smart Contract with industry standard tools to identify vulnerabilities and security flaws.

The audit approach included:

- Analyzing the complexity of the code in-depth and detailed, manual review of the code, line-by-line.
- Analyzing failure preparations to check how the Smart Contract performs in case of any bugs and vulnerabilities.
- Checking whether all the libraries used in the code are on the latest version.
- Analyzing the security of the on-chain data.

1.2 Audit Details

Project Name : Aurus
ID: ARSV
Git commit hash: 453ba2af12d005130c0748d4ed30224b47d53d00
Languages: Solidity (Smart contracts)
Platforms and Tools: Remix IDE, Solhint, VScode, Slither, Mythril

2. Audit Goals

The focus of the audit was to verify that the Smart Contract System is secure, resilient, and working according to the specifications. The audit activities can be grouped into the following three categories:

2.1. Security

Identifying security-related issues within each contract and the system of contract.

2.2. Sound Architecture

Evaluation of the architecture of this system through the lens of established smart contract best practices and general software best practices.

2.3. Code Correctness and Quality

A full review of the contract source code. The primary areas of focus include:

- Accuracy
- Readability
- Sections of code with high complexity

3. Security

Every issue in this report was assigned a severity level from the following:

High-level severity issues

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

Medium level severity issues

Issues on this level could potentially bring problems and should eventually be fixed.

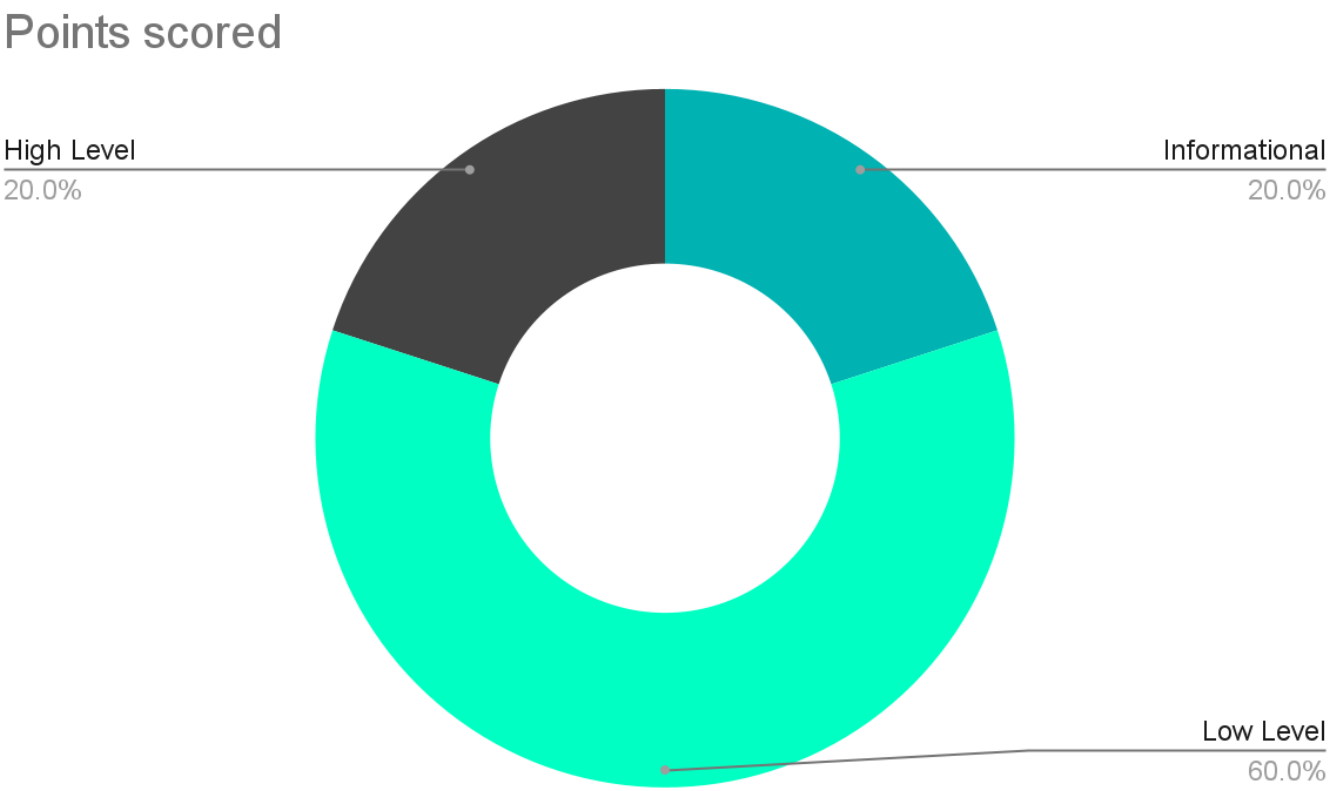
Low-level severity issues

Issues on this level are minor details and warnings that can remain unfixed but would be better fixed.

Informational-level severity issues

Issues on this level are informational details that can remain unfixed but would be better fixed.

4. Vulnerability Summary



ID	Title	Severity	Status
ARSV-01	Unchecked Transfer	High Level	**OPEN**
ARSV-02	External Call To User-Supplied Address	Low Level	**OPEN**

5. Manual Audit

For this section, the code was tested/read line by line by our developers. We also used Remix IDE's JavaScript VM to test the contract functionality.

- **High-level severity issues**
  - Not Found

- **Medium level severity issues**
  - Not Found

- **Low Level Severity issues**
  - Not Found

- **Informational-level severity issues**
  - Not Found

6. Automated Audit

6.1 Solhint Linting Violations

Solhint is an open-source project for linting solidity code, providing both security and style guide validations. It integrates seamlessly into most mainstream IDEs. We used Solhint as a plugin within our Remix IDE for this analysis. Several violations were detected by Solhint, it is recommended to use Solhint's npm package to lint the contract.

- `function addScheduledRelease()`

28:2 Line length must be no more than 120 but current length is 138

6.2 Slither

Slither, an open-source static analysis framework. This tool provides rich information about Ethereum smart contracts and has critical properties. While Slither is built as a security-oriented static analysis framework, it is also used to enhance the user's understanding of smart contracts, assist in code reviews, and detect missing optimizations.

- **High-level severity issues**
  - **Title:** Unchecked Transfer
  - **ID: ARSV-01**
  - **Line of Code:** L21
  - **status: OPEN**
  - **Description:** `AWXVesting.openVestingDeposit()` ignores return value by `token.transferFrom()`. Several tokens do not revert in case of failure and return false. If one of these tokens is used, the function will not revert if the transfer fails.
  - **Recommendation: Use `SafeERC20`, or ensure that the `transferFrom` return value is checked.**

- **Medium level severity issues**
  - Not Found

- **Low Level Severity issues**
  - Not Found

- **Informational-level severity issues**
    - Not Found

6.3 Mythril

Mythril is a security analysis tool for EVM bytecode. It detects security vulnerabilities in smart contracts built for Ethereum, Hedera, Quorum, Vechain, Roostock, Tron and other EVM-compatible blockchains. It uses symbolic execution, SMT solving and taint analysis to detect a variety of security vulnerabilities.

- **High-level severity issues**
    - Not Found

- **Medium level severity issues**
    - Not Found

- **Low Level Severity issues**
    - **Title:** External Call To User-Supplied Address
    - **ID: ARSV-02**
    - **Line of Code: Functions in:** L24-L28-L32
    - **Status: OPEN**
    - **Description:** An external message call to an address specified by the caller is executed. Note that the callee account might contain arbitrary code and could re-enter any function within this contract. Reentering the contract in an intermediate state may lead to unexpected behavior.
    - **Recommendation:** Add Reentrancy Guard modifier to the functions.

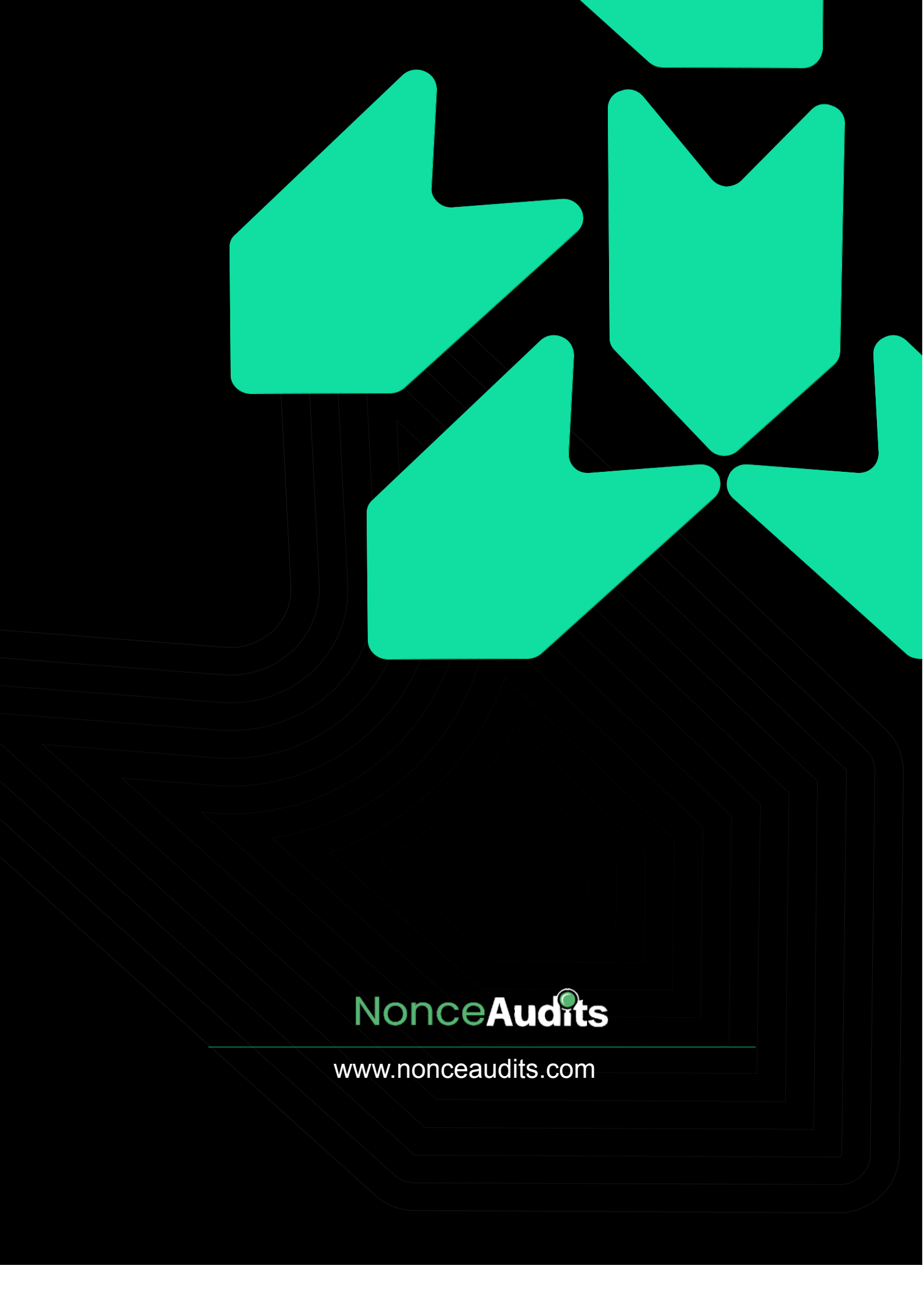
- **Informational-level severity issues**
    - Not Found

7. Disclaimer

NonceAudit audit is not a security warranty, investment advice, or an endorsement of Aurus contract. Securing smart contracts is a multistep process, therefore running a bug bounty program as a complement to this audit is strongly recommended.

8. Summary

The use case of the smart contract is relatively simple and the purpose behind it is clear. However, it lacks some basic but very important checks that could cause severe security problems for the smart contract.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