Smart Contract Security Audit Report

[2021]

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1 Executive Summary

On 2021.07.02, the SlowMist security team received the EOS Nation team's security audit application for sx.curve, developed the audit plan according to the agreement of both parties and the characteristics of the project, and finally issued the security audit report.

The SlowMist security team adopts the strategy of "white box lead, black, grey box assists" to conduct a complete security test on the project in the way closest to the real attack.

The test method information:

Test method	Description
Black box testing	Conduct security tests from an attacker's perspective externally.
Grey box testing	Conduct security testing on code modules through the scripting tool, observing the internal running status, mining weaknesses.
White box testing	Based on the open source code, non-open source code, to detect whether there are vulnerabilities in programs such as nodes, SDK, etc.

The vulnerability severity level information:

Level	Description
Critical	Critical severity vulnerabilities will have a significant impact on the security of the DeFi project, and it is strongly recommended to fix the critical vulnerabilities.
High	High severity vulnerabilities will affect the normal operation of the DeFi project. It is strongly recommended to fix high-risk vulnerabilities.
Medium	Medium severity vulnerability will affect the operation of the DeFi project. It is recommended to fix medium-risk vulnerabilities.
Low	Low severity vulnerabilities may affect the operation of the DeFi project in certain scenarios. It is suggested that the project party should evaluate and consider whether these vulnerabilities need to be fixed.
Weakness	There are safety risks theoretically, but it is extremely difficult to reproduce in engineering.

Level	Description
Suggestion	There are better practices for coding or architecture.

2 Audit Methodology

The security audit process of SlowMist security team for smart contract includes two steps:

Smart contract codes are scanned/tested for commonly known and more specific vulnerabilities using automated analysis tools.

Manual audit of the codes for security issues. The contracts are manually analyzed to look for any potential problems.

Following is the list of commonly known vulnerabilities that was considered during the audit of the smart contract:

- Integer Overflow and Underflow Vulnerability
- Authority Control Vulnerability
- Performance Optimization Audit
- Design Logic Audit
- Denial of Service Vulnerability
- Rollback Attack Audit
- Replay Attack Audit
- False Notice Audit
- False Error Notification Audit
- Fake Token Audit
- Random Number Security Audit
- Dust transaction attack security audit
- Micro-fork safety audit

- Crowd-out attack security audit
- Reentrancy Vulnerability

3 Project Overview

3.1 Project Introduction

SX Curve is an amplified AMM (automated market maker) swap liquidity pool designed efficiently for stable currencies and/or highly correlated assets.

3.2 Vulnerability Information

The following is the status of the vulnerabilities found in this audit:

NO	Title	Category	Level	Status
N1	Risk of sandwich attack	DeFi logical security	Low	Fixed
N2	Fake lptoken risk	Fake Token Audit	Suggestion	Confirmed
N3	Fake token risk	Fake Token Audit	Suggestion	Confirmed
N4	Fake token risk	Fake Token Audit	Suggestion	Confirmed

4 Code Overview

4.1 Contracts Description

The main network address of the contract is as follows:

https://bloks.io/account/curve.sx

Audit version:

https://github.com/stableex/sx.curve

v1.0.1

SHA256(curve.sx.wasm)= 1530e1eef59eae471c93f5a69dee74300454cf38fc0444d2e182efb351d51ee3

SHA256(eosio.token.wasm)= 79ee889991435ff559b352118f8a9b486bc0b00936da30055df3a2bd38f484a9

5 Audit Result

Audit Number	Audit Team	Audit Date	Audit Result
0X002107120003	SlowMist Security Team	2021.07.02 - 2021.07.12	Passed

Summary conclusion: The SlowMist security team use a manual and SlowMist team's analysis tool to audit the project, during the audit work we found 1 low risk, 3 suggestion vulnerabilities. And 3 suggestion vulnerabilities were confirmed and being fixed; All other findings were fixed.

6 Statement

SlowMist issues this report with reference to the facts that have occurred or existed before the issuance of this report, and only assumes corresponding responsibility based on these.

For the facts that occurred or existed after the issuance, SlowMist is not able to judge the security status of this project, and is not responsible for them. The security audit analysis and other contents of this report are based on the documents and materials provided to SlowMist by the information provider till the date of the insurance report (referred to as "provided information"). SlowMist assumes: The information provided is not missing, tampered with, deleted or concealed. If the information provided is missing, tampered with, deleted, concealed, or inconsistent with the actual situation, the SlowMist shall not be liable for any loss or adverse effect resulting therefrom. SlowMist only conducts the agreed security audit on the security situation of the project and issues this report. SlowMist is not responsible for the background and other conditions of the project.

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