Security Assessment

Sienna Rewards Release

Aug 23rd, 2021

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Disclaimer

About

Summary

This report has been prepared for Sienna to discover issues and vulnerabilities in the source code of the Sienna Rewards Release project as well as any contract dependencies that were not part of an officially recognized library. A comprehensive examination has been performed, utilizing Static Analysis and Manual Review techniques.

The code in scope for the most part is well orchestrated with good language usage and respect to language-specific best practices.

All issues identified were addressed by the team in release 2.1.1.

Overview

Project Summary

Project Name	Sienna Rewards Release
Description	Rewards
Platform	CosmosSDK
Language	Rust
Codebase	https://github.com/SiennaNetwork/sienna
Commit	314da73b59eec7b5cca1cb12c1b7a009fb1dd196

Audit Summary

Delivery Date	Aug 23, 2021
Audit Methodology	Static Analysis, Manual Review
Key Components	

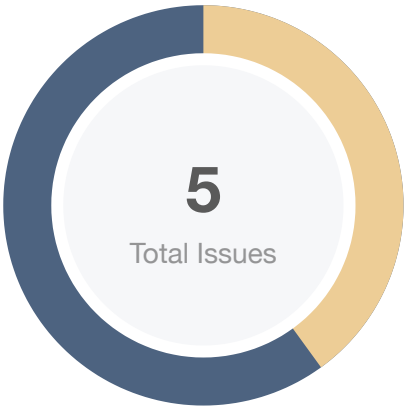
Vulnerability Summary

Vulnerability Level	Total	Pending	Declined	Acknowledged	Partially Resolved	Resolved
Critical	0	0	0	0	0	0
Major	0	0	0	0	0	0
Medium	0	0	0	0	0	0
Minor	2	0	0	0	0	2
Informational	3	0	0	0	0	3
Discussion	0	0	0	0	0	0

Audit Scope

ID	Repo	Commit	File	SHA256 Checksum
CSN	SiennaNetwork/sienna	314da73	rewards/Cargo.toml	a0823c6fb14a03581d960576524171d7fca3d0ea97e33142d265c93439140119
SNK	SiennaNetwork/sienna	314da73	rewards/rewards.rs	136512fdd2f3ecf693aa297bf7347d03e446e141fb7f7691ff2b67c18bebe2ca
SNR	SiennaNetwork/sienna	314da73	rewards/rewards_algo.rs	8bd87ed2388ece7c26d3a201b30428c916aef9e4289c6a5d66c5e5575f05b629
SNO	SiennaNetwork/sienna	314da73	rewards/rewards_config.rs	0869085e75db7f823093d300c961f254754038d7e98446070c410c49783246dd
SNW	SiennaNetwork/sienna	314da73	rewards/rewards_harness.rs	3152e8d5a07f1234f3b88351f9ece7f01abf948bbd0c5ec9a49a1f3132e6fea0
SNT	SiennaNetwork/sienna	314da73	rewards/rewards_math.rs	275b460fb84f811d8b02d46d03316b3da9a95cfac400fd39ba837f3508e67ac7
SNE	SiennaNetwork/sienna	314da73	rewards/rewards_test.rs	5a58c90731e83932dc4c591cd6bbfb8af105fb3496632efc470ed7dbef38ffb9

Findings



Critical	0 (0.00%)
Major	0 (0.00%)
Medium	0 (0.00%)
Minor	2 (40.00%)
Informational	3 (60.00%)
Discussion	0 (0.00%)

ID	Title	Category	Severity	Status
SNK-01	Misleading Error Message	Logical Issue	Minor	Resolved
SNR-01	Fields Out Of Order	Coding Style	Informational	Resolved
SNR-02	Redundant Use Of Some	Language Specific, Coding Style	Informational	Resolved
SNR-03	Misleading Error Message	Logical Issue	Minor	Resolved
SNT-01	Rounding Issue	Logical Issue, Mathematical Operations	Informational	Resolved

SNK-01 | Misleading Error Message

Category	Severity	Location	Status
Logical Issue	Minor	rewards/rewards.rs: 158, 173	Resolved

Description

The linked error message is misleading and does not provide enough information about the issue.

Recommendation

Consider refactoring the error message to something more explanatory.

Alleviation

The issue was addressed by the team in release 2.1.1.

SNR-01 | Fields Out Of Order

Category	Severity	Location	Status
Coding Style	Informational	rewards/rewards_algo.rs: 112	Resolved

Description

The function return struct contains all the fields but not in a proper order degrading the readability of the code base.

Recommendation

Consider refactoring the code and keep the order of the fields.

Alleviation

The issue was addressed by the team in release 2.1.1.

SNR-02 | Redundant Use Of Some

Category	Severity	Location	Status
Language Specific, Coding Style	Informational	rewards/rewards_algo.rs: 134, 303	Resolved

Description

The linked function creates redundant allocation to check if an option contains a value.

Recommendation

Consider using `is_some()`.

Alleviation

The issue was addressed by the team in release 2.1.1.

SNR-03 | Misleading Error Message

Category	Severity	Location	Status
Logical Issue	Minor	rewards/rewards_algo.rs: 310, 480	Resolved

Description

The linked error message is misleading and does not provide enough information about the issue.

Recommendation

Consider refactoring the error message to something more explanatory.

Alleviation

The issue was addressed by the team in release 2.1.1.

SNT-01 | Rounding Issue

Category	Severity	Location	Status
Logical Issue, Mathematical Operations	Informational	rewards/rewards_math.rs: 36	Resolved

Description

The linked code contains a call to the `multiply_ratio` function that could lead to rounding issues based on the comments that are present to the underlying function.

Recommendation

Consider creating dedicated test to ensure the intended outcome.

Alleviation

The issue was addressed by the team in release 2.1.1.

Appendix

Finding Categories

Mathematical Operations

Mathematical Operation findings relate to mishandling of math formulas, such as overflows, incorrect operations etc.

Logical Issue

Logical Issue findings detail a fault in the logic of the linked code, such as an incorrect notion on how block.timestamp works.

Language Specific

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

Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to make the codebase more legible and, as a result, easily maintainable.

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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