



Security Assessment

Sappchat

May 20th, 2021

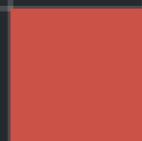


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Summary

This report has been prepared for Sappchat 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 and Manual Review 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	Sappchat
Description	A BEP20 token
Platform	BSC
Language	Solidity
Codebase	https://bscscan.com/address/0xa64ee256d51d52c31fec7eb5e372ac0c45a8a3f4#code
Commits	Sappchat

Audit Summary

Delivery Date	May 20, 2021
Audit Methodology	Static Analysis, Manual Review
Key Components	BEP20TokenAPP.sol

Vulnerability Summary

Total Issues	2
● Critical	0
● Major	0
● Medium	0
● Minor	0
● Informational	2
● Discussion	0

Audit Scope

ID	file	SHA256 Checksum
SSS	Sappchat.sol	61424aabdd8f70eef990a0cd5fa91ac2a530e161a67217ba9b5c8daf6e61968f

Findings



■ Critical	0 (0.00%)
■ Major	0 (0.00%)
■ Medium	0 (0.00%)
■ Minor	0 (0.00%)
■ Informational	2 (100.00%)
■ Discussion	0 (0.00%)

ID	Title	Category	Severity	Status
SSS-01	Unlocked Compiler Version	Language Specific	● Informational	☑ Resolved
SSS-02	Inaccurate Error Message	Coding Style	● Informational	☑ Resolved

SSS-01 | Unlocked Compiler Version

Category	Severity	Location	Status
Language Specific	● Informational	Sappchat.sol: 6	✓ Resolved

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.

Alleviation

The client locked the compiler version to `0.8.0` and the issue is fixed.

SSS-02 | Inaccurate Error Message

Category	Severity	Location	Status
Coding Style	● Informational	Sappchat.sol: 188	✓ Resolved

Description

The current generic error message does not give accurate feedback for contract construction.

Recommendation

We advise using the error message "BEP20: owner is the zero address".

Alleviation

The client changed the error message as we suggested and the issue is fixed.

Appendix

Finding Categories

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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About

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