



Venus - asBNB Oracle

Security Assessment

CertiK Assessed on Mar 20th, 2025





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Venus - asBNB Oracle

The security assessment was prepared by Certik, the leader in Web3.0 security.

Executive Summary

TYPES

DEX

ECOSYSTEM

Binance Smart Chain
(BSC)

METHODS

Manual Review, Static Analysis

LANGUAGE

Solidity

TIMELINE

Delivered on 03/20/2025

KEY COMPONENTS

N/A

CODEBASE

<https://github.com/VenusProtocol/oracle>

View All in Codebase Page

COMMITTS

Base: [b88b277dbb0543409b66facc4a1a4325a7e079de](#)Update1: [d2da7696bf009ee7ba1d5f6c868e75a63afd3243](#)

View All in Codebase Page

Vulnerability Summary



1

Total Findings

1

Resolved

0

Mitigated

0

Partially Resolved

0

Acknowledged

0

Declined



0

Critical

Critical risks are those that impact the safe functioning of a platform and must be addressed before launch. Users should not invest in any project with outstanding critical risks.



0

Major

Major risks can include centralization issues and logical errors. Under specific circumstances, these major risks can lead to loss of funds and/or control of the project.



0

Medium

Medium risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform.



0

Minor

Minor risks can be any of the above, but on a smaller scale. They generally do not compromise the overall integrity of the project, but they may be less efficient than other solutions.



1

Informational

1 Resolved



Informational errors are often recommendations to improve the style of the code or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code.

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CODEBASE | VENUS - ASBNB ORACLE

Repository

<https://github.com/VenusProtocol/oracle>

Commit




Base: [b88b277dbb0543409b66facd4a1a4325a7e079de](#)

Update1: [d2da7696bf009ee7ba1d5f6c868e75a63afd3243](#)

AUDIT SCOPE | VENUS - ASBNB ORACLE

3 files audited ● 1 file with Resolved findings ● 2 files without findings



ID	Repo	File	SHA256 Checksum
● BNB	VenusProtocol/oracle	 oracles/asBNBOracle.sol	b2bace02bd60fbb436ecb338956ffcab6936 8a5392c188eded0d0d958c2731af
● IAB	VenusProtocol/oracle	 interfaces/IAsBNB.sol	4be64a4e43e90cf44c57fe70f147000b2144 4e541aa89ecd7187a90780e7bcb6
● IAN	VenusProtocol/oracle	 interfaces/IAsBNBMinter.sol	aef1bf01d68dc62e45d42f765a16fed69e18 1eb50147087743942da90d1a965c

APPROACH & METHODS | VENUS - ASBNB ORACLE

This report has been prepared for Venus to discover issues and vulnerabilities in the source code of the Venus - asBNB Oracle project as well as any contract dependencies that were not part of an officially recognized library. A comprehensive examination has been performed, utilizing Manual Review and 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:

- Testing the smart contracts against both common and uncommon attack vectors;
- Enhance general coding practices for better structures of source codes;
- Add enough unit tests to cover the possible use cases;
- Provide more comments per each function for readability, especially contracts that are verified in public;
- Provide more transparency on privileged activities once the protocol is live.

REVIEW NOTES | VENUS - ASBNB ORACLE

This audit concerns the changes made in files outlined in:

- [PR-275](#)

Note that any centralization risks present in the existing codebase before these PRs were not considered in this audit and only those added in these PRs are addressed in the audit. We recommend all users carefully review the centralization risks, much of which can be found in our previous audits, which can be found here: <https://skynet.certik.com/projects/venus>.

The purpose of this PR is to introduce an oracle for asBNB using its correlation to slisBNB utilizing the CorrelatedTokenOracle. It does this by getting the `minter` from the asBNB contract and then calling the minter's `convertToTokens()` function to determine the amount of slisBNB per asBNB.

DEPENDENCIES | VENUS - ASBNB ORACLE

Third Party Dependencies

The protocol is serving as the underlying entity to interact with third party protocols. The third parties that the contracts interact with are:

- Oracles
- [AsBNB](#)
- [AsBNBMinterProxy](#)

The scope of the audit treats third party entities as black boxes and assumes their functional correctness. However, in the real world, third parties can be compromised and this may lead to lost or stolen assets. Moreover, updates to the state of a project contract that are dependent on the read of the state of external third party contracts may make the project vulnerable to read-only reentrancy. In addition, upgrades of third parties can possibly create severe impacts, such as increasing fees of third parties, migrating to new LP pools, etc.

Recommendations

We recommend constantly monitoring the third parties involved to mitigate any side effects that may occur when unexpected changes are introduced, as well as vetting any third party contracts used to ensure no external calls can be made before updates to its state.

FINDINGS | VENUS - ASBNB ORACLE

**1**

Total Findings

0

Critical

0

Major

0

Medium

0

Minor

1

Informational

This report has been prepared to discover issues and vulnerabilities for Venus - asBNB Oracle. Through this audit, we have uncovered 1 issues ranging from different severity levels. Utilizing the techniques of Manual Review & Static Analysis to complement rigorous manual code reviews, we discovered the following findings:

ID	Title	Category	Severity	Status
BNB-02	Typos And Inconsistencies	Logical Issue	Informational	● Resolved

BNB-02 | TYPOS AND INCONSISTENCIES

Category	Severity	Location	Status
Logical Issue	● Informational	oracles/asBNBOracle.sol (Base): 17	● Resolved

Description

- The comment in the constructor refers to upgradability, when it has been stated previously that proxy contracts will be removed and thus the upgradability of the contracts. If this change will be done prior to the deployment of this contract, then we recommend making the comment consistent.
- In other contracts the oracles name starts with the first letter capitalized, however, this is not done for the `asBNBOracle` in the comments or file name.

Recommendation

We recommend fixing the typos and inconsistencies mentioned above.

Alleviation

[Certik, 03/20/2025]: The client made the recommended changes in commits

- [68e2e0d3f932e48051aa2b54caa324950d3e1596](#);
- [d2da7696bf009ee7ba1d5f6c868e75a63afd3243](#).

They rolled back the removal of referencing upgradability in commit [f11bea86491f69ab21de9a0a0594c08c4e0d8fda](#) stating that this oracle will be deployed before upgradeability behavior is removed and that they'll remove this comment in the future.

OPTIMIZATIONS | VENUS - ASBNB ORACLE

ID	Title	Category	Severity	Status
<u>BNB-01</u>	Unnecessary Import	Code Optimization	Optimization	● Resolved

BNB-01 | UNNECESSARY IMPORT

Category	Severity	Location	Status
Code Optimization	● Optimization	oracles/asBNBOracle.sol (Base): 6	● Resolved

Description

The contract imports `ensureNonzeroAddress` but does not use it.

Recommendation

We recommend removing the unnecessary import.

Alleviation

[Certik, 03/19/2025]: The client made the recommended changes resolving the finding in commit [68e2e0d3f932e48051aa2b54caa324950d3e1596](#).

APPENDIX | VENUS - ASBNB ORACLE

Finding Categories

Categories	Description
Logical Issue	Logical Issue findings indicate general implementation issues related to the program logic.

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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