



Venus Labs - Updated NativeTokenGateway contract Security Assessment

CertiK Assessed on Sept 11th, 2025





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Venus Labs - Updated NativeTokenGateway contract

The security assessment was prepared by CertiK.

Executive Summary

TYPES

Lending

ECOSYSTEM

Binance Smart Chain
(BSC)

METHODS

Manual Review, Static Analysis

LANGUAGE

Solidity

TIMELINE

Preliminary comments published on 09/11/2025

Final report published on 09/11/2025

Vulnerability Summary



2

Total Findings

2

Resolved

0

Partially Resolved

0

Acknowledged

0

Declined



0 Centralization

Centralization findings highlight privileged roles & functions and their capabilities, or instances where the project takes custody of users' assets.



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 may include logical errors that, under specific circumstances, could result in fund losses or loss of project control.



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.



2 Informational

2 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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[VLU-01 : Missing NatSpec Comments](#)

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Disclaimer

CODEBASE | VENUS LABS - UPDATED NATIVETOKENGATEWAY CONTRACT

Repository

<https://github.com/VenusProtocol/venus-periphery>

Commit

Base: [83edda0b479d7a9cfc7bb065b6777aba00d29b06](#)

Update: [1390846320ab0c720bde0779c5ffa3d9c62f1817](#)

AUDIT SCOPE

VENUS LABS - UPDATED NATIVETOKENGATEWAY CONTRACT

VenusProtocol/venus-periphery



NativeTokenGateway.sol

APPROACH & METHODS

VENUS LABS - UPDATED NATIVETOKENGATEWAY CONTRACT

This audit was conducted for Venus to evaluate the security and correctness of the smart contracts associated with the Venus Labs - Updated NativeTokenGateway contract project. The assessment included a comprehensive review of the in-scope smart contracts. The audit was performed using a combination of Manual Review and Static Analysis.

The review process emphasized the following areas:

- Architecture review and threat modeling to understand systemic risks and identify design-level flaws.
- Identification of vulnerabilities through both common and edge-case attack vectors.
- Manual verification of contract logic to ensure alignment with intended design and business requirements.
- Dynamic testing to validate runtime behavior and assess execution risks.
- Assessment of code quality and maintainability, including adherence to current best practices and industry standards.

The audit resulted in findings categorized across multiple severity levels, from informational to critical. To enhance the project's security and long-term robustness, we recommend addressing the identified issues and considering the following general improvements:

- Improve code readability and maintainability by adopting a clean architectural pattern and modular design.
- Strengthen testing coverage, including unit and integration tests for key functionalities and edge cases.
- Maintain meaningful inline comments and documentations.
- Implement clear and transparent documentation for privileged roles and sensitive protocol operations.
- Regularly review and simulate contract behavior against newly emerging attack vectors.

SUMMARY

VENUS LABS - UPDATED NATIVETOKENGATEWAY CONTRACT

This audit concerns the changes made to the in scope files in the following PR:

- *venus-periphery*: [PR-8](#)

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>.

PR-8

This PR is designed to adapt the Native Token Gateway contracts to be compatible with the BNB Chain Core Pool. The BNB Chain Core Pool vToken contracts return an error code and do not always revert when the call is not successful. The PR adds checks for the returned error code and reverts if the the call was not successful. Note that this is also compatible with the Isolated Pools as the Isolated Pools vToken contracts either revert or are successful and return `NO_ERROR`.

Furthermore, this moves the Native Token Gateway contracts to the [venus-periphery](#) repository as they can now be used in both the BNB Chain Core Pool and Isolated Pools.

DEPENDENCIES | VENUS LABS - UPDATED NATIVETOKENGATEWAY CONTRACT

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:

- Wrapped Native Token Contracts

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 LABS - UPDATED NATIVETOKENGATEWAY
CONTRACT

2

Total Findings

0

Critical

0

Centralization

0

Major

0

Medium

0

Minor

2

Informational

This report has been prepared for Venus to identify potential vulnerabilities and security issues within the reviewed codebase. During the course of the audit, a total of 2 issues were identified. Leveraging a combination of Manual Review & Static Analysis the following findings were uncovered:

ID	Title	Category	Severity	Status
VLU-01	Missing NatSpec Comments	Inconsistency	Informational	● Resolved
VLU-02	Utilize Named Constant For No Error	Coding Style	Informational	● Resolved

VLU-01 | Missing NatSpec Comments

Category	Severity	Location	Status
Inconsistency	● Informational	NativeTokenGateway.sol (Base): 87~92, 97~102	● Resolved

Description

The NatSpec comments for the functions `redeemUnderlyingAndUnwrap()` and `redeemAndUnwrap()` do not include `RedeemFailed` error.

Recommendation

We recommend adding the missing NatSpec comments mentioned above.

Alleviation

[CertiK, 09/11/2025]: The client made the recommended changes resolving this finding in commit [1390846320ab0c720bde0779c5ffa3d9c62f1817](#).

VLU-02 | Utilize Named Constant For No Error

Category	Severity	Location	Status
Coding Style	● Informational	NativeTokenGateway.sol (Base): 81, 118, 140, 204, 207	● Resolved

Description

The code checks if the returned error is nonzero, in which case it reverts. To be more descriptive a constant such as `NO_ERROR` could be used.

Recommendation

We recommend considering the use of a named constant to improve the readability of the codebase.

Alleviation

[CertiK, 09/11/2025]: The client made the recommended changes resolving this finding in commit [e00d3984b863a3c543a0832a8e5b229e594de448](#).

APPENDIX

VENUS LABS - UPDATED NATIVETOKENGATEWAY CONTRACT

Finding Categories

Categories	Description
Coding Style	Coding Style findings may not affect code behavior, but indicate areas where coding practices can be improved to make the code more understandable and maintainable.
Inconsistency	Inconsistency findings refer to different parts of code that are not consistent or code that does not behave according to its specification.

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