



Venus Labs - Updated NativeTokenGateway contract Security Assessment

CertiK Assessed on Sept 11th, 2025





CertiK Assessed on Sept 11th, 2025

Venus Labs - Updated NativeTokenGateway contract

The security assessment was prepared by CertiK.

Executive Summary

TYPES

Lending
(BSC)

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

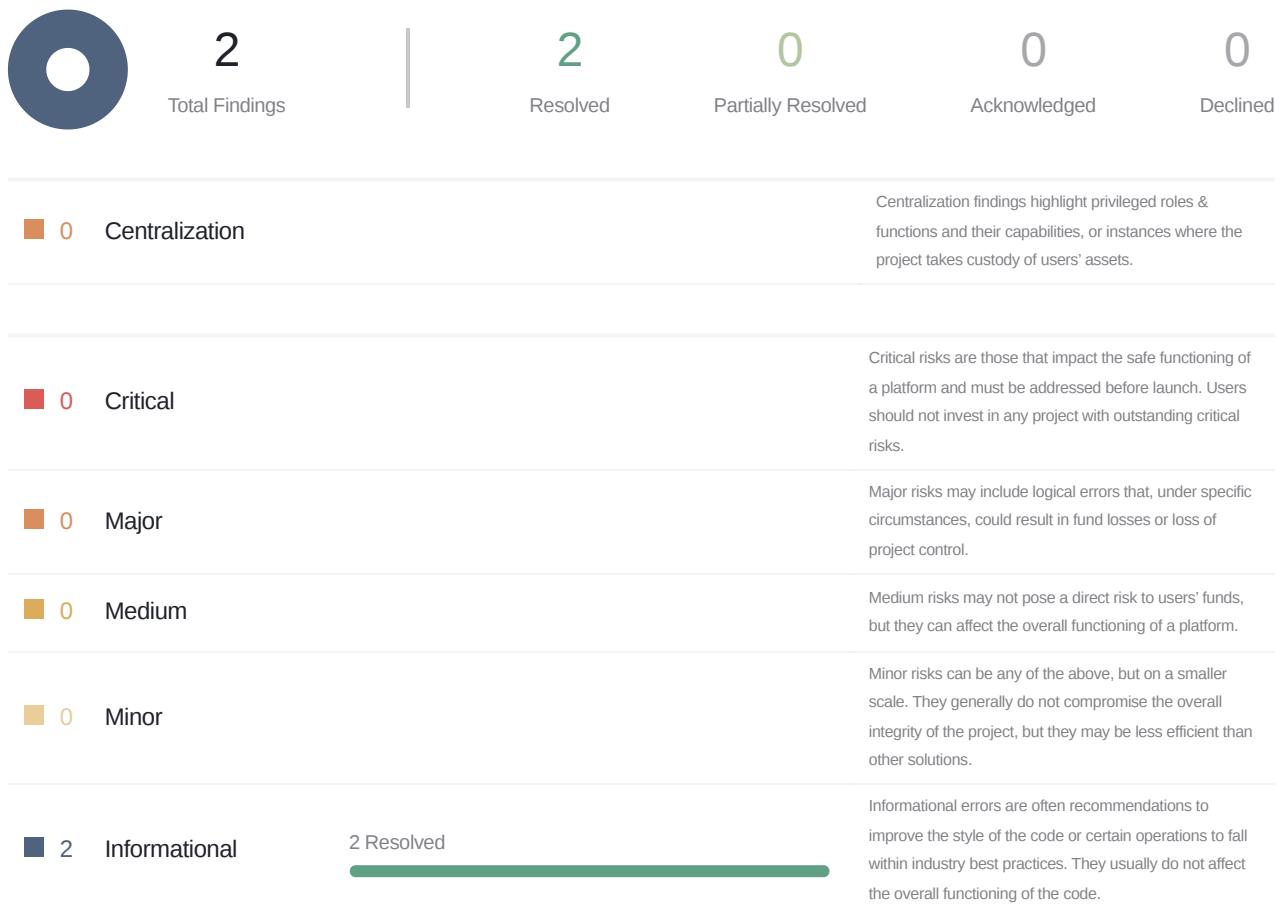


TABLE OF CONTENTS

VENUS LABS - UPDATED NATIVETOKENGATEWAY CONTRACT

■ Summary

[Executive Summary](#)

[Vulnerability Summary](#)

[Codebase](#)

[Audit Scope](#)

[Approach & Methods](#)

■ Summary

■ Dependencies

[Third Party Dependencies](#)

[Recommendations](#)

■ Findings

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

[VLU-02 : Utilize Named Constant For No Error](#)

■ Appendix

■ Disclaimer

CODEBASE**VENUS LABS - UPDATED NATIVETOKENGATEWAY
CONTRACT****| Repository**

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

| Commit

Base: [83edda0b479d7a9cf7bb065b6777aba00d29b06](#)

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****I 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.

DISCLAIMER | CERTIK

This report is subject to the terms and conditions (including without limitation, description of services, confidentiality, disclaimer and limitation of liability) set forth in the Services Agreement, or the scope of services, and terms and conditions provided to you ("Customer" or the "Company") in connection with the Agreement. This report provided in connection with the Services set forth in the Agreement shall be used by the Company only to the extent permitted under the terms and conditions set forth in the Agreement. This report may not be transmitted, disclosed, referred to or relied upon by any person for any purposes, nor may copies be delivered to any other person other than the Company, without CertiK's prior written consent in each instance.

This report is not, nor should be considered, an "endorsement" or "disapproval" of any particular project or team. This report is not, nor should be considered, an indication of the economics or value of any "product" or "asset" created by any team or project that contracts CertiK to perform a security assessment. This report does not provide any warranty or guarantee regarding the absolute bug-free nature of the technology analyzed, nor do they provide any indication of the technologies proprietors, business, business model or legal compliance.

This report should not be used in any way to make decisions around investment or involvement with any particular project. This report in no way provides investment advice, nor should be leveraged as investment advice of any sort. This report represents an extensive assessing process intending to help our customers increase the quality of their code while reducing the high level of risk presented by cryptographic tokens and blockchain technology.

Blockchain technology and cryptographic assets present a high level of ongoing risk. CertiK's position is that each company and individual are responsible for their own due diligence and continuous security. CertiK's goal is to help reduce the attack vectors and the high level of variance associated with utilizing new and consistently changing technologies, and in no way claims any guarantee of security or functionality of the technology we agree to analyze.

The assessment services provided by CertiK is subject to dependencies and under continuing development. You agree that your access and/or use, including but not limited to any services, reports, and materials, will be at your sole risk on an as-is, where-is, and as-available basis. Cryptographic tokens are emergent technologies and carry with them high levels of technical risk and uncertainty. The assessment reports could include false positives, false negatives, and other unpredictable results. The services may access, and depend upon, multiple layers of third-parties.

ALL SERVICES, THE LABELS, THE ASSESSMENT REPORT, WORK PRODUCT, OR OTHER MATERIALS, OR ANY PRODUCTS OR RESULTS OF THE USE THEREOF ARE PROVIDED "AS IS" AND "AS AVAILABLE" AND WITH ALL FAULTS AND DEFECTS WITHOUT WARRANTY OF ANY KIND. TO THE MAXIMUM EXTENT PERMITTED UNDER APPLICABLE LAW, CERTIK HEREBY DISCLAIMS ALL WARRANTIES, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO THE SERVICES, ASSESSMENT REPORT, OR OTHER MATERIALS. WITHOUT LIMITING THE FOREGOING, CERTIK SPECIFICALLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT, AND ALL WARRANTIES ARISING FROM COURSE OF DEALING, USAGE, OR TRADE PRACTICE. WITHOUT LIMITING THE FOREGOING, CERTIK MAKES NO WARRANTY OF ANY KIND THAT THE SERVICES, THE LABELS, THE ASSESSMENT REPORT, WORK PRODUCT, OR OTHER MATERIALS, OR ANY PRODUCTS OR RESULTS OF THE USE THEREOF, WILL MEET CUSTOMER'S OR ANY OTHER PERSON'S REQUIREMENTS, ACHIEVE ANY INTENDED RESULT, BE COMPATIBLE OR WORK WITH ANY SOFTWARE, SYSTEM, OR OTHER SERVICES, OR BE SECURE, ACCURATE, COMPLETE, FREE OF HARMFUL CODE, OR ERROR-FREE. WITHOUT LIMITATION TO THE FOREGOING, CERTIK PROVIDES NO WARRANTY OR

UNDERTAKING, AND MAKES NO REPRESENTATION OF ANY KIND THAT THE SERVICE WILL MEET CUSTOMER'S REQUIREMENTS, ACHIEVE ANY INTENDED RESULTS, BE COMPATIBLE OR WORK WITH ANY OTHER SOFTWARE, APPLICATIONS, SYSTEMS OR SERVICES, OPERATE WITHOUT INTERRUPTION, MEET ANY PERFORMANCE OR RELIABILITY STANDARDS OR BE ERROR FREE OR THAT ANY ERRORS OR DEFECTS CAN OR WILL BE CORRECTED.

WITHOUT LIMITING THE FOREGOING, NEITHER CERTIK NOR ANY OF CERTIK'S AGENTS MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED AS TO THE ACCURACY, RELIABILITY, OR CURRENCY OF ANY INFORMATION OR CONTENT PROVIDED THROUGH THE SERVICE. CERTIK WILL ASSUME NO LIABILITY OR RESPONSIBILITY FOR (I) ANY ERRORS, MISTAKES, OR INACCURACIES OF CONTENT AND MATERIALS OR FOR ANY LOSS OR DAMAGE OF ANY KIND INCURRED AS A RESULT OF THE USE OF ANY CONTENT, OR (II) ANY PERSONAL INJURY OR PROPERTY DAMAGE, OF ANY NATURE WHATSOEVER, RESULTING FROM CUSTOMER'S ACCESS TO OR USE OF THE SERVICES, ASSESSMENT REPORT, OR OTHER MATERIALS.

ALL THIRD-PARTY MATERIALS ARE PROVIDED "AS IS" AND ANY REPRESENTATION OR WARRANTY OF OR CONCERNING ANY THIRD-PARTY MATERIALS IS STRICTLY BETWEEN CUSTOMER AND THE THIRD-PARTY OWNER OR DISTRIBUTOR OF THE THIRD-PARTY MATERIALS.

THE SERVICES, ASSESSMENT REPORT, AND ANY OTHER MATERIALS HEREUNDER ARE SOLELY PROVIDED TO CUSTOMER AND MAY NOT BE RELIED ON BY ANY OTHER PERSON OR FOR ANY PURPOSE NOT SPECIFICALLY IDENTIFIED IN THIS AGREEMENT, NOR MAY COPIES BE DELIVERED TO, ANY OTHER PERSON WITHOUT CERTIK'S PRIOR WRITTEN CONSENT IN EACH INSTANCE.

NO THIRD PARTY OR ANYONE ACTING ON BEHALF OF ANY THEREOF, SHALL BE A THIRD PARTY OR OTHER BENEFICIARY OF SUCH SERVICES, ASSESSMENT REPORT, AND ANY ACCOMPANYING MATERIALS AND NO SUCH THIRD PARTY SHALL HAVE ANY RIGHTS OF CONTRIBUTION AGAINST CERTIK WITH RESPECT TO SUCH SERVICES, ASSESSMENT REPORT, AND ANY ACCOMPANYING MATERIALS.

THE REPRESENTATIONS AND WARRANTIES OF CERTIK CONTAINED IN THIS AGREEMENT ARE SOLELY FOR THE BENEFIT OF CUSTOMER. ACCORDINGLY, NO THIRD PARTY OR ANYONE ACTING ON BEHALF OF ANY THEREOF, SHALL BE A THIRD PARTY OR OTHER BENEFICIARY OF SUCH REPRESENTATIONS AND WARRANTIES AND NO SUCH THIRD PARTY SHALL HAVE ANY RIGHTS OF CONTRIBUTION AGAINST CERTIK WITH RESPECT TO SUCH REPRESENTATIONS OR WARRANTIES OR ANY MATTER SUBJECT TO OR RESULTING IN INDEMNIFICATION UNDER THIS AGREEMENT OR OTHERWISE.

FOR AVOIDANCE OF DOUBT, THE SERVICES, INCLUDING ANY ASSOCIATED ASSESSMENT REPORTS OR MATERIALS, SHALL NOT BE CONSIDERED OR RELIED UPON AS ANY FORM OF FINANCIAL, TAX, LEGAL, REGULATORY, OR OTHER ADVICE.

Elevating Your **Web3** Journey

Founded in 2017 by leading academics in the field of Computer Science from both Yale and Columbia University, CertiK is the largest blockchain security company that serves to verify the security and correctness of smart contracts and blockchain-based protocols. Through the utilization of our world-class technical expertise, alongside our proprietary, innovative tech, we're able to support the success of our clients with best-in-class security, all whilst realizing our overarching vision; provable trust for all throughout all facets of blockchain.

