



Security Assessment

Venus - New Custom Oracle

CertiK Assessed on Aug 23rd, 2024





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Venus - New Custom Oracle

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

Executive Summary

TYPES

DeFi

ECOSYSTEM

Binance Smart Chain
(BSC)

METHODS

Manual Review, Static Analysis

LANGUAGE

Solidity

TIMELINE

Delivered on 08/23/2024

KEY COMPONENTS

N/A

CODEBASE

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

View All in Codebase Page

COMMITTS

Base: [14493990589010da4b3e8b5101de0321067c3fe0](#)Update1: [4828f49ec15138e88281f0e9a3fe012786e823ef](#)Update2: [26ef5da986df3df2fb29a20d86e1890b8e03aea0](#)

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.

TABLE OF CONTENTS | VENUS - NEW CUSTOM ORACLE

I Summary

Executive Summary

Vulnerability Summary

Codebase

Audit Scope

Approach & Methods

I Summary

I Dependencies

Third Party Dependencies

Assumptions

Recommendations

I Findings

WET-01 : Inconsistent Comment

I Appendix

I Disclaimer

CODEBASE | VENUS - NEW CUSTOM ORACLE

Repository

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

Commit

Base: [14493990589010da4b3e8b5101de0321067c3fe0](#)



Update1: [4828f49ec15138e88281f0e9a3fe012786e823ef](#)

Update2: [26ef5da986df3df2fb29a20d86e1890b8e03aea0](#)

AUDIT SCOPE | VENUS - NEW CUSTOM ORACLE

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



ID	Repo	File	SHA256 Checksum
● WET	VenusProtocol/oracle	 oracles/WeETHAccountantOracle.sol	33841baf19cd6256668dee35933a074143aa4d72b79d6379e1d72d217206eeee
● IAV	VenusProtocol/oracle	 interfaces/IAccountant.sol	d5c7d9b509037bdabc4f330864d2195e52acd48934425a05682a038064acc8da

APPROACH & METHODS | VENUS - NEW CUSTOM ORACLE

This report has been prepared for Venus to discover issues and vulnerabilities in the source code of the Venus - New Custom 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.

SUMMARY | VENUS - NEW CUSTOM ORACLE

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

- <https://github.com/VenusProtocol/oracle/pull/213>

In particular, this PR is designed to provide a custom oracle for two liquid restaking tokens: weETHs and weETHk, for which Venus plans to add market support for on Ethereum. The two in-scope oracles rely on the previously audited `CorrelatedTokenOracle` as a base, and reference the exchange rate of the respective LRT to WETH through each vault's corresponding Accountant contract. As in all previously audited cases of the `CorrelatedTokenOracle`, the worth of the underlying asset in USD is acquired through the protocol's `ResilientOracle` contract.

DEPENDENCIES | VENUS - NEW CUSTOM 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:

- Accountant contracts for Ether.fi LRT Vaults
- Oracles

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.

Assumptions

Within the scope of the audit, assumptions are made about the intended behavior of the protocol in order to inspect consequences based on those behaviors. Assumptions made within the scope of this audit are given below.

The inputs of the `constructor()` of `WeETHAccountantOracle` will be the following:

- `weethLRT` will be one of the following Ether.fi tokens
 - `weETHS` : [0x917ceE801a67f933F2e6b33fC0cD1ED2d5909D88](#)
 - `weETHK` : [0x7223442cad8e9cA474fC40109ab981608F8c4273](#)
- `accountant` will be the following associated accountant contract
 - Accountant contract for `weETHS` : [0xbe16605B22a7faCEf247363312121670DFe5afBE](#)
 - Accountant contract for `weETHK` : [0x126af21dc55C300B7D0bBfC4F3898F558aE8156b](#)
- `weth` will be the contract deployed at [0xC02aaA39b223FE8D0A0e5C4F27eAD9083C756Cc2](#)
- `resilientOracle` will be the ResilientOracle contract deployed at [0xd2ce3fb018805ef92b8C5976cb31F84b4E295F94](#)

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. Additionally, we recommend all assumptions about the behavior of the project are thoroughly reviewed and, if the assumptions do not match the intention of the protocol, documenting the intended behavior for review.

FINDINGS | VENUS - NEW CUSTOM 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 - New Custom 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
WET-01	Inconsistent Comment	Inconsistency	Informational	● Resolved

WET-01 | INCONSISTENT COMMENT

Category	Severity	Location	Status
Inconsistency	● Informational	oracles/WeETHAccountantOracle.sol (Base): 31~32	● Resolved

Description

The comments above `_getUnderlyingAmount()` states it gets the ETH amount for 1 weETH LRT. However, the function returns the WETH amount. While these values will be the same, we recommend being consistent with the base asset.

Recommendation

We recommend having the comment be consistent with the base asset.

Alleviation

[Certik, 08/22/2024]: The client made the recommended changes in commits

- [4828f49ec15138e88281f0e9a3fe012786e823ef;](#)
- [26ef5da986df3df2fb29a20d86e1890b8e03aea0](#)

APPENDIX | VENUS - NEW CUSTOM ORACLE

Finding Categories

Categories	Description
Inconsistency	Inconsistency findings refer to different parts of code that are not consistent or code that does not behave according to its specification.

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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