CERTIK

Venus - WUSDMLiquidator

Security Assessment

CertiK Assessed on Apr 29th, 2025

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Venus - WUSDMLiquidator

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

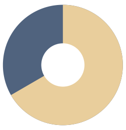
Executive Summary

TYPES	ECOSYSTEM	METHODS
DeFi	zkSync	Manual Review, Static Analysis
LANGUAGE	**TIMELINE**	**KEY COMPONENTS**
Solidity	Delivered on 04/29/2025	N/A

CODEBASE
base
update
View All in Codebase Page

COMMITS
0c7461c10194159d86476812c75eafcec4bf1774
c57bbf0ec66f606ede845a3d7820cffcbecbd410
View All in Codebase Page

Vulnerability Summary



3	3	0	0	0
Total Findings	Resolved	Partially Resolved	Acknowledged	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.
🟨 2	Minor	2 Resolved	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 - WUSDMLIQUIDATOR

Repository

base

update

Commit

0c7461c10194159d86476812c75eafcec4bf1774 c57bbf0ec66f606ede845a3d7820cffcbecbd410

AUDIT SCOPE | VENUS - WUSDMLIQUIDATOR

2 files audited ● 2 files with Resolved findings

ID	Repo	File	SHA256 Checksum
● CSV	VenusProtocol/isolated-pools	contracts/ComptrollerStorage.sol	cc01d538abbe717bdb4465b41da7d4f0cc3f60ef379e1a0542ffd206a46a47dc
● WUS	VenusProtocol/isolated-pools	contracts/WUSDMLiquidator.sol	de2ff0603357d63114975b6c912113bee1cf24d3c65bb922b53d9f47918d554c

APPROACH & METHODS | VENUS - WUSDMLIQUIDATOR

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

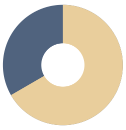
The auditing process pays special attention to the following considerations:

- 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.

FINDINGS | VENUS - WUSDMLIQUIDATOR



3	0	0	0	0	2	1
Total Findings	Critical	Centralization	Major	Medium	Minor	Informational

This report has been prepared to discover issues and vulnerabilities for Venus - WUSDMLiquidator. Through this audit, we have uncovered 3 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
VEW-01	`run()` Is Unprotected	Access Control	Minor	● Resolved
VEW-02	`_configureMarkets()` Side Effects	Volatile Code	Minor	● Resolved
VEW-03	`closeFactorMantissa` Is Set Via Comptroller Upgrade	Volatile Code	Informational	● Resolved

VEW-01 | `run()` IS UNPROTECTED

Category	Severity	Location	Status
Access Control	● Minor	contracts/WUSDMLiquidator.sol (base): 83	● Resolved

Description

Despite the description stating that the WUSDMLiquidator is meant to be executed solely by Governance, the `run()` function is unprotected and can be called multiple times by any user.

Recommendation

We recommend protecting it with the `onlyOwner` modifier.

Alleviation

[Venus, 04/29/2025]: The team heeded the advice and resolved the issue by protecting the function in commit c57bbf0ec66f606ede845a3d7820cffcbecbd410.

VEW-02 | `_configureMarkets()` SIDE EFFECTS

Category	Severity	Location	Status
Volatile Code	● Minor	contracts/WUSDMLiquidator.sol (base): 111	● Resolved

Description

The `run()` function emits multiple events in the context of the Comptroller and different VTokens on every execution. Since `run()` is unprotected and can be invoked repeatedly, this behavior may lead to unexpected and potentially disruptive events.

Furthermore, the function presumes that the `VWUSDM` market is paused for `Action.MINT` and `Action.ENTER_MARKET`, and maintains the paused state after execution. This may be unintended if the market gets unpaused in the future.

Recommendation

We recommend protecting the `run()` or revoking the access rights of `WUSDMLiquidator` right after the execution.

Alleviation

[Venus, 04/29/2025]: The team heeded the advice and resolved the issue by protecting the function in commit c57bbf0ec66f606ede845a3d7820cffcbecbd410.

VEW-03 | `closeFactorMantissa` IS SET VIA COMPTROLLER UPGRADE

Category	Severity	Location	Status
Volatile Code	● Informational	contracts/ComptrollerStorage.sol (base): 109; contracts/WUSDMLiquidator.sol (base): 124	● Resolved

Description

```
109
    uint256 internal constant MAX_CLOSE_FACTOR_MANTISSA = 1e18; // 1.0, temporarily
```

`WUSDMLiquidator` assumes the Comptroller code will be upgraded, allowing `closeFactorMantissa` to be set higher than the regular 0.9e18. It is unclear when and if the `MAX_CLOSE_FACTOR_MANTISSA` will be restored.

```
124         COMPTROLLER.setCloseFactor(1e18);
```

`WUSDMLiquidator` uses the 1e18 value directly as a close factor. It's reasonable to use `COMPTROLLER.MAX_CLOSE_FACTOR_MANTISSA()` instead to ensure the call will always be successful. Or `MANTISSA_ONE` constant in case it is supposed to revert in case of unexpected COMPTROLLER behavior.

Recommendation

We recommend using `COMPTROLLER.MAX_CLOSE_FACTOR_MANTISSA()` instead and clarifying the timeframe of Comptroller upgraded state.

Alleviation

[Venus, 04/29/2025]: The Comptroller implementation will be upgraded on a Normal VIP, before calling `run()` on the WUSDMLiquidator contract. The original Comptroller implementation will be restored in the same VIP, after the run execution.

APPENDIX | VENUS - WUSDMLIQUIDATOR

Finding Categories

Categories	Description
Access Control	Access Control findings are about security vulnerabilities that make protected assets unsafe.
Volatile Code	Volatile Code findings refer to segments of code that behave unexpectedly on certain edge cases and may result in vulnerabilities.

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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