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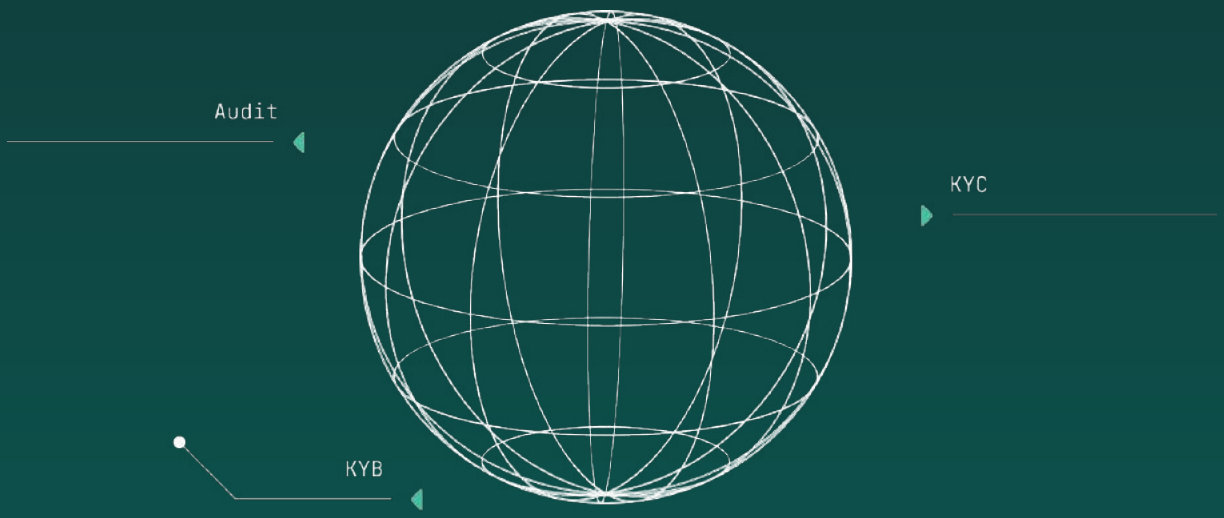
# SMART CONTRACT CODE REVIEW AND SECURITY ANALYSIS REPORT




CUSTOMER: COPIN.IO
DATE: Mar 13th, 2024

COPIN

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# DISCLAIMERS

## DAudit Disclaimer

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The smart contracts submitted for audit were examined in accordance with best industry practices at the time of this report in terms of cybersecurity vulnerabilities and issues in smart contract source code, which are detailed in this report (Source Code); the Source Code compilation, deployment, and functionality (performing the intended functions).

The audit makes no claims or guarantees about the code's security. It also cannot be deemed an adequate appraisal of the code's utility and safety, bug-free status, or any other contractual assertions. While we did our best in completing the study and generating this report, it is crucial to emphasize that you should not rely only on this report; we advocate doing many independent audits and participating in a public bug bounty program to assure smart contract security.

The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed

## Technical Disclaimer

Smart Contracts are deployed and executed on a blockchain platform. The platform, its programming language, and other software related to the smart contract can have vulnerabilities that can lead to hacks. Thus, the audit can't guarantee the explicit security of the audited smart contracts.

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This document may contain confidential information about IT systems and the intellectual property of the Customer as well as information about potential vulnerabilities and methods of their exploitation.

The report containing confidential information can be used internally by the Customer, or it can be disclosed publicly after all vulnerabilities are fixed — upon a decision of the Customer.

## DOCUMENT

| | |
|---|---|
| **Name** | Smart contract code review and sercurity analysis report for Copin |
| **Audit Team** | DAudit.org team |
| **Type** | Smart contract |
| **Platform** | Arbitrum / Solidity |
| **Methods** | Architecture Review, Functional Testing, Manual Review |
| **Repository** | https://github.com/copin-protocol/onchain-copytrading/tree/gmx-v1 |
| **Comit** | f47beef1fa53974602a967d3bd8cd0b864af3178 |
| **Deployed Contract** | 0x6aCD1Ac7eeEa7783E805a1c4E31c85A4535d682B<br>0xeb452323b4bFb289867D21cAa524535F443a5904<br>0x81Ed045eaB09B9164657A2EC76442f1337A38D0e<br>0x2Fe95465616F6252636fC101400147C0a1e64F6C<br>0x6aFa95bCC134c91460521CF0c46340c936E0acA5 |
| **JS tests** | No |
| **Website** | https://app.copin.io/ |
| **Timeline** | Mar 06th, 2024 |
| **Changelog** | Mar 12th, 2024 - Initial audit |

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## INTRODUCTION

DAudit.org (Consultant) was contracted by Copin.io (Customer) to conduct a Smart Contract Code Review and Security Analysis. Copin (Customer) hired DAudit.org (Consultant) to do a Smart Contract Code Review and Security Analysis. This report details the conclusions of the Customer's smart contract security assessment and code review, which took place on Mar 06th, 2024.

## SCOPE

The scope of the project is smart contracts in the repository:

**Repository:**

https://github.com/copin-protocol/onchain-copytrading/tree/gmx-v1

**Commit:**

f47beef1fa53974602a967d3bd8cd0b864af3178

**JS tests:** No

**Contracts:**

Factory.sol
Config.sol
Events.sol
TaskCreator.sol
CopyWalletProxy.sol
core/CopyWallet.sol
CopyWalletGMXv1.sol

We have scanned this smart contract for commonly known and more specific vulnerabilities. Here are some of the commonly known vulnerabilities that are considered:

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# Table Of Content

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| Category | Check items |
| --- | --- |
| Code review | ▪ Reentrancy<br>▪ Ownership Takeover<br>▪ Timestamp Dependence<br>▪ Gas Limit and Loops<br>▪ DoS with (Unexpected) Throw<br>▪ DoS with Block Gas Limit<br>▪ Transaction-Ordering Dependence<br>▪ Style guide violation<br>▪ Costly Loop<br>▪ Unchecked external call<br>▪ Unchecked math<br>▪ Unsafe type inference<br>▪ Implicit visibility level<br>▪ Deployment Consistency<br>▪ Repository Consistency<br>▪ Data Consistency |
| Functional review | ▪ Business Logics Review<br>▪ Functionality Checks<br>▪ Access Control & Authorization<br>▪ Escrow manipulation<br>▪ Token Supply manipulation<br>▪ Assets integrity<br>▪ User Balances manipulation<br>▪ Data Consistency manipulation<br>▪ Kill-Switch Mechanism<br>▪ Operation Trails & Event Generation |

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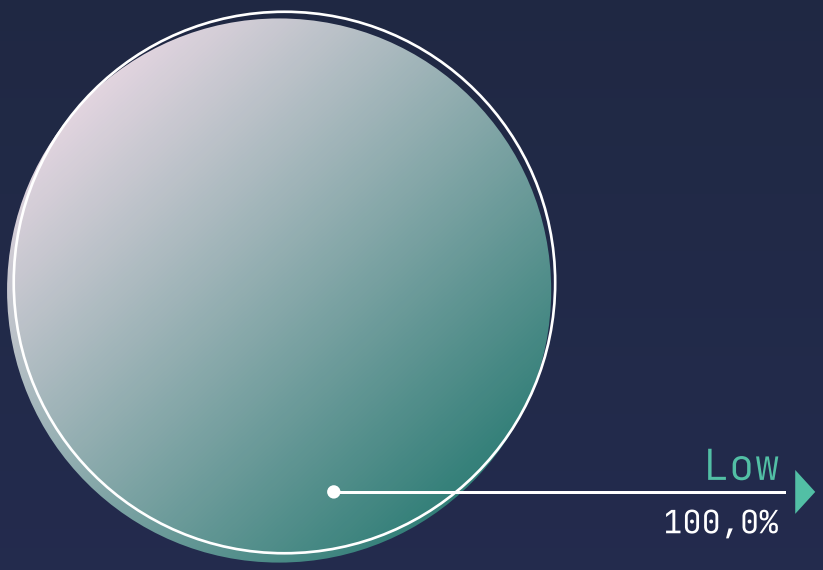
## EXECUTIVE SUMMARY

According to the assessment, the Customer's smart contracts are well-secured.


With Mythril, SmartCheck, Solgraph, and Slither, DAudit did a code analysis, manual audit, and automated checks. All concerns discovered during automated analysis were carefully examined, and the Audit summary section contains critical vulnerabilities. The audit summary section contains a list of all problems discovered.

Security engineers discovered one low-severity problems as a result of the audit.

Graph 1. The distribution of vulnerabilities after the audit.



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## Severity Definitions

| Risk Level | Description |
| --- | --- |
| Critical | Critical vulnerabilities are usually straightforward to exploit and can lead to asset loss or data manipulations. |
| High | High-level vulnerabilities are difficult to exploit; however, they also have a significant impact on smart contract execution, e.g., public access to crucial functions |
| Medium | Medium-level vulnerabilities are important to fix; however, they can't lead to asset loss or data manipulations. |
| Low | Low-level vulnerabilities are mostly related to outdated, unused, etc. code snippets that can't have a significant impact on execution. |

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## AUDIT OVERVIEW

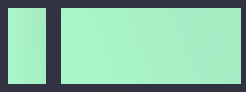
### Critical

02 critical issues were found.

### High

No high issues were found.

### Medium



No medium issues were found.

### Low

01 low issue was found.

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## AUDIT DETAIL

### Critical

1. Owner can set executor fee and protocol fee without limited

- Contract: Config.sol
- Function: setExecutorFee, setProtocolFee
- Description: Configuring fees without limitations could potentially harm users if the set fee exceeds the usual usage fee.
- Solution: It is advisable to add a feature to limit the maximum fee that can be set. This maximum limit could be set by the platform, government regulations, and should be transparent to all users.

↳ ☑ THIS ISSUE IS FIXED

2. The market whitelist address, when set, should be verified to ensure its functionality is currently operational or not.

- Contract: Config.sol
- Function: setTokenWhitelistStatus
- Description: Setting the market whitelist address without verifying if it corresponds to the actual market contract may lead to inadvertently setting a contract with different functionality.
- Solution: It's advisable to add a verification step to ensure that the market whitelist address set corresponds to the correct trading contract and that this contract is currently operational.

↳ ☑ THIS ISSUE IS FIXED

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## AUDIT DETAIL

Low

1. The fee receiver address should not be zero address or dead address.
   - Contract: Config.sol
   - Function: setFeeReceiver
   - Description: Setting the fee receiver should not be zero dead to avoid fee loss due to incorrect setting
   - Solution: Should add a check to see if the address is zero address or dead address

THIS ISSUE IS FIXED

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## CONCLUSION

SMART CONTRACTS WITHIN THE SCOPE WERE MANUALLY REVIEWED AND ANALYZED WITH STATIC ANALYSIS TOOLS.
THE AUDIT REPORT CONTAINS ALL FOUND SECURITY VULNERABILITIES AND OTHER ISSUES IN THE REVIEWED CODE.
AS A RESULT OF THE AUDIT, SECURITY ENGINEERS FOUND 02 CRITICAL SEVERITY ISSUES AND 01 LOW SEVERITY ISSUE.

AFTER RESPONDING TO THE CLIENT AND CONSULTING, THESE ISSUES HAVE BEEN FIXED.