

Smart Contract Security Audit

AUDIT RATE TECH

for

Unity of Hearts



**Audit Rate
Tech**



Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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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.

Audit details:

Audited project: Unity of Hearts

Total supply: 980,805,817.770581

Token ticker: UHT

Decimals: 9

Contract address: 0x1bDb0D8c9D78923088F868e27aC9dBb5f5643106

Languages: Solidity (Smart contract)

Platforms and Tools: Remix IDE, Truffle, Truffle Team, Ganache, Solhint, VScode, Mythril,

Contract Library

Compiler Version: v0.8.7+commit.e28d00a7

Optimization Enabled: No with 200 runs

Contract Deployer Address: 0x13DB902ffDb3E4fEB2F19C0F9Ebc8f48b3F99271

Blockchain: Binance Smart Chain

Project website: <https://unityofhearts.world/>

The audit items and results:

(Other unknown security vulnerabilities are not included in the audit responsibility scope)

Audit Result: Passed

Audit Date: March 20, 2022

Audit Team: AUDIT RATE TECH

<https://www.auditrate.tech>

Introduction

This Audit Report mainly focuses on the overall security of Unity of Hearts Smart Contract. With this report, we have tried to ensure the reliability and correctness of their smart contract by complete and rigorous assessment of their system's architecture and the smart contract codebase.

Auditing Approach and Methodologies applied

The AUDIT RATE TECH team has performed rigorous testing of the project starting with analyzing the code design patterns in which we reviewed the smart contract architecture to ensure it is structured and safe use of third-party smart contracts and libraries.

Our team then performed a formal line by line inspection of the Smart Contract to find any potential issue like race conditions, transaction-ordering dependence, timestamp dependence, and denial of service attacks.

In the Unit testing Phase, we coded/conducted custom unit tests written for each function in the contract to verify that each function works as expected.

In Automated Testing, we tested the Smart Contract with our in-house developed tools to identify vulnerabilities and security flaws.

The code was tested in collaboration of our multiple team members and this included -

- Testing the functionality of the Smart Contract to determine proper logic has been followed throughout the whole process.
- Analyzing the complexity of the code in depth and detailed, manual review of the code, lineby-line.
- Deploying the code on testnet using multiple clients to run live tests.
- Analyzing failure preparations to check how the Smart Contract performs in case of any bugs and vulnerabilities.
- Checking whether all the libraries used in the code are on the latest version.
- Analyzing the security of the on-chain data.

Audit Goals

The focus of the audit was to verify that the Smart Contract System is secure, resilient and working according to the specifications. The audit activities can be grouped in the following three categories:

Security

Identifying security related issues within each contract and the system of contract.

Sound Architecture

Evaluation of the architecture of this system through the lens of established smart contract best practices and general software best practices.

Code Correctness and Quality

A full review of the contract source code. The primary areas of focus include:

- Accuracy
- Readability
- Sections of code with high complexity
- Quantity and quality of test coverage

Issue Categories

Every issue in this report was assigned a severity level from the following:

High level severity issues

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

Medium level severity issues

Issues on this level could potentially bring problems and should eventually be fixed.

Low level severity issues

Issues on this level are minor details and warnings that can remain unfixed but would be better fixed at some point in the future.

Manual Audit:

For this section the code was tested/read line by line by our developers. We also used Remix IDE's JavaScript VM and Kovan networks to test the contract functionality.

Automated Audit

Remix Compiler Warnings

It throws warnings by Solidity's compiler. If it encounters any errors the contract cannot be compiled and deployed. No issues found.

Number of issues per severity

| Critical | High | Medium | Low | Note |
|----------|------|--------|-----|------|
| 0 | 0 | 0 | 0 | 0 |

Issues Checking Status

| No | Issue description. | Checking status |
|----|---|-----------------|
| 1 | Compiler warnings. | Passed |
| 2 | Race conditions and Reentrancy. Cross-function race conditions. | Passed |
| 3 | Possible delays in data delivery. | Passed |
| 4 | Oracle calls. | Passed |
| 5 | Front running. | Passed |
| 6 | Timestamp dependence. | Passed |
| 7 | Integer Overflow and Underflow. | Passed |
| 8 | DoS with Revert. | Passed |
| 9 | DoS with block gas limit. | Passed |
| 10 | Methods execution permissions. | Passed |
| 11 | Economy model. | Passed |
| 12 | The impact of the exchange rate on the logic. | Passed |
| 13 | Private user data leaks. | Passed |
| 14 | Malicious Event log. | Passed |
| 15 | Scoping and Declarations. | Passed |
| 16 | Uninitialized storage pointers. | Passed |
| 17 | Arithmetic accuracy. | Passed |
| 18 | Design Logic. | Passed |
| 19 | Cross-function race conditions. | Passed |
| 20 | Safe Zeppelin module. | Passed |
| 21 | Fallback function security. | Passed |

Owner privileges

177 renounceOwnership
185 transferOwnership
655 excludeFromFee
659 includeInFee
663 changeMarketingSecondAccount
669 changeMarketingAccount
675 changeReflectionFee
682 changeBurnFee
690 changeMarketingSecondFee
697 changeMarketingFee
742 excludeAccountFromReward
751 includeAccountinReward

Conclusion

Owner can set fees up to 40%

```
function changeReflectionFee(uint256 newReflectionFee) public onlyOwner() returns(bool) {
    require(newReflectionFee >= 0, "Reflection fee must be greater or equal to zero");
    require(newReflectionFee <= 10, "Reflection fee must be lower or equal to ten");
    _reflectionFee = newReflectionFee;
    return true;
}

function changeBurnFee(uint256 burnFee_) public onlyOwner() returns(bool) {
    require(burnFee_ >= 0, "Burn fee must be greater or equal to zero");
    require(burnFee_ <= 10, "Burn fee must be lower or equal to 10");
    _burnFee = burnFee_;
    return true;
}

function changeMarketingSecondFee(uint256 marketingSecondFee_) public onlyOwner() returns(bool) {
    require(marketingSecondFee_ >= 0, "Marketing second fee must be greater or equal to zero");
    require(marketingSecondFee_ <= 10, "Marketing second fee must be lower or equal to 10");
    _marketingSecondFee = marketingSecondFee_;
    return true;
}

function changeMarketingFee(uint256 marketingFee_) public onlyOwner() returns(bool) {
    require(marketingFee_ >= 0, "Marketing fee must be greater or equal to zero");
    require(marketingFee_ <= 10, "Marketing fee must be lower or equal to 10");
    _marketingFee = marketingFee_;
    return true;
}
```

No mint function found

Owner cannot set max tx amount

Owner cannot pause trading

Note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner. The analysis of the contract does not give complete security and includes only the analysis that is indicated in the report. We do not analyze locked tokens or LP tokens, the presence of KYC in other companies, and so on. Also, our audit is not a recommendation for investment. All responsibility for the loss of investment lies with you!

Website Audit

| | |
|--|---|
| Address | https://unityofhearts.world/ |
| Domain registration | 1 years |
| Domain | Clean |
| Web server | Nginx |
| The server is located | Ukraine |
| Server response time | 1.66 sec |
| SSL certificate | Yes |
| JavaScript errors | Not found |
| Typos, or grammatical errors | Not found |
| Issues with loading elements, code, or stylesheets | Not found |
| Malware | Not found |
| Injected spam | Not found |
| Internal server errors | Not found |
| Popups | Not found |
| Blocking files | JS: 5, CSS: 6 |
| Mobile Friendly | Yes |
| Compress CSS files | Optimized |
| Compress JS files | Optimized |
| Image compression | Optimized |
| Visible content | Optimized |
| Social Media/contacts | Yes |
| Roadmap | Yes |

Top Token Holders

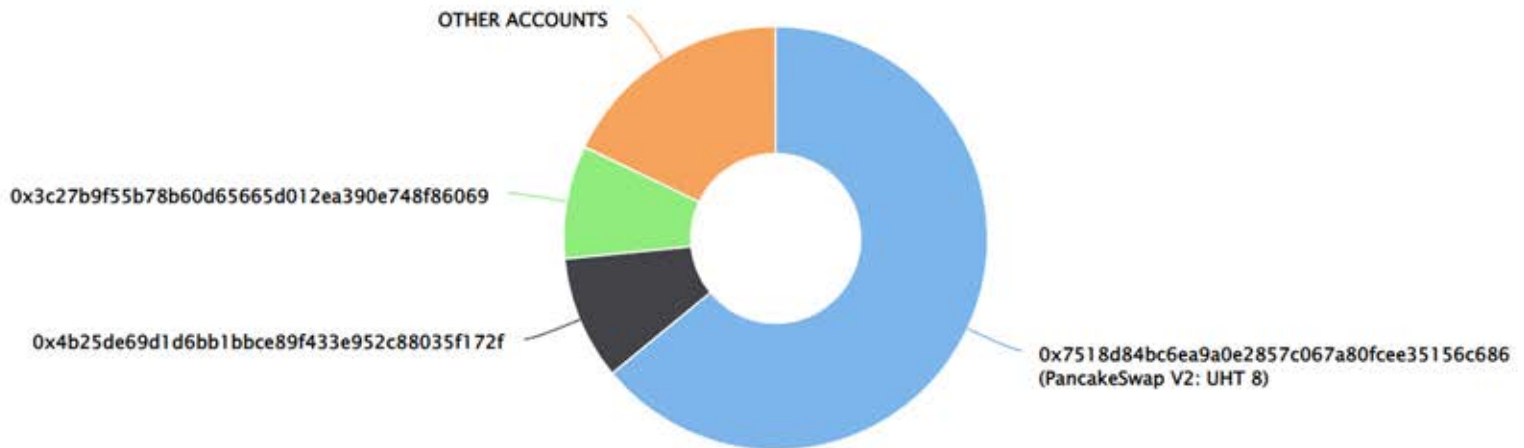
At the time of the audit

The top 3 holders collectively own 82.10% (805,220,046.41 Tokens) of Unity of Hearts

Token Total Supply: 980,805,817.77 Token | Total Token Holders: 16

Unity of Hearts Top 3 Token Holders

Source: BscScan.com



(A total of 805,220,046.41 tokens held by the top 3 accounts from the total supply of 980,805,817.77 token)

| Rank | Address | Quantity (Token) | Percentage |
|------|--|-----------------------|------------|
| 1 | PancakeSwap V2: UHT 8 | 627,787,257.186666333 | 64.0073% |
| 2 | 0x4b25de69d1d6bb1bbce89f433e952c88035f172f | 92,677,255.276218593 | 9.4491% |
| 3 | 0x3c27b9f55b78b60d65665d012ea390e748f86069 | 84,755,533.944259524 | 8.6414% |

KYC/Doxx

At the time of the audit, there is no information about the conduct of KYC / Doxx

THANK YOU!