HackSafe

Smart Contract Security Audit Report

CYLUM

January 2023

Security Status

★★★★☆

www.hacksafe.io

Audit Details

Audited project
CYLUM

Deployer address
0xbe830877676ac30f172981f10f4c6c2c88432d76

Client contacts
CYLUM

Blockchain
Binance smart chain

Website
Not Provided

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.

Procedure

Step 1 - In-Depth Manual Review

Manual line-by-line code reviews to ensure the logic behind each function is sound and safe from various attack vectors. This is the most important and lengthy portion of the audit process (as automated tools often cannot find the nuances that lead to exploits such as flash loan attacks).

Step 2 - Automated Testing

Simulation of a variety of interactions with your Smart Contract on a test blockchain leveraging a combination of automated test tools and manual testing to determine if any security vulnerabilities exist.

Step 3 – Leadership Review

The engineers assigned to the audit will schedule meetings with our leadership team to review the contracts, any comments or findings, and ask questions to further apply adversarial thinking to discuss less common attack vectors.

Step 4 - Resolution of Issues

Consulting with the team to provide our recommendations to ensure the code's security and optimize its gas efficiency, if possible. We assist project team's in resolving any outstanding issues or implementing our recommendations.

Step 5 - Published Audit Report

Boiling down results and findings into an easy-to-read report tailored to the project. Our audit reports highlight resolved issues and any risks that exist to the project or its users, along with any remaining suggested remediation measures. Diagrams are included at the end of each report to help users understand the interactions which occur within the project.

Background

HackSafe was commissioned by CYLUM to perform an audit of smart contracts:

- https://bscscan.com/token/0x15Ea6B8481bF1C991aC3dC8e67279d31651a56FE#code

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Contract Details

Token contract details for 27.01.2023

Token Type	: Launchpad
Contract name	: CYLUM
Contract address	: 0x15Ea6B8481bF1C991aC3dC8e67279d31651a56FE
Total supply	: 5,000,000,000
Token ticker	: CYM
Decimals	: 9
Token Holders	: 344,399
Transactions count	: 575,134
Compiler version	: v0.6.12+commit.27d51765
Contract deployer address	: 0xbe830877676ac30f172981f10f4c6c2c88432d76
Owner address	: 0xbe830877676ac30f172981f10f4c6c2c88432d76

Audit Summary

According to the standard audit assessment, Customer`s solidity smart contracts are **“secure”**. This token contract does contain owner control, which do not make it fully decentralized.

Insecure	Poor secured	Secure	Well-secured

You are here 

We used various tools like Slither, Mythril and Remix IDE. At the same time this finding is based on critical analysis of the manual audit. All issues found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the issues checking status.

We found 0 critical, 0 high, 1 medium and 0 low.

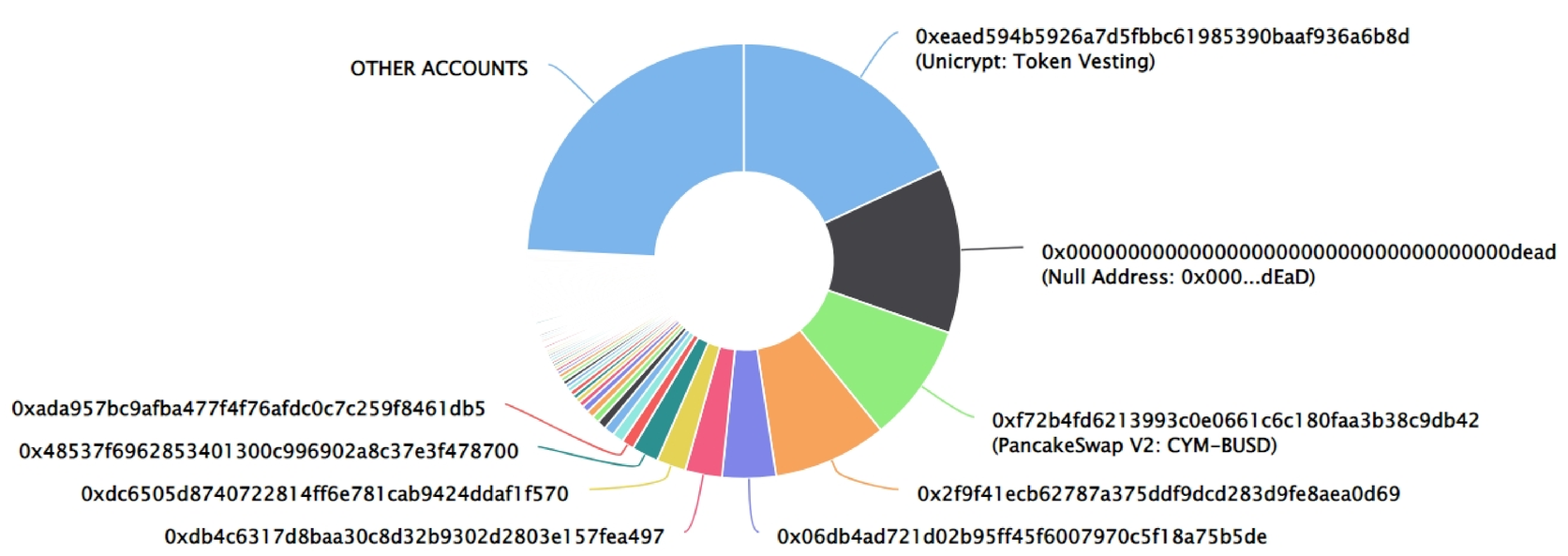
CYLUM Token Distribution

The top 100 holders collectively own 75.80% (3,790,001,914.42 Tokens) of CYLUM

Token Total Supply: 5,000,000,000.00 Token | Total Token Holders: 344,399

CYLUM Top 100 Token Holders

Source: BscScan.com



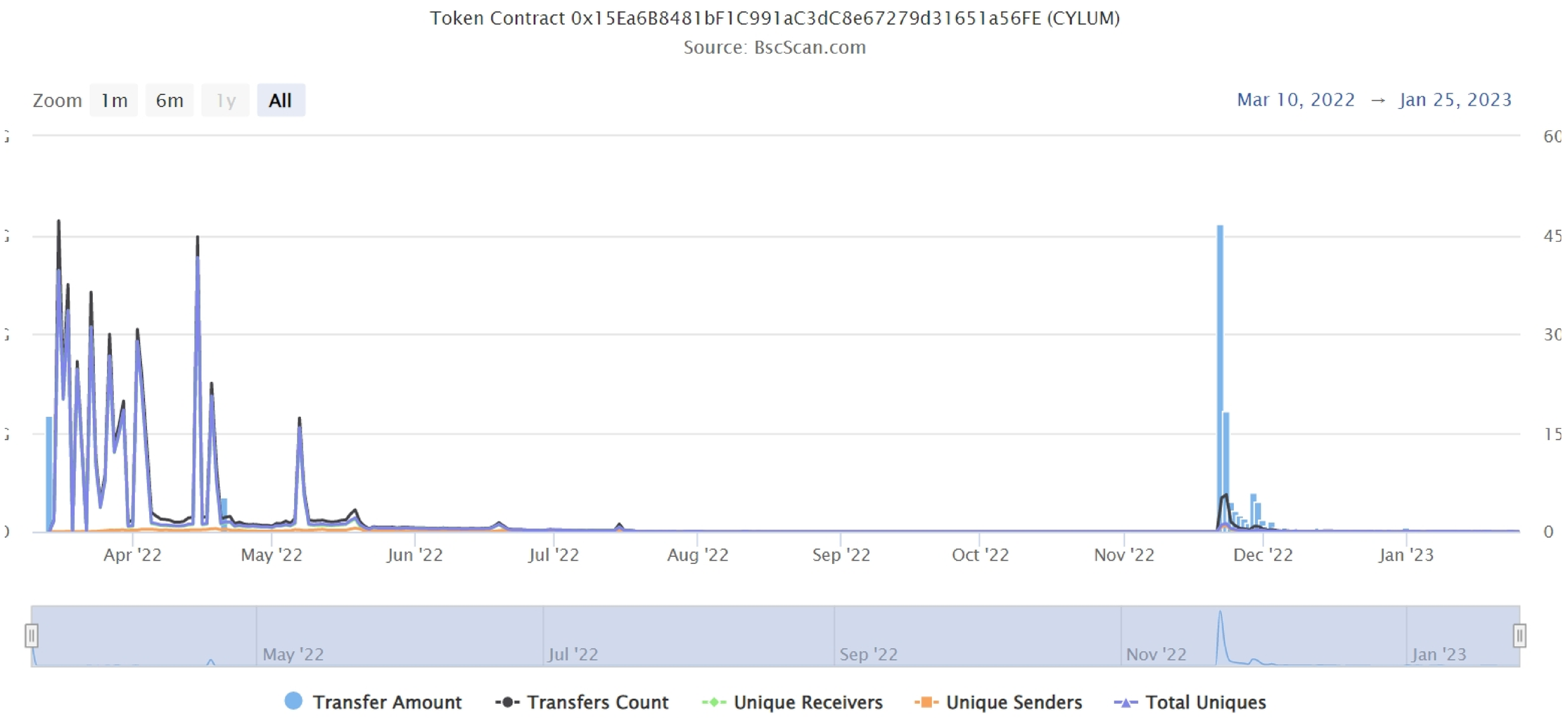
CYLUM Top 20 Token Holders

(A total of 3,790,001,914.42 tokens held by the top 100 accounts from the total supply of 5,000,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	Unicrypt: Token Vesting	901,851,456.172994605	18.0370%
2	Null Address: 0x000...dEaD	616,368,540.514196594	12.3274%
3	PancakeSwap V2: CYM-BUSD	439,869,540.961366864	8.7974%
4	0x2f9f41ecb62787a375ddf9dcd283d9fe8aea0d69	423,629,530.322056027	8.4726%
5	0x06db4ad721d02b95ff45f6007970c5f18a75b5de	200,008,117.607155366	4.0002%
6	0xdb4c6317d8baa30c8d32b9302d2803e157fea497	136,738,224	2.7348%
7	0xdc6505d8740722814ff6e781cab9424ddaf1f570	108,405,157.217141454	2.1681%
8	0x48537f6962853401300c996902a8c37e3f478700	100,211,188.816836842	2.0042%
9	0xada957bc9afba477f4f76afdc0c7c259f8461db5	45,925,407.426962158	0.9185%
10	0x31e163c6dfa44de97d8b641f1a7aa57e2ea44476	41,789,618.464904133	0.8358%
11	0xcd3227e5f356e5f2b97c04290500960c5ef33d5b	38,701,448.981740754	0.7740%
12	0x1b0ac93f6b7726067de2babab6a57dfadacee48e	33,522,937.211884242	0.6705%
13	0x5d88cb9a38dc847a192e166e6a7350f7160eeeba	27,048,803.106183384	0.5410%
14	0x60f402c48e9633c24d9a5a61acb945cee90a703f	26,425,601.366184834	0.5285%
15	0x6843fe4bcde78825dc35d15e7afc3c485dcc57a1	25,769,387.365785228	0.5154%
16	0xc2d04e8c2c212071fbb8f4191c5e83c0d73d958a	19,720,163.778116935	0.3944%
17	0x8a6ab47b1b794275c9e4d931e1f096de117d775c	17,494,504.494707376	0.3499%
18	0xaa3d85ad9d128dfecb55424085754f6dfa643eb1	17,216,403.85097842	0.3443%
19	0x6b04d6715220a8eabaddae28460addd999724582	16,979,986.152048194	0.3396%
20	0x369193128044a7abb023145a0e8bd501f00e81f3	15,710,429.633247861	0.3142%

CYLUM Token Distribution

CYLUM Contract overview



Contract functions details

+Context

- -[Int] _msgSender
- -[Int] _msgData

+[Int] IERC20

- -[Ext] totalSupply
- -[Ext] balanceOf
- -[Ext] transfer #
- -[Ext] allowance
- -[Ext] approve #
- -[Ext] transferFrom #

+[Lib] SafeMath

- -[Int] add
- -[Int] sub
- -[Int] sub
- -[Int] mul
- -[Int] div
- -[Int] div
- -[Int] mod
- -[Int] mod

+[Lib] Address

- - [Int] isContract
- - [Int] sendValue #
- - [Int] functionCall #
- - [Int] functionCall #
- - [Int] functionCallWithValue #
- - [Int] functionCallWithValue #
- - [Pvt] _functionCallWithValue #

+Ownable (Context)

- - [Pub] <constructor>#
- - [Pub] owner
- - [Pub] renounceOwnership #
  - - modifiers: onlyOwner
- - [Pub] transferOwnership #
  - - modifiers: onlyOwner

Contract functions details

+[Int] ILockContract
    -[Ext] lockedAmount
    -[Ext] updateStakeAirdrop #

+ CYLUM (Context, IERC20, Ownable)
    - [Pub]< Constructor> #
    - [Pub] name
    - [Pub] symbol
    - [Pub] decimals
    - [Pub] totalSupply
    - [Pub] balanceOf
    - [Pub] transfer #
    - [Pub] allowance
    - [Pub] approve #
    - [Pub] transferFrom #
    - [Pub] increaseAllowance #
    - [Pub] decreaseAllowance #
    - [Pub] isExcludedRewards
    - [Pub] isExcludedFee
    - [Pub] totalFees
    - [Pub] reflect #
    - [Pub] reflectionFromToken
    - [Pub] tokenFromReflection
    - [Ext] excludeAccountRewards #
      - modifiers: onlyOwner
    - [Ext] excludeAccountFee #
      - modifiers: onlyOwner
    - [Ext] setLockContract #
      - modifiers: onlyOwner
    - [Ext] setSecondLockContract #
      - modifiers: onlyOwner
    - [Ext] withdrawStuckToken #
      - modifiers: onlyOwner
    - [Ext] setFeeHolders #
      - modifiers: onlyOwner
    - [Ext] includeAccountRewards #
      - modifiers: onlyOwner
    - [Ext] includeAccountFee #
      - modifiers: onlyOwner

Contract functions details

- [Pvt] _approve #
- [Pvt] _transfer #
- [Pvt] _transferStandard #
- [Pvt] _transferToExcluded #
- [Pvt] _transferFromExcluded #
- [Pvt] _transferBothExcluded #
- [Pvt] _transferNoFee #
- [Pvt] _reflectFee #
- [Pvt] _getValues
- [Pvt] _getTValues
- [Pvt] _getRValues
- [Pvt] _getRate
- [Pvt] _getCurrentSupply

($) = payable function
= non-constant function

Issues Checking Status

No.	Title	Status
1.	Compiler error	Passed
2.	Missing Input Validation	Passed
3.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
4.	Possible delays in data delivery	Passed
5.	Oracle calls.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Medium Issue
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	Private use data leaks.	Passed
13.	Malicious Event log.	Passed
14.	Scoping and Declarations.	Passed
15.	Uninitialized storage pointers.	Passed
16.	Arithmetic accuracy.	Passed
17.	Design Logic.	Passed
18.	Safe Open Zeppelin contracts implementation and usage.	Passed
19.	Incorrect Naming State Variable	Passed
20.	Too old version	Passed

Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to assets 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 assets 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.

Security Issues

Critical Severity Issues

No critical severity issue found.

High Severity Issues

No high severity issue found.

Medium Severity Issues

One medium severity issue found.

1. Out of gas

- **Issue:**

  The function includeAccountRewards() uses the loop to find and remove addresses from the _excluded list. Function will be aborted with OUT_OF_GAS exception if there will be a long excluded addresses list.

  The function _getCurrentSupply() also uses the loop for evaluating total supply. It also could be aborted with OUT_OF_GAS exception if there will be a long excluded addresses list. Recommendation: Check that the excluded array length is not too big.

Low Severity Issues

No low severity issue found.

Centralization

Owner Privileges

- Deepmaze Coin Contract:
    - Owner can exclude addresses from fees.
    - Owner can change lock contracts addresses.
    - Owner can withdraw ERC20 tokens.
    - Owner can change percentfee.

This smart contract has some functions which can be executed by the admin (Owner) only.
If the admin wallet private key would be compromised, then it would create trouble, as smart contract ownership has not been renounced.

Conclusion

Smart contract contains medium severity issues! The further transfer and operations with the fund raised are not related to this particular contract.

HackSafe 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.