



# Smart Contract Security Audit Report

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## OHAYO

December 2022

Security Status



[www.hacksafe.io](https://www.hacksafe.io)



# Audit Details



## Audited project

OHAYO



## Deployer address

0x441cecbac0523417f659d31dcb8cd97a5d6f1efc



## Client contacts

OHAYO Team



## Blockchain

Ethereum



## 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 OHAYO to perform an audit of smart contracts:

- <https://bscscan.com/token/0x9F06A54870F827Ca0227e5F3E5b665150e689e7B#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 understood to 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

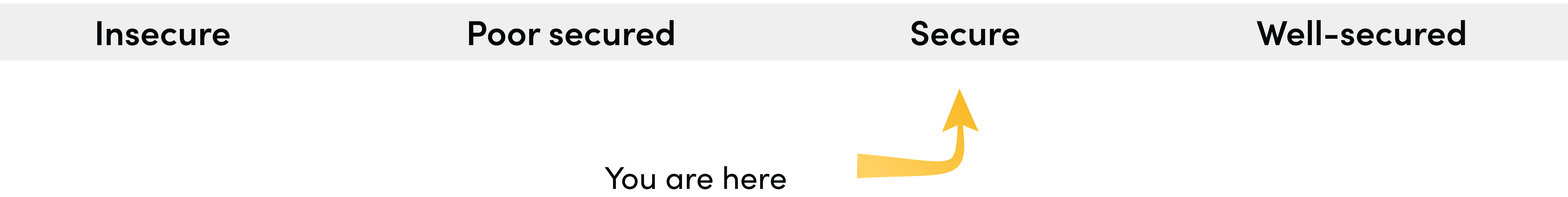
## Token contract details for 28.12.2022

Token Type	: MEME
Contract name	: OHAYO
Contract address	: 0x9F06A54870F827Ca0227e5F3E5b665150e689e7B
Total supply	: 1,000,000,000,000
Token ticker	: OHAYO
Decimals	: 9
Token Holders	: 238
Transactions count	: 10,230
Compiler version	: v0.8.4+commit.c7e474f2
Contract deployer address	: 0x441cecbac0523417f659d31dcb8cd97a5d6f1efc
Owner address	: 0xa9c093e82166f5bf7f60ed81e89bd1061afb218f



# 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.



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, 0 medium and 0 low.

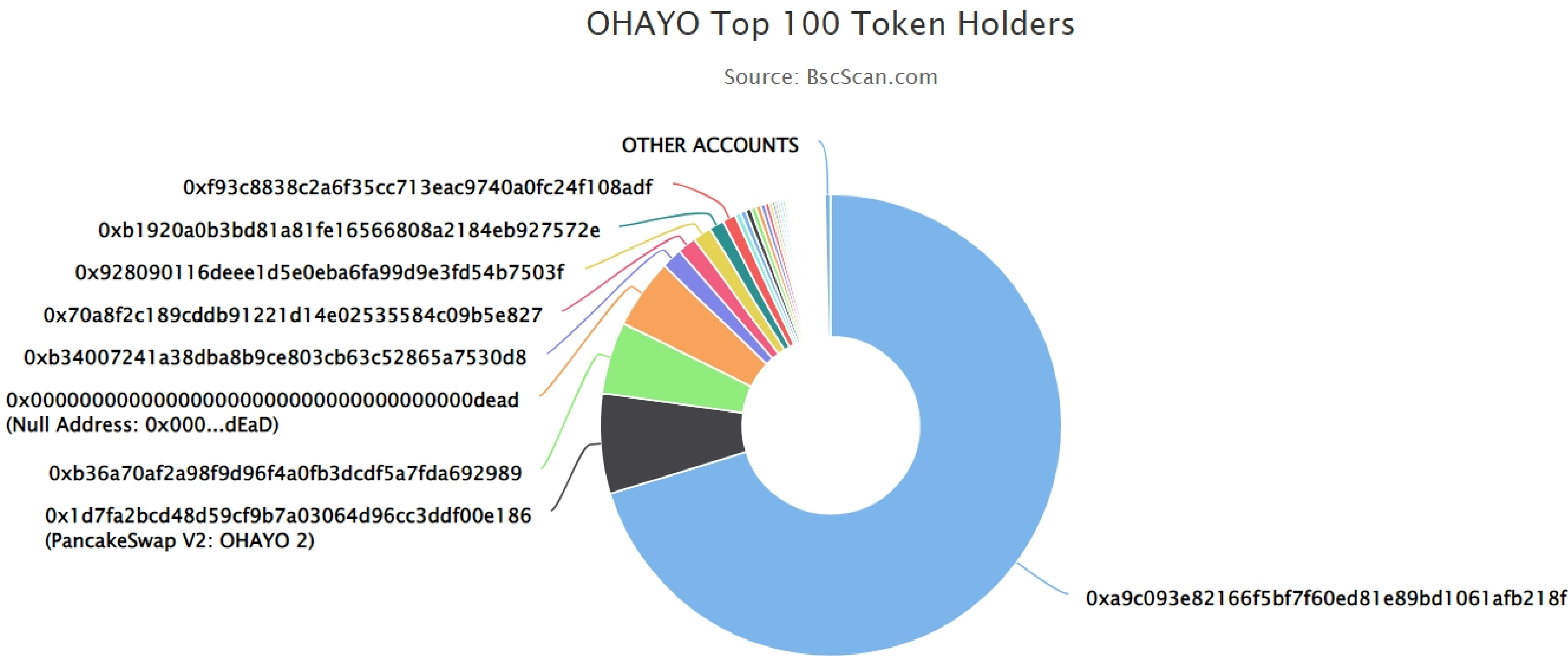
# OHAYO Token Distribution

 The top 100 holders collectively own 99.59% (995,904,393,736.30 Tokens) of OHAYO

 Token Total Supply: 1,000,000,000,000.00 Token




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Total Token Holders: 238



## OHAYO Top 20 Token Holders

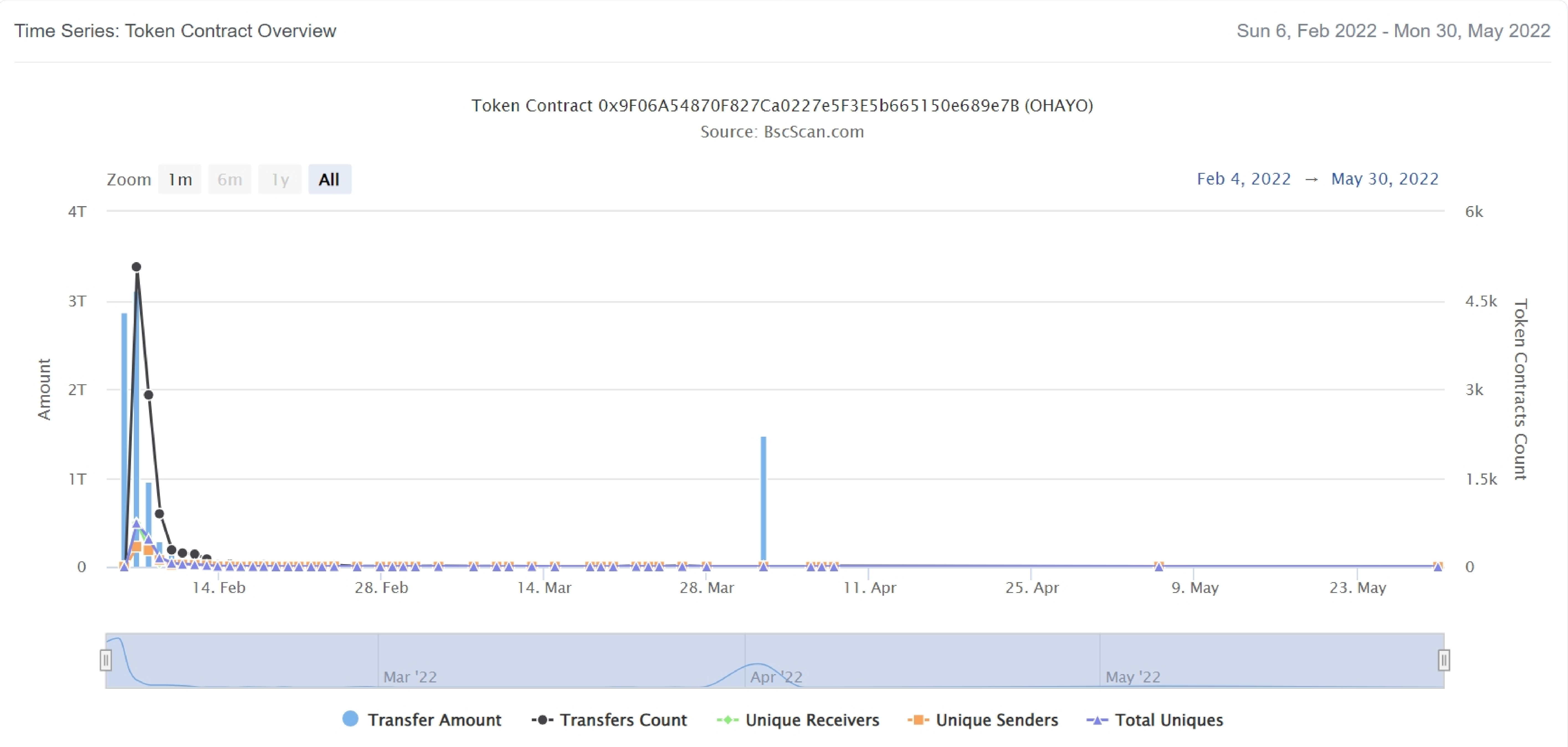
(A total of 995,904,393,736.30 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	0xa9c093e82166f5bf7f60ed81e89bd1061afb218f	702,107,740,085.036346049	70.2108%
2	 PancakeSwap V2: OHAYO 2	70,415,238,349.913189566	7.0415%
3	0xb36a70af2a98f9d96f4a0fb3dcd5a7fda692989	50,118,197,229.371595306	5.0118%
4	Null Address: 0x000...dEaD	49,023,966,559.153837075	4.9024%
5	0xb34007241a38dba8b9ce803cb63c52865a7530d8	14,552,184,470.902896041	1.4552%
6	0x70a8f2c189cddb91221d14e02535584c09b5e827	13,107,908,484.465676193	1.3108%
7	0x928090116deee1d5e0eba6fa99d9e3fd54b7503f	12,908,518,038.365816983	1.2909%
8	 0xb1920a0b3bd81a81fe16566808a2184eb927572e	10,295,870,863.749371971	1.0296%
9	 0xf93c8838c2a6f35cc713eac9740a0fc24f108adf	9,508,948,406.096589907	0.9509%
10	0x96daaedc2016e22892bbc73d623f6bd92d709494	4,060,809,000	0.4061%
11	0x22c7afb7ba02f38740bb45bf0e62fd11ab089dd2	3,796,916,582.699999985	0.3797%
12	0x65d8e2e906a66381ade66364ac905dc3a05174fd	3,788,726,617.460149812	0.3789%
13	0x7048202d1fd06ea5505bad5141b46a1961d641f2	3,664,350,000	0.3664%
14	0x6579894f15eaf15c640634462ce9bd8400b48f20	3,567,438,371.565916353	0.3567%
15	0xd132e14714886f8503df18e17fd7dbda10538fda	3,022,668,344.565729264	0.3023%
16	0x3ac0802fc6844abd123b84d9d1db0581141e9815	2,873,439,194.84840692	0.2873%
17	0x2532bc20f35ce86dd71723a7810b9be1556a797a	2,166,322,925.325791663	0.2166%
18	0xdb07d6c30d8d01b0a110218947c1bffb2a4352b6	1,905,096,793.423616859	0.1905%
19	0x339b45cee81a689b0554813113c035c373f80c10	1,876,776,875.318746432	0.1877%
20	0xa2c3a34b505e614c4b9247ac2b3ddac7b90c72e7	1,791,872,220.190905476	0.1792%



# OHAYO Token Token Distribution

## OHAYO 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)

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



# Contract functions details

## **+ [Int]** IUniswapV2Factory

- [Ext] feeTo
- [Ext] feeToSetter
- [Ext] allPairs
- [Ext] allPairsLength
- [Ext] createPair
- [Ext] setFeeTo
- [Ext] setFeeToSetter

## **+ [Int]** IUniswapV2Pair

- [Ext] name
- [Ext] symbol
- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] allowance
- [Ext] approve
- [Ext] transfer
- [Ext] transferFrom
- [Ext] DOMAIN\_SEPARATOR
- [Ext] PERMIT\_TYPEHASH
- [Ext] nonces
- [Ext] permit
- [Ext] MINIMUM\_LIQUIDITY
- [Ext] factory
- [Ext] token0
- [Ext] token1
- [Ext] getReserves
- [Ext] price0CumulativeLast
- [Ext] price1CumulativeLast
- [Ext] kLast
- [Ext] burn
- [Ext] swap
- [Ext] skim
- [Ext] sync
- [Ext] initialize

## **+ [Int]** IUniswapV2Router01

- [Ext] factory
- [Ext] WETH

# Contract functions details

## +[Int] IUniswapV2Factory

- [Ext] addLiquidity
- [Ext] addLiquidityETH \$
- [Ext] removeLiquidity
- [Ext] removeLiquidityETH
- [Ext] removeLiquidityWithPermit
- [Ext] removeLiquidityETHWithPermit
- [Ext] swapExactTokensForTokens
- [Ext] swapTokensForExactTokens
- [Ext] swapExactETHForTokens
- [Ext] swapTokensForExactETH
- [Ext] swapExactTokensForETH
- [Ext] swapETHForExactTokens \$
- [Ext] quote
- [Ext] getAmountOut
- [Ext] getAmountIn
- [Ext] getAmountsOut
- [Ext] getAmountsIn

## +[Int] IUniswapV2Router02 (IUniswapV2Router01)

- [Ext] removeLiquidityETHSupportingFeeOnTransferTokens
- [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens
- [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens
- [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens \$
- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens

## +OHAYO (Context, IERC20, Ownable)

- <constructor>
- [Ext] <receive> \$
- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #



# Contract functions details

- [Ext] setMaxBalance #
  - modifiers: onlyOwner
- [Pub] isExcludedFromFees #
- [Pub] excludeFromFees #
  - modifiers: onlyOwner
- [Pub] includeInFees #
  - modifiers: onlyOwner
- [Pub] isExcludedFromMaxBalance
- [Pub] excludeFromMaxBalance #
  - modifiers: onlyOwner
- [Pub] includeInMaxBalance #
  - modifiers: onlyOwner
- [Pub] totalFees
- [Pub] liquidityFee
- [Pub] marketingFee
- [Pub] burnFee
- [Pub] maxFees
- [Pub] liquifyThreshold
- [Pub] maxBalance
- [Pvt] \_transfer #
- [Pvt] collectFees #
  - modifiers: lockTheSwap
- [Pvt] swapAndLiquify #
- [Pvt] swapAndSendToFee #
- [Pvt] swapTokensForEth #
- [Pvt] swapTokensForMarketingToken #
- [Pvt] addLiquidity #
- [Pvt] transferToken #

(\$) = 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.	Passed
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

No medium severity issue found.

## ✔ Low Severity Issues

No low severity issue found.

### Notes:

There is sending tokens to dead address instead of real burn (decreasing total supply).



# Centralization

## Owner privileges :

- OHAYO Contract:
  - Owner Can Change Marketing Address.
  - Owner Can Change Marketing, Burn And Liquidity Fee.
  - Owner Can Change \_Liquifythreshold Value.
  - Owner Can Change Marketingwallettoken Address.
  - Owner Can Change \_Maxbalance Value.
  - Owner Can Exclude From The Fee.
  - Owner Can Exclude From Max Balance

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. Following are Admin functions:

- renounceOwnership
- transferOwnership
- setMarketingAddress
- setLiquidityFeePercent
- setMarketingFeePercent
- setBurnFeePercent
- setLiquifyThreshold
- setMarketingWalletToken
- setMaxBalance
- excludeFromFees
- includeinFees
- excludeFromMaxBalance
- includeinMaxBalance

# Conclusion

Smart contract contains no low 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.