HackSafe

Smart Contract Security Audit Report

RISU

February 2023

Security Status

★★★★½

www.hacksafe.io

Audit Details

Audited project
RISU

Deployer address
0xbbc56b7cc37f792221ac048e5baa99fdd3ccd765

Client contacts
RISU

Blockchain
Binance smart chain

Website
http://risublockchain.com/

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 RISU to perform an audit of smart contracts:

- https://bscscan.com/token/0x8163100460d2186de4e700c479d5e87283426d27#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 01.02.2023

Token Type	: DEFI
Contract name	: RISU
Contract address	: 0x8163100460d2186DE4e700C479D5e87283426D27
Total supply	: 1,000,000,000
Token ticker	: RISU
Decimals	: 9
Token Holders	: 3,096
Transactions count	: 72,655
Compiler version	: v0.8.10+commit.fc410830
Contract deployer address	: 0xbbc56b7cc37f792221ac048e5baa99fdd3ccd765
Owner address	: 0x0000000000000000000000000000000000000000

Social profiles

Twitter Profile	: https://twitter.com/RisuChain
Github Profile	: https://github.com/Risuchain
Telegram profile	: https://t.me/RisuChain
Coinmarketcap profile	: https://t.me/RisuChain
Coingecko Profile	: https://www.coingecko.com/en/coins/risu/

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, 0 medium and 0 low.

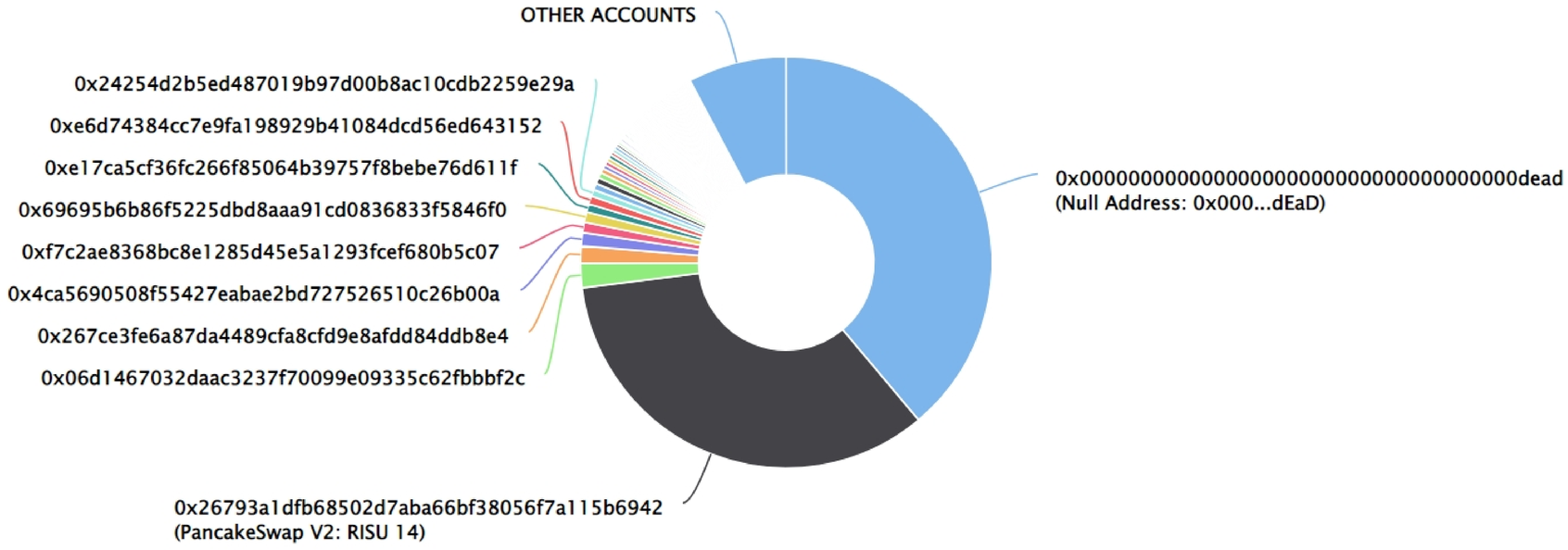
RISU Token Distribution

The top 100 holders collectively own 92.26% (922,592,519.77 Tokens) of Risu

Token Total Supply: 1,000,000,000.00 Token | Total Token Holders: 3,096

Risu Top 100 Token Holders

Source: BscScan.com



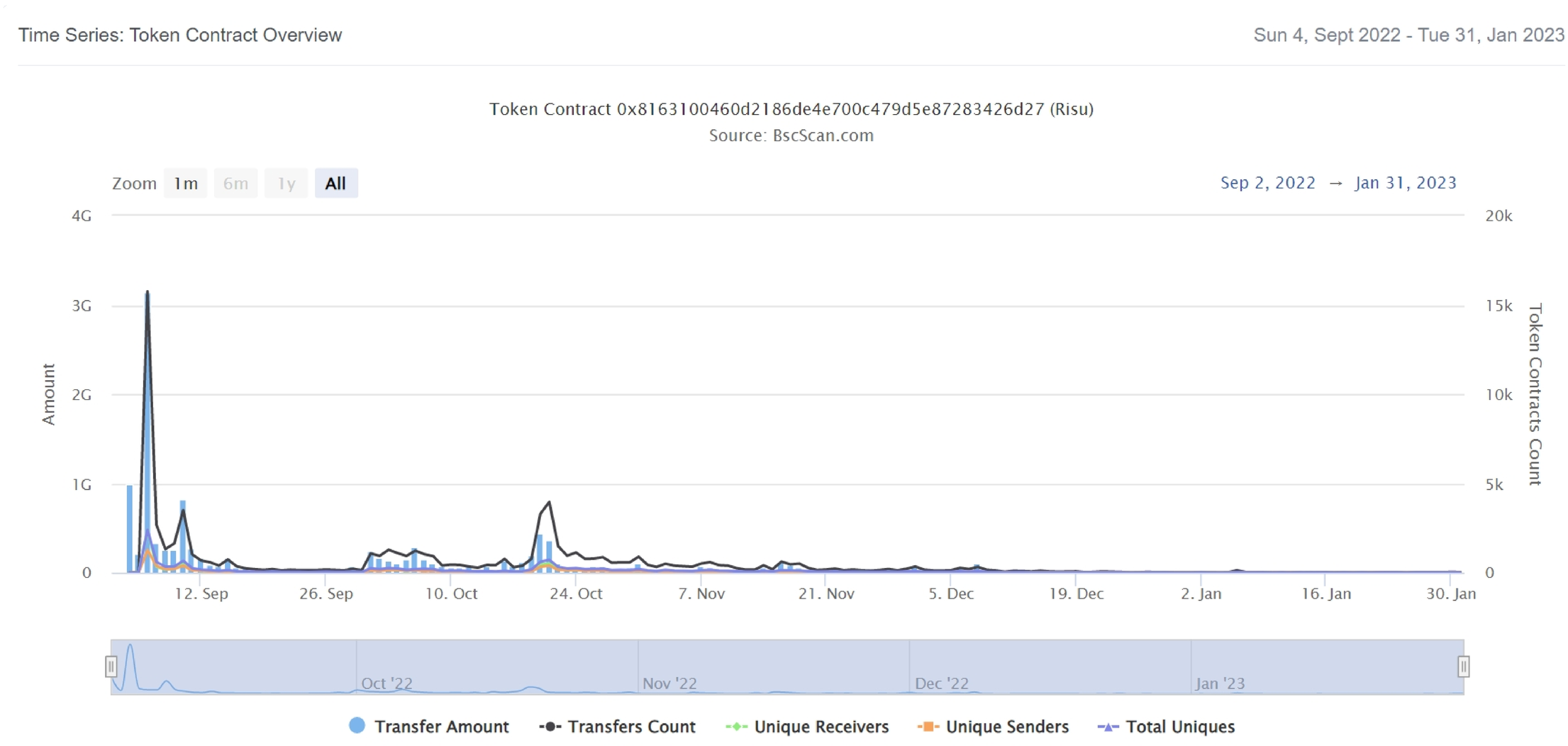
RISU Top 20 Token Holders

(A total of 922,592,519.77 tokens held by the top 100 accounts from the total supply of 1,000,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	Null Address: 0x000...dEaD	388,911,959.061074752	38.8912%
2	PancakeSwap V2: RISU 14	341,452,310.471166413	34.1452%
3	0x06d1467032daac3237f70099e09335c62fbbbf2c	19,176,220.399366703	1.9176%
4	0x267ce3fe6a87da4489cfa8cfd9e8afdd84ddb8e4	13,279,024.41257128	1.3279%
5	0x4ca5690508f55427eabae2bd727526510c26b00a	10,458,570.335140659	1.0459%
6	0xf7c2ae8368bc8e1285d45e5a1293fcef680b5c07	8,207,244.518013049	0.8207%
7	0x69695b6b86f5225dbd8aaa91cd0836833f5846f0	8,111,420.398600125	0.8111%
8	0xe17ca5cf36fc266f85064b39757f8bebe76d611f	6,377,877.736805365	0.6378%
9	0xe6d74384cc7e9fa198929b41084dcd56ed643152	6,322,134.166537766	0.6322%
10	0x24254d2b5ed487019b97d00b8ac10cdb2259e29a	5,396,549.293480269	0.5397%
11	0x51292bf7a04d289e776d129bd051f7ba1a8bc067	5,014,924.449212924	0.5015%
12	0xa0178ff513b69bb8ee50f9f5a504d5c9aea8d61b	4,789,648.13484225	0.4790%
13	0xc3e5a2e6024a88caa1a6476576fd7ce0046bc373	4,304,486.968123575	0.4304%
14	0xe3387bef6da4db7ebca62d2c9608f000430a49de	3,731,839.990085019	0.3732%
15	0x56ee1c6e3d7a5c12459e80dcd7bdee9cbbaa4e0f	3,159,072.271365506	0.3159%
16	0x62765d9eea6b333ef4e5ce172fc0a3eb87388f14	3,157,991.537869108	0.3158%
17	0xa5b82773e4b9d55765dad0a6be4adc94c961239c	2,955,821.938190336	0.2956%
18	0xd314d0f4278098ff5772ebbb3d9b5a42dd8349d8	2,912,231.438371922	0.2912%
19	0x34748a89d56f492f849b8d85a7108058defe418d	2,651,055.89251177	0.2651%
20	0x80cc8bb758ec9c2da3b371d5066c2d76e42fac13	2,605,781.887062961	0.2606%

RISU Token Distribution

RISU Contract overview



Contract functions details

+[Int] IERC20
    -[Ext] totalSupply
    -[Ext] balanceOf
    -[Ext] transfer #
    -[Ext] allowance
    -[Ext] approve #
    -[Ext] transferFrom #

+[Lib] IDexFactory
    - [Ext] createPair #

+[Lib] IDexRouter
    - [Ext] factory
    - [Ext] WETH
    - [Ext] addLiquidityETH ($)
    - [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

+Context
    -[Int] _msgSender
    -[Int] _msgData

+Ownable (Context)
    - [Pub] <Constructor> #
    - [Pub] owner
    - [Pub] renounceOwnership #
      - modifiers: onlyOwner
    - [Pub] transferOwnership #
      - modifiers: onlyOwner
    - [Pvt] _setOwner #

+[Lib] SafeMath
    -[Int] add
    -[Int] sub
    -[Int] sub
    -[Int] mul
    -[Int] div
    -[Int] div
    -[Int] mod
    -[Int] mod

Contract functions details

+ RISU (Context, IERC20, Ownable)
    - [Pub] <Constructor> #
    - [Pub] name
    - [Pub] symbol
    - [Pub] decimals
    - [Pub] totalSupply
    - [Pub] balanceOf
    - [Pub] allowance
    - [Pub] transfer #
    - [Pub] approve #
    - [Pub] transferFrom #
    - [Pub] increaseAllowance #
    - [Pub] decreaseAllowance #
    - [Pub] isExcludedFromReward
    - [Pub] totalHolderDistribution
    - [Pub] isExcludedFromFee
    - [Pub] isExcludedFromMaxHoldLimit
    - [Pub] isExcludedFromMaxTxnLimit
    - [Pub] deliver #
    - [Pub] reflectionFromToken
    - [Pub] tokenFromReflection
    - [Pub] includeOrExcludeFromMaxHoldLimit #
      - modifiers: onlyOwner
    - [Pub] includeOrExcludeFromMaxTxnLimit #
      - modifiers: onlyOwner
    - [Pub] setAntiBotStopEnabled #
      - modifiers: onlyOwner
    - [Pub] setMaxHoldingAmount #
      - modifiers: onlyOwner
    - [Pub] setMinBuyLimit #
      - modifiers: onlyOwner
    - [Ext] removeStuckToken #
      - modifiers: onlyOwner
    - [Ext] setSellFeePercent #
      - modifiers: onlyOwner
    - [Pub] includeOrExcludeFromFee #
      - modifiers: onlyOwner

Contract functions details

- [Pub] setMinTokenToSwap #
  - modifiers: onlyOwner
- [Ext] setBuyFeePercent #
  - modifiers: onlyOwner
- [Pub] enableOrDisableSwapAndLiquify #
  - modifiers: onlyOwner
- [Ext] enableOrDisableFees #
  - modifiers: onlyOwner
- [Ext] setmarketWalletAddress #
  - modifiers: onlyOwner
- [Ext] <Fallback> ($)
- [Int] totalFeePerTx
- [Pvt] _checkMaxWalletAmount
- [Pvt] _getRate
- [Pvt] setBuyFee #
- [Pvt] _getCurrentSupply
- [Pvt] removeAllFee #
- [Pvt] setSellFee #
- [Ext] addSniperInList #
  - modifiers: onlyOwner
- [Ext] removeSniperFromList #
  - modifiers: onlyOwner
- [Pvt] _approve #
- [Pvt] _transfer #
- [Pvt] _tokenTransfer #
- [Pvt] _transferStandard #
- [Pvt] _transferFromExcluded #
- [Pvt] _transferBothExcluded #
- [Pvt] _transferToExcluded #
- [Pvt] _reflectFee #
- [Int] _takeAllFee #
- [Int] _takeBurnFee #
- [Pvt] swapAndLiquify #

+ [Lib] Utils
  - [Int] swapTokensForEth #
  - [Int] addLiquidity #

($) = 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:**
  - Exclusion from reward is not realized, so using this logic for transfer is unused.
  - transferFrom() function include sniper restriction, that is also included in internal transfer function.
  - Contract can receive BNB, but there is no logic to withdraw it.
  - Owner can pause transfers.
  - Comments don’t match the condition – “require(amount <= minBuyLimit,"Amount must be greater than minimum buy Limit")”
  - Fees are taking only in DEX transactions.

Centralization

Owner Privileges

- RISU Coin Contract:
    - Owner can include/exclude from max hold limit.
    - Owner can enable/disable antiBotStopEnabled.
    - Owner can change maxHoldingAmount and minBuyLimit.
    - Owner can withdraw BEP20 tokens.
    - Owner can change fees.
    - Owner can change minTokenToSwap.
    - Owner can exclude from the fees.
    - Owner can enable/disable swap and liquify.
    - Owner can enable/disable fees.
    - Owner can change marketWallet.
    - Owner can add/remove snipers.

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 not create trouble, as smart contract ownership has been renounced.

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.