



Smart Contract Security Audit Report

Reliance Token

November 2022

Security Status



www.hacksafe.io



Audit Details



Audited project

Reliance Token



Deployer address

0xc0cF9f2789fEDB7fDB76A71ea5877E6617b6d9d5



Client contacts

Reliance Token Team



Blockchain

Binance smart chain



Website

<https://www.reliancetoken.org/>

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 Reliance Token to perform an audit of smart contracts:

- <https://bscscan.com/token/0x82d530F1f24a902d5d31B6808ad8823ea4F2E4d1#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.

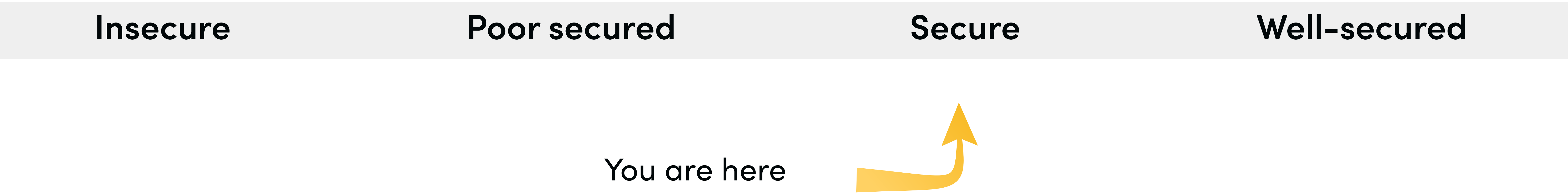
Contract Details

Token contract details for 16.11.2022

Token Type	: DEFI
Contract name	: Reliance
Contract address	: 0x82d530F1f24a902d5d31B6808ad8823ea4F2E4d1
Total supply	: 91,286,465.238657
Token Ticker	: Rely
Decimals	: 9
Token Holders	: 243
Transactions count	: 4,051
Tax fee	: 3%
Burn fee	: 3%
Charity fee	: 2%
Total fee	: 8%
Compiler version	: v0.8.2+commit.661d1103
Contract deployer address	: 0xc0cf9f2789fedb7fdb76a71ea5877e6617b6d9d5
Owner address	: 0xc0cF9f2789fEDB7fDB76A71ea5877E6617b6d9d5

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 as owner does have control over smart contract.



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.

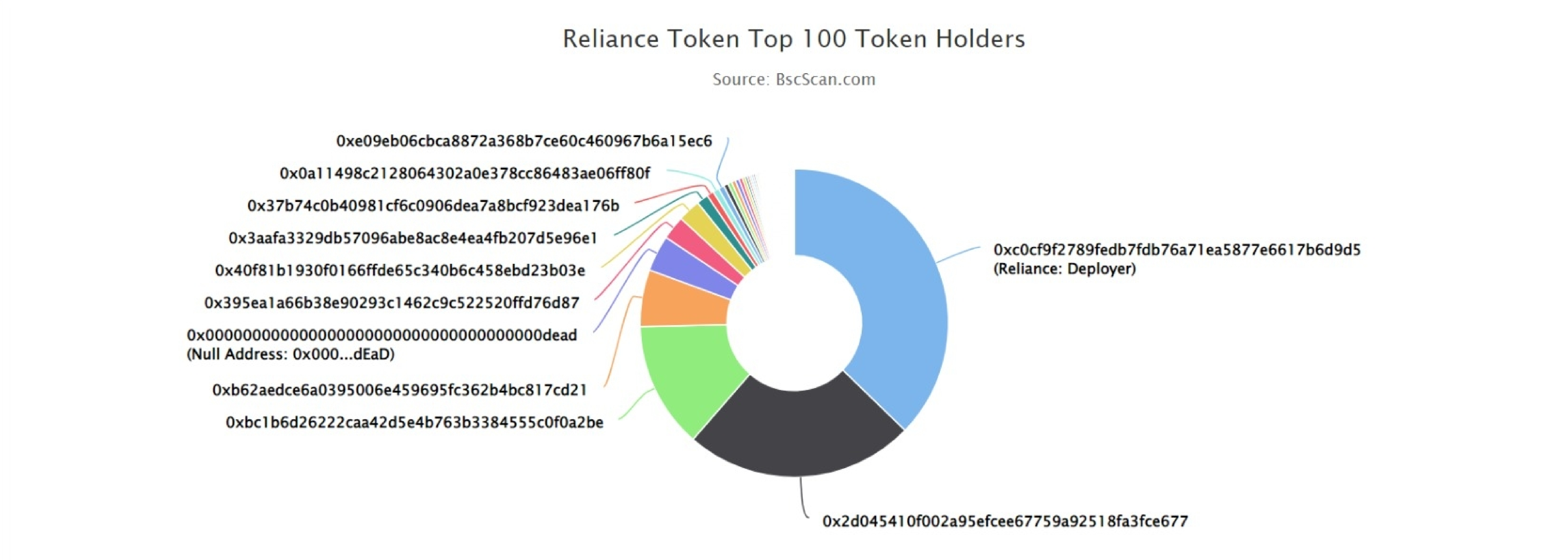
We found 0 critical, 0 high, 1 medium and 1 low.

Reliance Token Distribution

 The top 100 holders collectively own 106.52% (97,238,639.82 Tokens) of Reliance Token



 Token Total Supply: 91,286,465.24 Token

Total Token Holders: 243



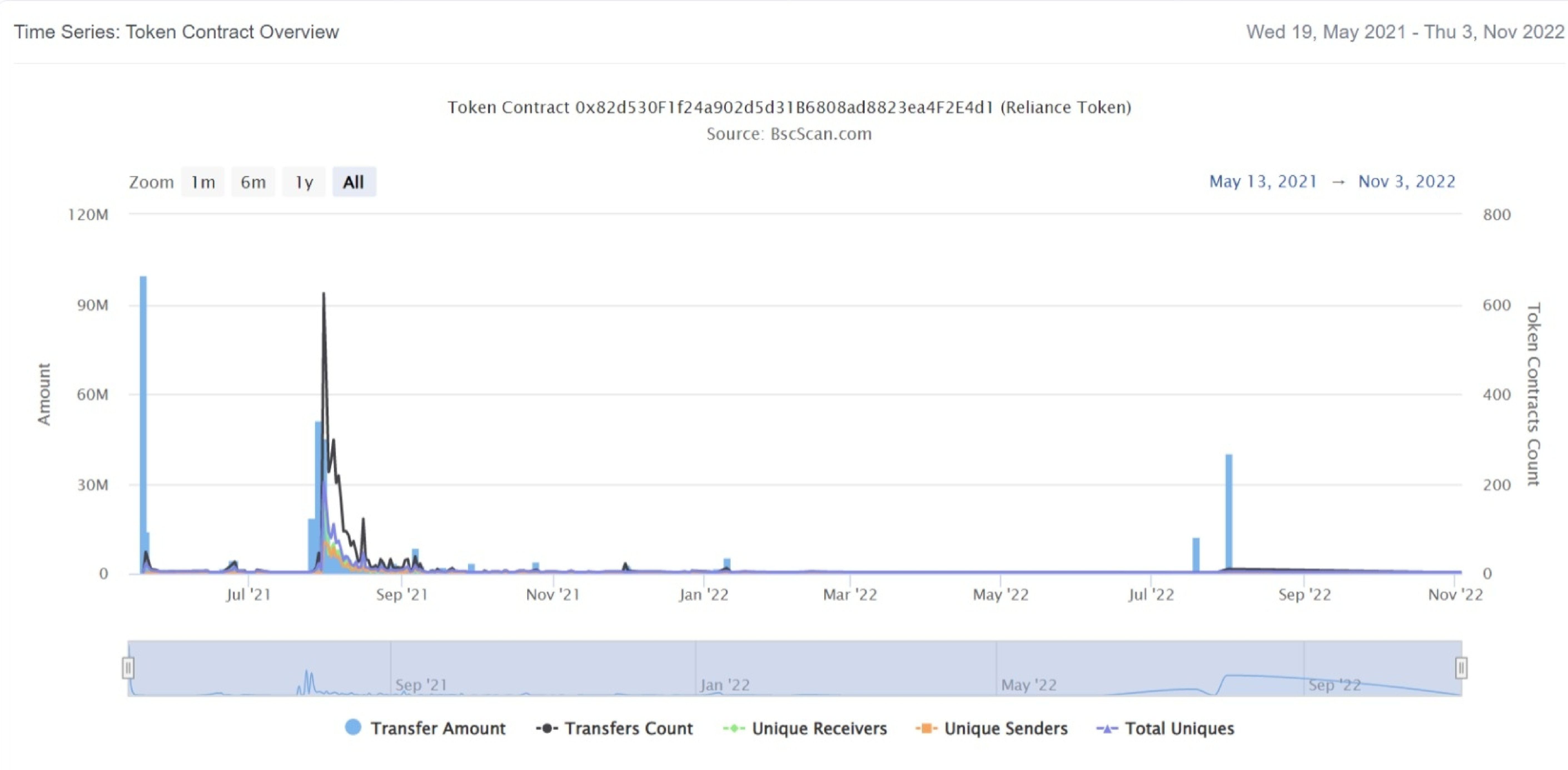
Reliance Token Top 20 Token Holders

(A total of 97,238,639.82 tokens held by the top 100 accounts from the total supply of 91,286,465.24 token)

Rank	Address	Quantity (Token)	Percentage
1	Reliance: Deployer	36,230,998.456936082	39.6893%
2	 0x2d045410f002a95efcee67759a92518fa3fce677	23,494,139.69913587	25.7367%
3	0xbc1b6d26222caa42d5e4b763b3384555c0f0a2be	12,859,988.865929993	14.0875%
4	0xb62aedce6a0395006e459695fc362b4bc817cd21	5,782,746.974713647	6.3347%
5	Null Address: 0x000...dEaD	3,667,570.902908654	4.0177%
6	0x395ea1a66b38e90293c1462c9c522520ffd76d87	2,435,000	2.6674%
7	0x40f81b1930f0166ffde65c340b6c458ebd23b03e	2,298,884.951788786	2.5183%
8	 0x3aafa3329db57096abe8ac8e4ea4fb207d5e96e1	1,196,642.492916884	1.3109%
9	0x37b74c0b40981cf6c0906dea7a8bcf923dea176b	705,281.421195097	0.7726%
10	0x0a11498c2128064302a0e378cc86483ae06ff80f	630,761.597820587	0.6910%
11	0xe09eb06cbca8872a368b7ce60c460967b6a15ec6	601,064.055958807	0.6584%
12	0x05324e6fde63129dc8e96c8295ea520d23a1e6c3	460,329.597982344	0.5043%
13	0xd4dba1c251f61cd975fd78c7e0091c9afe5b6040	407,090.373316705	0.4459%
14	0x0ac2f31969a9034e405d0e6dcb81732ca9b4c692	403,013.846927227	0.4415%
15	0x0d9b1e53cbb251572d982d9f96520e8d40d22bb0	381,067.133287277	0.4174%
16	0x8c5c9253f26fc110a5878dccb9cef12ecc51dc25	358,194.242090812	0.3924%
17	0xf0e47192b69578f0db7344818f60117c571f8376	284,661.519132506	0.3118%
18	0xa98b0b2572998559b82946cffe16e0e8a73adf1	258,764.701311813	0.2835%
19	0x514c74cc3d864fa18d299a64100a5e7134312c26	209,080.850176034	0.2290%
20	0x7b94ff1610f27e854fc38e7c926198e837e923b0	202,920.225638264	0.2223%

Reliance Token Distribution

Reliance Token Contract Overview



Contract functions details

+Context

- [Int] _msgSender
- [Int] _msgData

+ [Int] IBEP20

- [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

+Reliance (Context, IBEP20, Ownable)

-<constructor>

- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Pub] isExcluded
- [Pub] isCharity
- [Pub] totalFees
- [Pub] totalBurn #
- [Pub] totalCharity
- [Pub] deliver #
- [Pub] reflectionFromToken #
- [Pub] tokenFromReflection #
- [Ext] excludeAccount #
 - modifiers: onlyOwner
- [Ext] includeAccount #
 - modifiers: onlyOwner
- [Ext] setAsCharityAccount #
 - modifiers: onlyOwner
- [Pvt] _approve #
- [Pvt] _transfer #
- [Pvt] _transferStandard #
- [Pvt] _standardTransferContent #
- [Pvt] _transferToExcluded #
- [Pvt] _excludedFromTransferContent #
- [Pvt] _transferFromExcluded #
- [Pvt] _excludedToTransferContent #
- [Pvt] _transferBothExcluded #
- [Pvt] _bothTransferContent #

Contract functions details

- [Pvt] _reflectFee
- [Pvt] _getValues
- [Pvt] _getTBasics
- [Pvt] getTTransferAmount
- [Pvt] _getRBasics
- [Pvt] _getRTransferAmount
- [Pvt] _getRate
- [Pvt] _getCurrentSupply
- [Pvt] _sendToCharity
- [Pvt] removeAllFee #
- [Pvt] restoreAllFee #
- [Pvt] _getTaxFee
- [Pvt] _getMaxTxAmount

(\$) = payable function

= non-constant function

Issues Checking Status

No.	Title	Status
1.	Unlocked Compiler Version	Low issue
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 limit.

- **Description**

The smart contract has functions which has used for includeAccount, _getCurrentSupply. Large length of _excluded can cause an error of out of gas for these two functions.

- **Recommendation**

It is advisable to either remove for loop or use smaller length to avoid the gas limit error while transaction

✔ Low Severity Issues

One low severity issue found.

1. Unlocked Compiler Version.

- **Description**

The contract utilizes an unlocked compiler version. An unlocked compiler version in the contract's source code permits the user to compile it at or above a particular version. This, in turn, leads to differences in the generated bytecode between compilations due to differing compiler version numbers. This can lead to ambiguity when debugging as compiler-specific bugs may occur in the codebase that would be difficult to identify over a span of multiple compiler versions rather than a specific one.

- **Recommendation**

It is advisable that the compiler version is alternatively locked at the lowest version possible so that the contract can be compiled. For example, for version ^0.8.2 the contract should contain the following line:
pragma solidity 0.8.2;

Centralization

Owner Privileges :

- Reliance Token Contract:
 - Owner can transfer and renounce ownership.
 - Owner can set charity address.
 - Owner can exclude and include account.

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:

- Transferownership
- Renounceownership
- Excludeaccount
- Includeaccount
- Setascharityaccount

Conclusion

Smart contract contains low and 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.