



Smart Contract Security Audit Report

VIRSACOIN

August 2022

Security Status



www.hacksafe.io



Audit Details



Audited project

VIRSACOIN



Deployer address

0xB80D7336Ba674775d25DA1973EEedF14F39A6217



Client contacts

VIRSACOIN team



Blockchain

Binance Smart chain



Website

<https://virsacoin.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 VIRSACOIN to perform an audit of smart contracts:

- <https://bscscan.com/address/0x297ed5337a7dd8a9661c47c4d2008540a5638ff0#code>

The purpose of the audit was to achieve the

- 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 24.08.2022

Token Type	: BEP20
Contract name	: VIRSACOIN
Contract address	: 0x297ed5337A7dd8A9661C47c4D2008540a5638Ff0
Compiler version	: v0.5.16+commit.9c3226ce
Total supply	: 100,000,000
Token Ticker	: VIR
Decimals	: 18
Token Holders	: 116
Transactions count	: 736
Contract deployer address	: 0xB80D7336Ba674775d25DA1973EEeaF14F39A6217
Owner address	: 0xb80d7336ba674775d25da1973eeeeaf14f39a6217

Social profiles

Twitter profile	: https://twitter.com/virsacoin
Telegram Profile	: https://t.me/virsacoin/
Facebook profile	: https://www.facebook.com/virsacoin

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.

Insecure	Poor secured	Secure	Well-secured
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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 2 low and some very low-level issues. These issues are not critical ones.

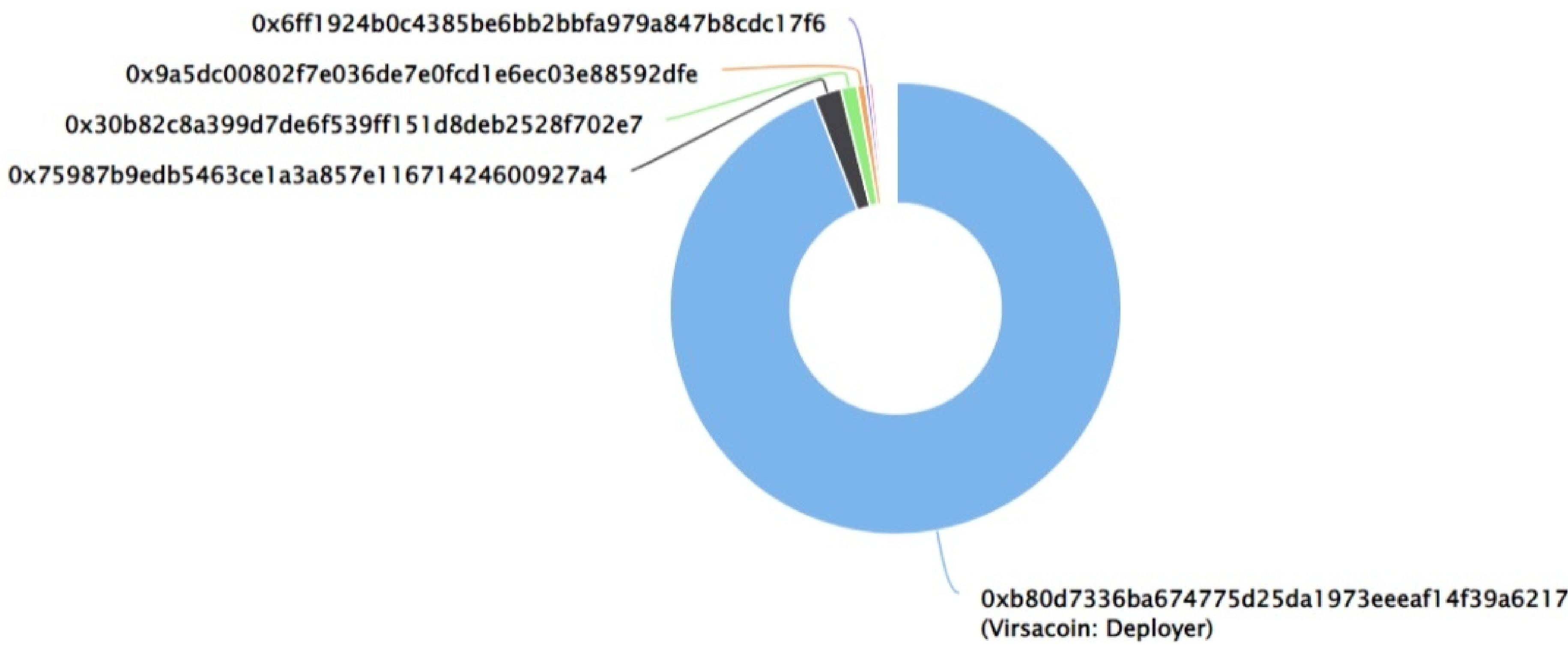
VIRSACOIN Token Distribution

💡 The top 100 holders collectively own 100.00% (99,999,887.58 Tokens) of VIRSACOIN

💡 Token Total Supply: 100,000,000.00 Token | Total Token Holders: 116

VIRSACOIN Top 100 Token Holders

Source: BscScan.com



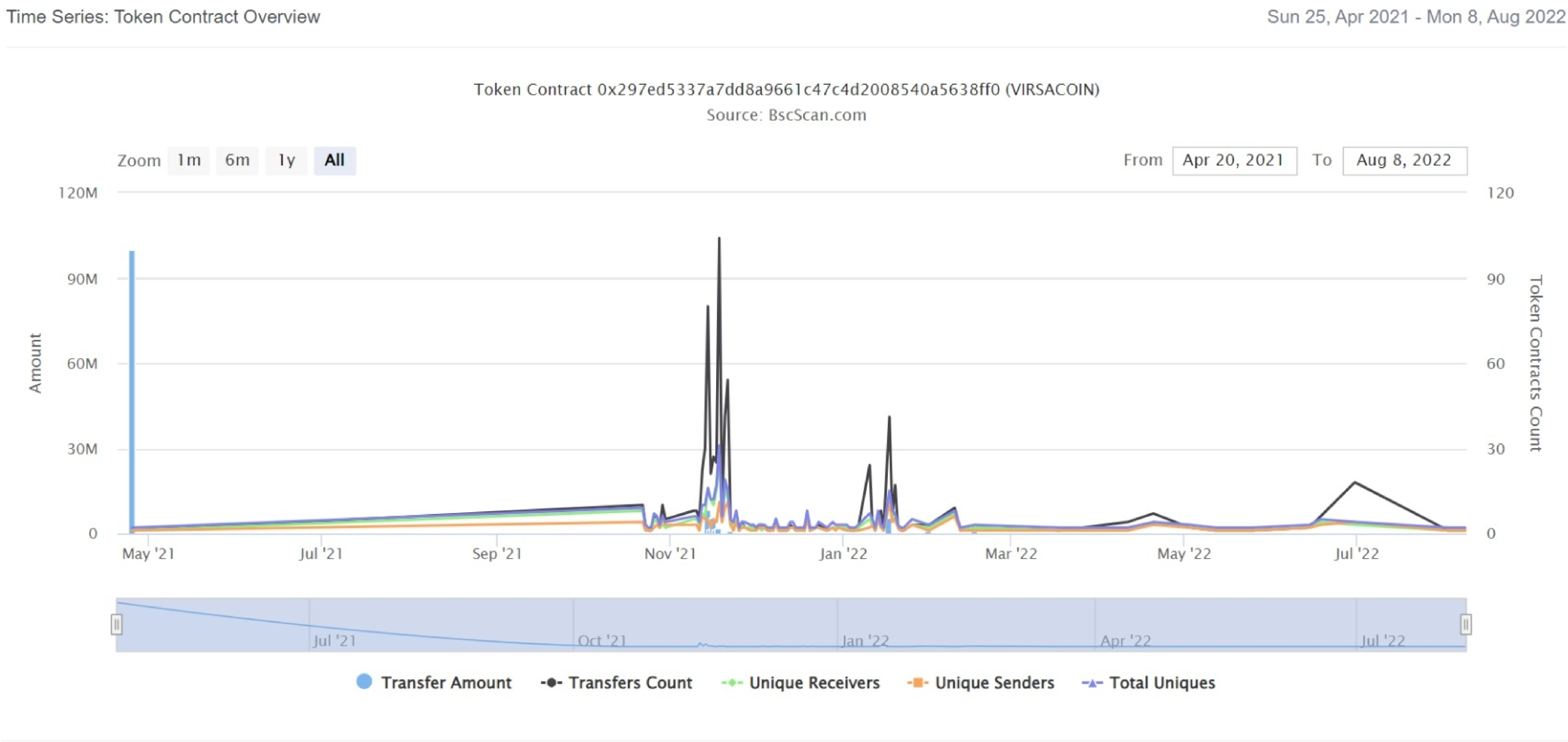
VIRSACOIN Top 20 Token Holders

(A total of 99,999,887.58 tokens held by the top 100 accounts from the total supply of 100,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	Virsacoin: Deployer	94,134,462.974595199611882184	94.1345%
2	0x75987b9edb5463ce1a3a857e11671424600927a4	1,956,848.674105111858462839	1.9568%
3	0x30b82c8a399d7de6f539ff151d8deb2528f702e7	1,174,000	1.1740%
4	0x9a5dc00802f7e036de7e0fcd1e6ec03e88592dfe	568,099.154783902909517534	0.5681%
5	0x6ff1924b0c4385be6bb2bbfa979a847b8cdc17f6	301,400	0.3014%
6	0x1aacc26ec11347c85c8524196c769bac54e45ff0	257,664.992366936695513033	0.2577%
7	0xfb56e7e74c59f41e9d7633cb29fad2c012f514af	126,700	0.1267%
8	0xe384c6124e0da68155563aeafb5adf8d0af00bcf	109,340.635932609138731886	0.1093%
9	0xbc6e528d2a046b4b376d196d51ab158f82ad8bd4	100,000	0.1000%
10	0x4f963fea3ea8a7797a13f81b50fe52fac2dd607b	100,000	0.1000%
11	0x57977ea5100140099127a9c5a75f4905a29b45b9	99,779	0.0998%
12	0x0432ae6b8100c328ff11ad3d8e986a0f3fde1815	80,050	0.0801%
13	0x9dfd56a5d813a6cfa6e4b16afa30129fb1f846a3	70,000	0.0700%
14	0xf049be0bf43c4a433e06f70974e65e7dfe90834b	58,476.35677409127643703	0.0585%
15	0x46d38bd71d0053569672482fa0164ffa2c4c68ac	50,000	0.0500%
16	0xcf216aec58ce8c3b4724d168f4b202328f31541d	50,000	0.0500%
17	0xfd40cf0e143647750684595df470e45d5fb91b73	46,604.590335663965367229	0.0466%
18	0x0b234115936ea27f1b025f530649b46a22773e86	42,968.555532787788746185	0.0430%
19	0xcab780b6de6e135ad9a5546c872d6a368b1f8ac8	41,689.750104149988408548	0.0417%
20	0x261c70af7e6ccf70ac83c69b3dfc2080baf342dd	40,000	0.0400%

VIRSACOIN Token Distribution

VIRSACOIN Contract Overview



Contract functions details

+ [Int] IBEP20

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

+ [Int] Token

- [Ext] transfer
- [Ext] balanceOf

+ [Lib] SafeMath

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

+ [Lib] Roles

- [Int] add
- [Int] remove
- [Int] has

+ MinterRole

- [Int] <constructor>
- [Pub] isMinter
- [Pub] addMinter #
-modifiers: onlyMinter
- [Pub] renounceMinter #
- [Int] _addMinter #
- [Int] _removeMinter #

+BEP20 (IBEP20)

- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] allowance
- [Pub] transfer #
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance

Contract functions details

-[Pub] decreaseAllowance

-[Int] _transfer #

-[Int] _mint #

-[Int] _burn #

-[Int] _approve #

-[Int] _burnFrom #

+ Ownable (Context)

-[Int] <constructor>

-[Pub] owner

-[Pub] transferOwnership #

-modifiers: onlyOwner

+ BEP20Mintable (BEP20, MinterRole)

-[Pub] mint #

-modifiers: onlyOwner

+BEP20Burnable (BEP20, Ownable)

-[Pub] burn #

-[Pub] burnFrom #

-modifiers: onlyOwner

+ BEP20Detailed (IBEP20)

-[Pub] <constructor>

-[Pub] name

-[Pub] symbol

-[Pub] decimals

+ VIRSACOIN (BEP20Detailed,BEP20,Ownable,BEP20Burnable)

-[Pub] <constructor>

(\$) = 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.	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	Low issue

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 issues found.

✔ Low Severity Issues

Two 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 $\geq 0.5.0 < 0.6.0$ the contract should contain the following line:

```
pragma solidity 0.5.16;
```

2. Old compiler version

- **Description**

Contract has been deployed using too old solidity version.

- **Recommendation**

It is advisable to deploy contract using any of the latest version of solidity.

Centralization

Owner privileges:

- VIRSACOIN Contract:
 - Owner can transfer ownership.
 - Owner can burn tokens of address given approve for.

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 but smart contract ownership has been renounced. Following are Admin functions and burner functions:

- Transferownership
- Burnfrom

Conclusion

Smart contract contains 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.