HackSafe

Smart Contract Security Audit Report

SHIFU

March 2023

Security Status

★★★★½

www.hacksafe.io

Audit Details

Audited project
SHIFU

Deployer address
0x84c6d853119a8579d1dc8f4f5d51b40421e5c0de

Client contacts
SHIFU Team

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 SHIFU to perform an audit of smart contracts:

- https://bscscan.com/token/0x68C68ad30C97cC9BCb7564ca6844407FEDA8EE82#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 23.03.2023

Token Type	: DEFI
Contract name	: ShifuToken
Contract address	: 0x68C68ad30C97cC9BCb7564ca6844407FEDA8EE82
Total supply	: 20,487,126
Token ticker	: Shifu
Decimals	: 0
Token holders	: 451
Transactions count	: 780
Compiler version	: v0.8.7+commit.e28d00a7
Contract deployer address	: 0x84c6d853119a8579d1dc8f4f5d51b40421e5c0de
owner address	: 0x84c6d853119a8579d1dc8f4f5d51b40421e5c0de

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

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.

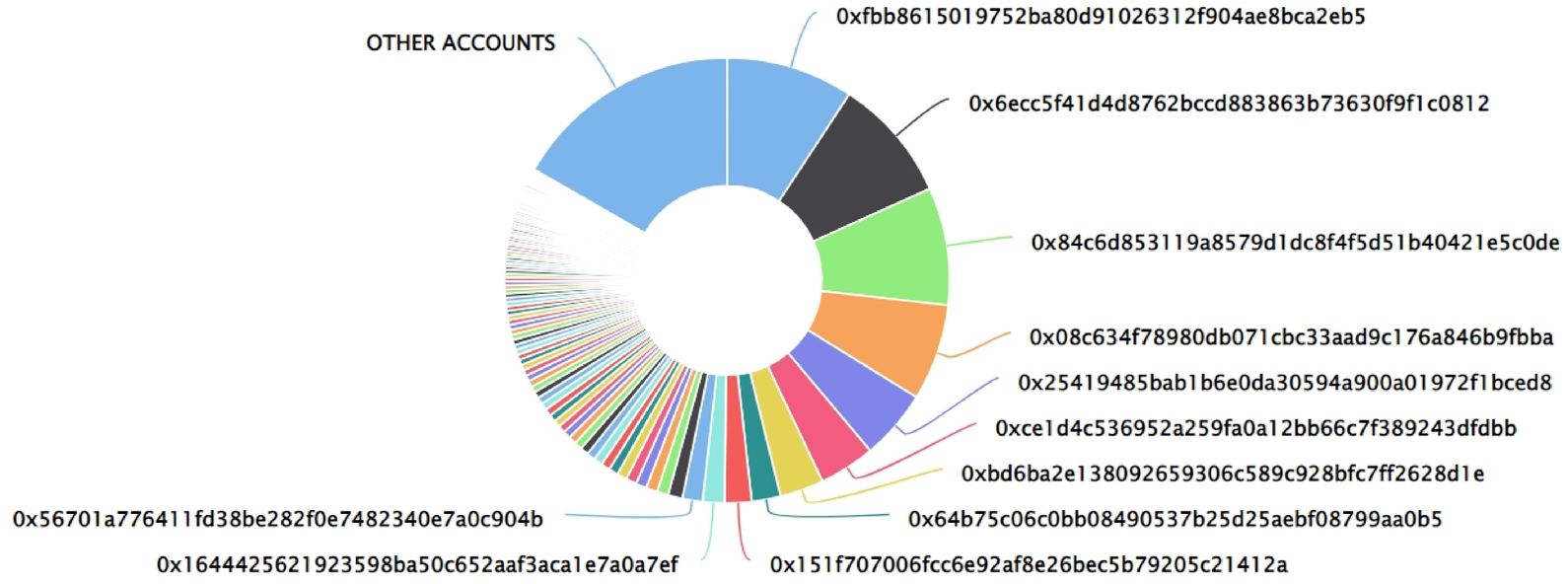
SHIFU TOKEN Distribution

The top 100 holders collectively own 83.29% (17,064,380.00 Tokens) of Shifu

Token Total Supply: 20,487,126.00 Token | Total Token Holders: 451

Shifu Top 100 Token Holders

Source: BscScan.com



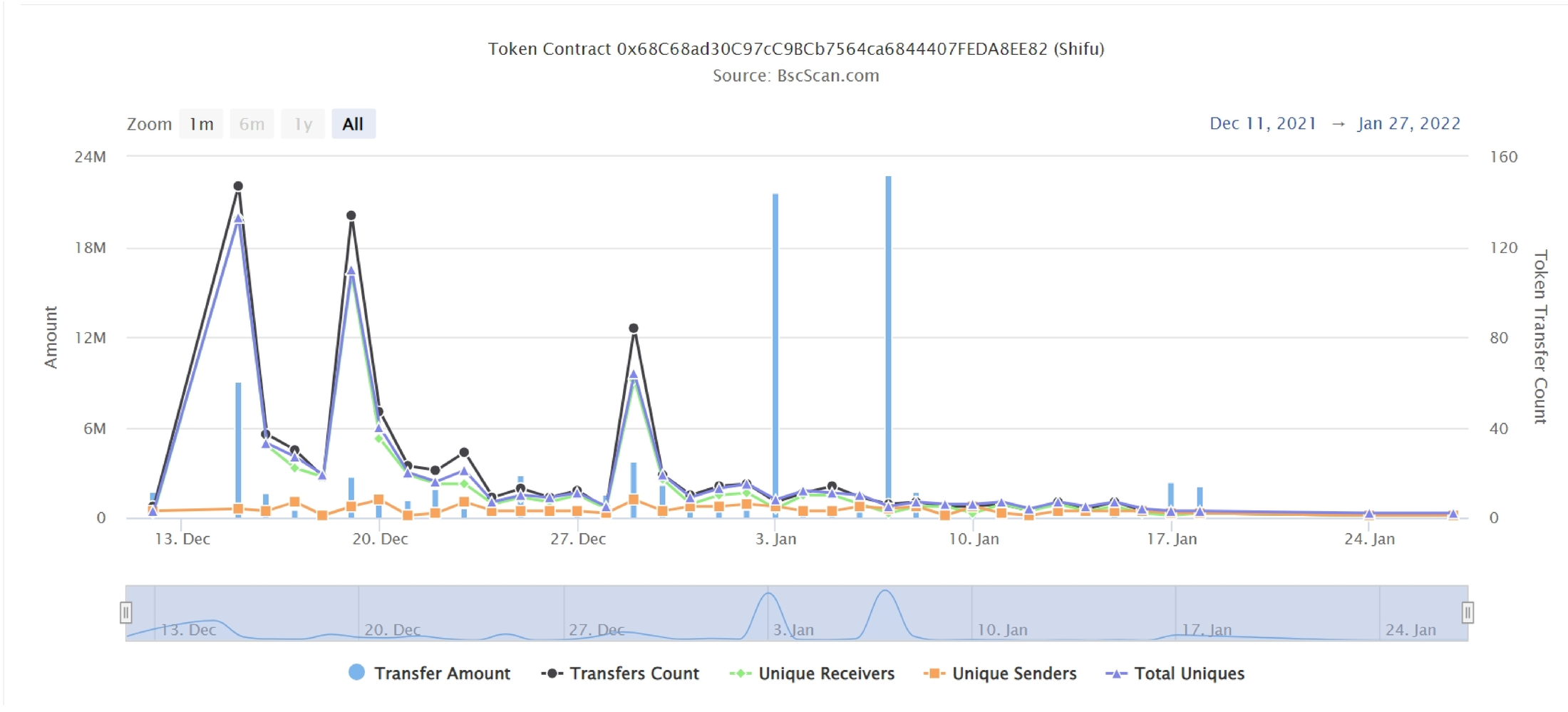
SHIFU Token Top 20 Token Holders

(A total of 17,064,380.00 tokens held by the top 100 accounts from the total supply of 20,487,126.00 token)

Rank	Address	Quantity (Token)	Percentage
1	0xfbb8615019752ba80d91026312f904ae8bca2eb5	1,898,563	9.2671%
2	0x6ecc5f41d4d8762bccd883863b73630f9f1c0812	1,840,393	8.9832%
3	0x84c6d853119a8579d1dc8f4f5d51b40421e5c0de	1,751,820	8.5508%
4	0x08c634f78980db071cbc33aad9c176a846b9fbba	1,432,745	6.9934%
5	0x25419485bab1b6e0da30594a900a01972f1bced8	1,042,961	5.0908%
6	0xce1d4c536952a259fa0a12bb66c7f389243dfdbb	833,698	4.0694%
7	0xbd6ba2e138092659306c589c928bfc7ff2628d1e	651,305	3.1791%
8	0x64b75c06c0bb08490537b25d25aebf08799aa0b5	429,326	2.0956%
9	0x151f707006fcc6e92af8e26bec5b79205c21412a	403,568	1.9699%
10	0x1644425621923598ba50c652aaf3aca1e7a0a7ef	322,134	1.5724%
11	0x56701a776411fd38be282f0e7482340e7a0c904b	300,736	1.4679%
12	0x3a7a55d145fab70e67e961bdf0d8124754d926bb	212,698	1.0382%
13	0xc6ba299e8f6307eb305544d175cc9b05bd4a6e40	172,185	0.8405%
14	0xaa8bba0d5d8c0e075eee5c7f15a9e6298e8937f5	168,132	0.8207%
15	0x6f60dc3561a767f8b59d3d7d4af75abfeedd5df1	160,046	0.7812%
16	0xccb3f10ab13501a34046821e1c7f1800a08351e4	158,013	0.7713%
17	0x476bb5dc08744cb25624360ebe8fae5b1dec5985	148,258	0.7237%
18	0x6e7d0fe9f52c99be84d8a842a3e5b0837e822c1b	137,880	0.6730%
19	0x5d0684c7dc63cacc612757d61a5f193d2d48018c	134,424	0.6561%
20	0x013402b1fce90db93df4c319c935fb3ae9845fa7	133,403	0.6512%

SHIFU TOKEN Distribution

SHIFU Contract Overview



Contract functions details

+ReentrancyGuard
    -[Pub] #

+[Lib] Address
    -[Int] isContract
    -[Int] sendValue #
    -[Int] functionCall #
    -[Int] functionCall #
    -[Int] functionCallWithValue #
    -[Int] functionCallWithValue #
    -[Prv] _functionCallWithValue #

+[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

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

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

Contract functions details

-[Pub] geUnlockTime
-[Pub] lock #
 - modifiers: onlyOwner
-[Pub] unlock #

+ShifuToken (IERC20, Context, Ownable, ReentrancyGuard)
 -[Pub] <Constructor >#
 -[Ext] totalSupply
 -[Pub] balanceOf
 -[Ext] allowance
 -[Pub] name
 -[Pub] symbol
 -[Pub] decimals
 -[Pub] approve #
 -[Ext] transfer #
 -[Ext] transferFrom #
 -[Int] _transferFrom #
 -[Int] purchase #
 -[Pub] sell #
  - modifiers: nonReentrant
 -[Pub] calculatePrice
 -[Int] mint #
 -[Pub] getBNBQuantityInContract
 -[Pub] getValueOfHoldings
 -[Ext] <Fallback >($)
 -[Pub] Emergency #
  - modifiers: onlyOwner

($) = 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:

- transferFrom() function works as general transfer function.

Centralization

Owner Privileges :

- SHIFU Contract:
    - Owner can withdraw BNB balance.
    - Owner can lock and unlock. By the way, using these functions the owner could retake privileges even after the ownership was renounced (only by calling lock function previously).

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 no 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.