



Smart Contract Security Audit Report

TLabs

July 2022

Security Status



www.hacksafe.io



Audit Details



Audited project

TLabs



Deployer address

0x37827c4198293B89A1df81A35dC2bFf5A6fB224D



Client contacts

TLabs team



Blockchain

Binance Smart chain



Website

<https://tlabs.jp/#/home>

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.

DISCLAIMER: By reading this report or any part of it, you agree to the terms of this disclaimer. If you do not agree to the terms, then please immediately cease reading this report, and delete and destroy any and all copies of this report downloaded and/or printed by you. This report is provided for information purposes only and on a non-reliance basis, and does not constitute investment advice. No one shall have any right to rely on the report or its contents, and TechRate and its affiliates (including holding companies, shareholders, subsidiaries, employees, directors, officers and other representatives) (HackSafe) owe no duty of care towards you or any other person, nor does HackSafe make any warranty or representation to any person on the accuracy or completeness of the report. The report is provided "as is", without any conditions, warranties or other terms of any kind except as set out in this disclaimer, and HackSafe hereby excludes all representations, warranties, conditions and other terms (including, without limitation, the warranties implied by law of satisfactory quality, fitness for purpose and the use of reasonable care and skill) which, but for this clause, might have effect in relation to the report. Except and only to the extent that it is prohibited by law, HackSafe hereby excludes all liability and responsibility, and neither you nor any other person shall have any claim against HackSafe, for any amount or kind of loss or damage that may result to you or any other person (including without limitation, any direct, indirect, special, punitive, consequential or pure economic loss or damages, or any loss of income, profits, goodwill, data, contracts, use of money, or business interruption, and whether in delict, tort (including without limitation negligence), contract, breach of statutory duty, misrepresentation (whether innocent or negligent) or otherwise under any claim of any nature whatsoever in any jurisdiction) in any way arising from or connected with this report and the use, inability to use or the results of use of this report, and any reliance on this report.

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 TLabs to perform an audit of smart contracts:

- <https://bscscan.com/address/0x45fffed8d9651fe9ea0321fcc9b15ee5e052a208#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 13.07.2022

Token Type	: BEP20
Contract name	: TLabsToken
Contract address	: 0x45Fffed8d9651fE9EA0321fcC9b15Ee5e052A208
Compiler version	: v0.8.4+commit.c7e474f2
Total supply	: 10,000,000,000
Token Ticker	: TBS
Decimals	: 18
Token Holders	: 416
Transactions count	: 3,376
Contract deployer address	: 0x37827c4198293B89A1df81A35dC2bFf5A6fB224D
Owner address	: No Owner

Social profiles

Coinmarketcap profile : <https://coinmarketcap.com/currencies/tlabs/>

Audit Summary

According to the standard audit assessment, Customer`s solidity smart contracts are “Secure”. This token contract does not contain owner control, which do make it fully decentralized as owner does not have control over smart contract.

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.

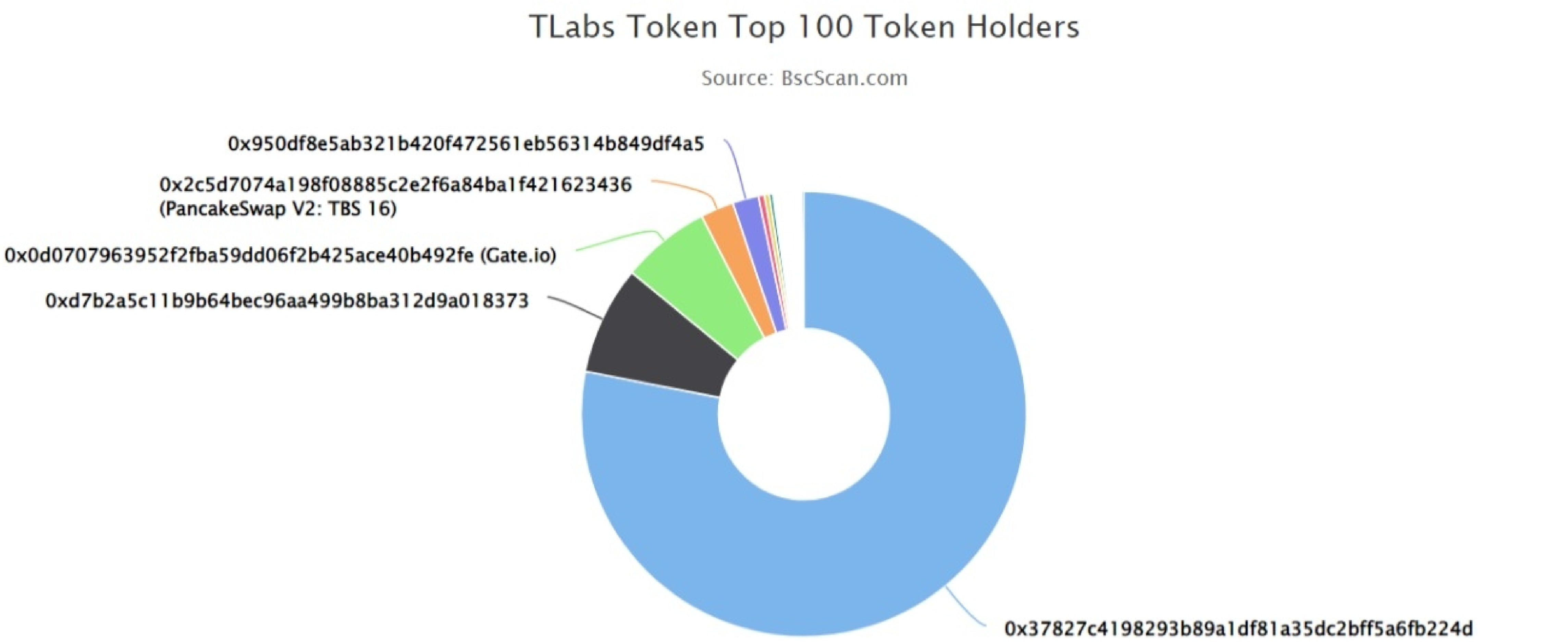
We found 0 critical, 0 high, 1 medium and 1 low and some very low-level issues. These issues are not critical ones.

TLabs Token Distribution

 The top 100 holders collectively own 99.82% (9,981,683,065.42 Tokens) of TLabs Token

 Token Total Supply: 10,000,000,000.00 Token



Total Token Holders: 416



(A total of 9,981,683,065.42 tokens held by the top 100 accounts from the total supply of 10,000,000,000.00 token)

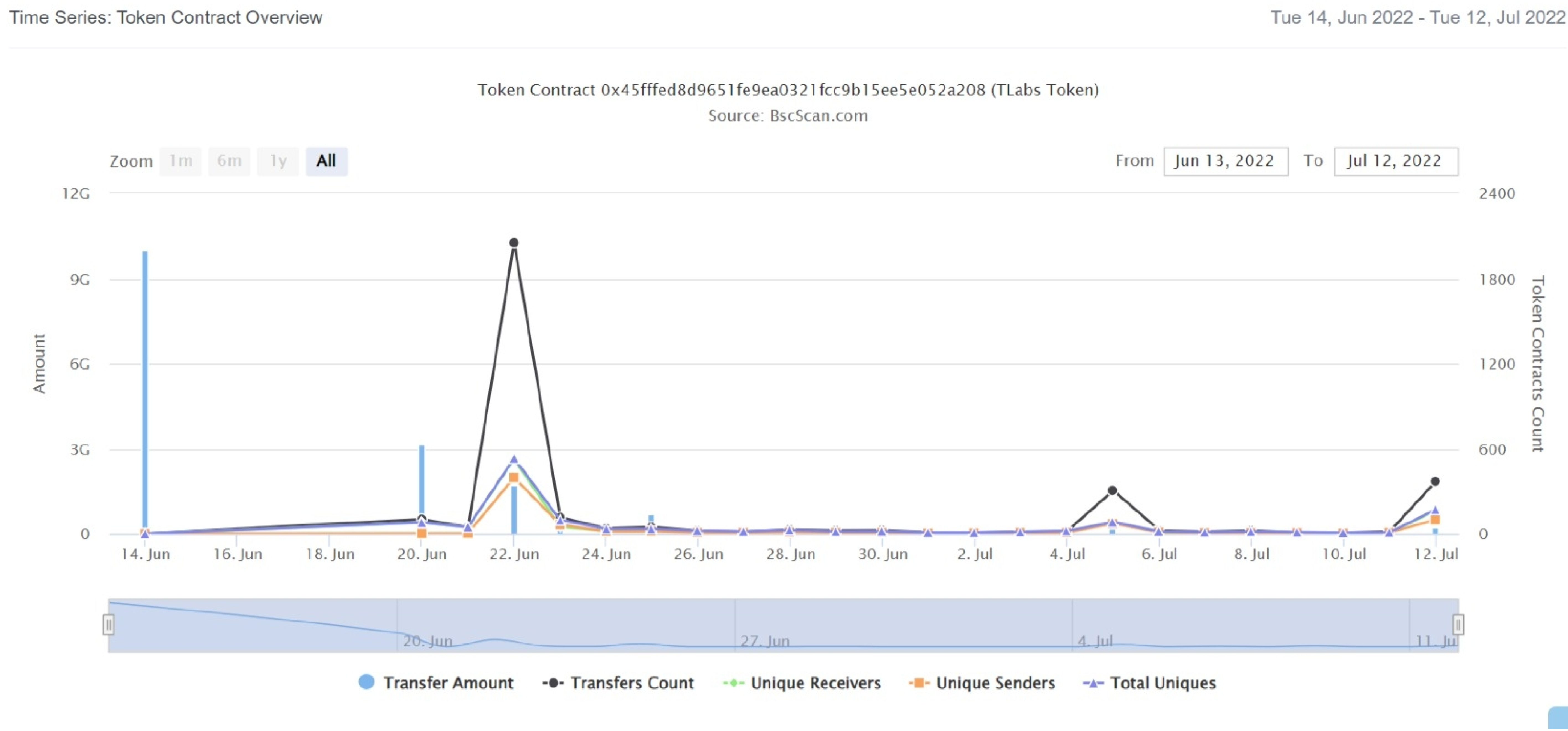
TLabs Top 20 Token Holders

(A total of 9,981,683,065.42 tokens held by the top 100 accounts from the total supply of 10,000,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	0x37827c4198293b89a1df81a35dc2bff5a6fb224d	7,807,740,296.6794865	78.0774%
2	 0xd7b2a5c11b9b64bec96aa499b8ba312d9a018373	787,585,912.65048	7.8759%
3	Gate.io	647,003,845.882	6.4700%
4	PancakeSwap V2: TBS 16	241,823,754.984866558876964807	2.4182%
5	0x950df8e5ab321b420f472561eb56314b849df4a5	189,728,500.6125525	1.8973%
6	0x81425f6f46daa3e28f2ec58a1424e2962e62c4a5	41,454,445.503416	0.4145%
7	0x4066b834d0185ba5fc6c1e15112dbbf199e75a67	36,310,067.903080444033815686	0.3631%
8	 0x2bf34cb38cf53b4dd35e1115fd8b679f285b5025	26,300,000	0.2630%
9	0x2c4d3a52efc9d11f5e346353c849da42cda3906c	15,000,000	0.1500%
10	0xdc8016bdea7763af1c79f7c91f2401e2f8272d13	11,577,000	0.1158%
11	0xe246000b5eae14d9a87685bd3b5279ea9864f883	10,208,481.39794	0.1021%
12	0x53e58062521ac3414698a5f0f89ae7ac85d6aa82	9,631,023.42248	0.0963%
13	0xec87fbd968ed0305ae9759e6f9310137985e56d3	9,510,259.24907	0.0951%
14	0xea6b0f8619d6b5a2e3df80c18edc3d8f0b128061	9,482,046.207765776741514351	0.0948%
15	0x765ca02ff704815b1bfe39abac0a2700c38bc8d4	7,204,837.57829	0.0720%
16	0x447beccf6eda4fc47cf21584cf7d4c4e08f9a65f	6,841,849.82846	0.0684%
17	0x1457e16624d23c45ddd81d9056850e634099573b	6,676,039.526768932874379978	0.0668%
18	0x4eb38bc24370c4f796bfa7c68c1781f20b683b3b	4,648,265	0.0465%
19	0x2f606c394f354e917612488d750c2b6886e6fe58	4,051,208.41112	0.0405%
20	0x3eb1fc4f28f98610ddd9d2c1b9465848e545395a	3,922,135.22389	0.0392%

TLabs Token Distribution

TLabs Contract Overview



Contract functions details

TLabsToken.sol

+ TLabsToken (ERC20)

-< constructor >

ERC20.sol

+ ERC20 (Context, IERC20, IERC20Metadata)

-< constructor >

-[Pub] name

-[Pub] symbol

-[Pub] decimals

-[Pub] totalSupply

-[Pub] balanceOf

-[Pub] transfer #

-[Pub] allowance

-[Pub] approve #

-[Pub] transferFrom #

-[Pub] increaseAllowance

-[Pub] decreaseAllowance

-[Int] _transfer #

-[Int] _mint #

-[Int] _burn #

-[Int] _approve #

-[Int] _spendAllowance #

-[Int] _beforeTokenTransfer #

-[Int] _afterTokenTransfer #

IERC20.sol

+ [Int] IERC20

-[Ext] totalSupply

-[Ext] balanceOf

-[Ext] transfer

-[Ext] allowance

-[Ext] approve

-[Ext] transferFrom

IERC20Metadata .sol

+ [Int] IERC20Metadata (IERC20)

-[Ext] name

-[Ext] symbol

-[Ext] decimals

Contract functions details

Context.sol

+ Context

-[Int] _msgSender

-[Int] _msgData

(\$)= 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.	Medium issue
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 issues found.

1. Design logic

- **Description**

The TLabsToken.sol file contains direct import of openzeppelin ERC20 smart contract, any changes in their repository can create trouble for this token smart contract as main smart contract file is inherited from that.

- **Recommendation**

It advisable to not direct import any file from github repository, contract have already declared the ERC20 contract and their interfaces, so contract do not need to import the openzeppelin ERC20 contract.

✔ 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 ^0.8.3 the contract should contain the following line:

```
pragma solidity 0.8.4;
```

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.