HackSafe

Smart Contract Security Audit Report

Bulleon

August 2022

Security Status

★★★★☆

www.hacksafe.io

Audit Details

Audited project
Bulleon

Deployer address
0xe170254e7e35181a142347244F053D12dbcf1fCa

Client contacts
Bulleon Team

Blockchain
Ethereum

Website
https://bulleon.io/

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 Bulleon to perform an audit of smart contracts:

- https://etherscan.io/address/0x0775c81a273b355e6a5b76e240bf708701f00279#code

The purpose of the audit was to achieve the

- Ensutre 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 29.08.2022

Token Type	: ERC20
Contract name	: BulleonToken
Contract address	: 0x0775C81A273B355e6a5b76e240BF708701F00279
Compiler version	: v0.4.24+commit.e67f0147
Total supply	: 1,160,000
Token Ticker	: BUL
Decimals	: 18
Token Holders	: 31,279
Transactions count	: 37,046
Contract deployer address	: 0xe170254e7e35181a142347244F053D12dbcf1fCa
Owner address	: 0xad74bd38911fe4c19c95d14b5733372c3978c2d9

Social profiles

Twitter profile	: https://twitter.com/Bulleon_net
Coinmarketcap Profile	: https://coinmarketcap.com/currencies/bulleon/

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

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 2 low and some very low-level issues. These issues are not critical ones.

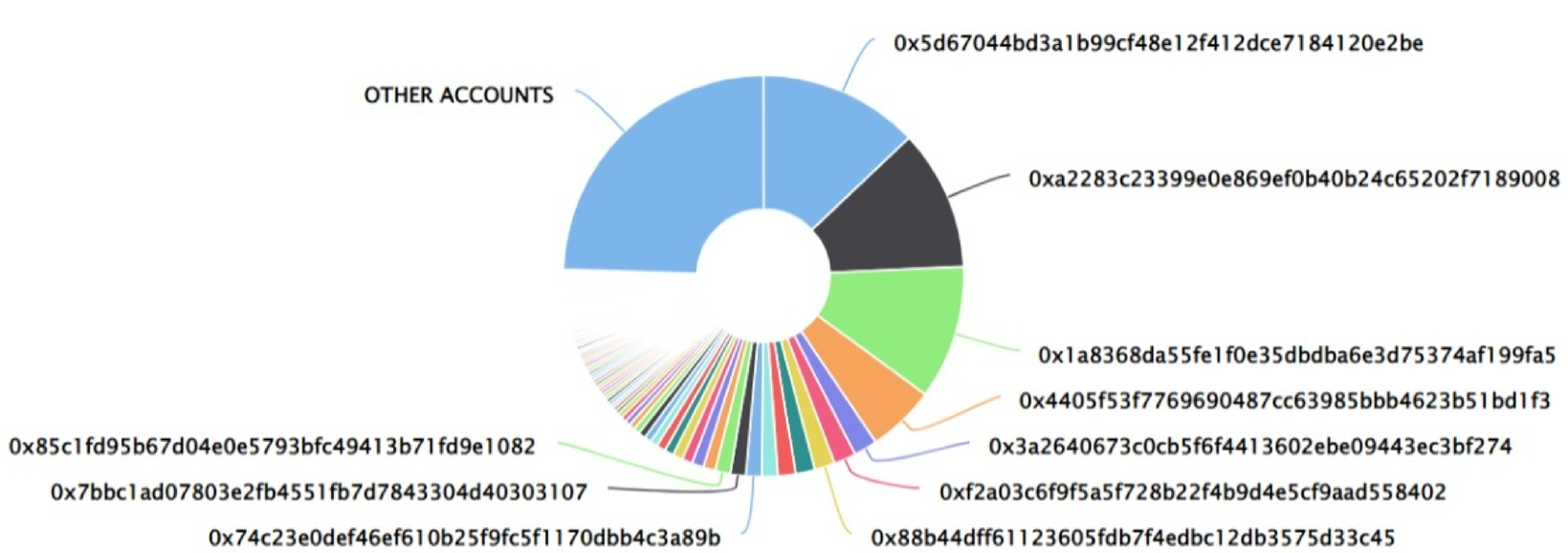
Bulleon Token Distribution

The top 100 holders collectively own 75.53% (876,200.53 Tokens) of Bulleon

Token Total Supply: 1,160,000.00 Token | Total Token Holders: 31,279

Bulleon Top 100 Token Holders

Source: Etherscan.io



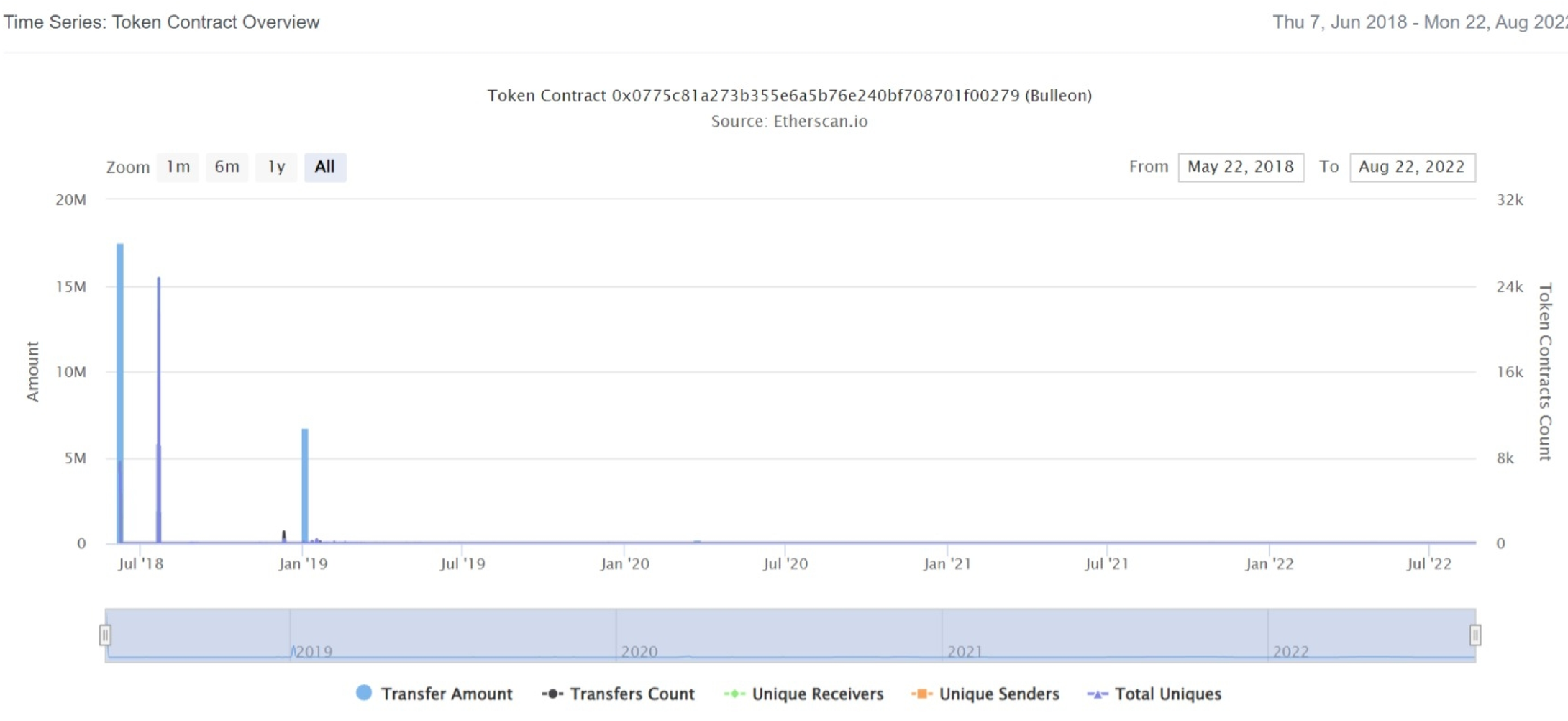
Bulleon Top 20 Token Holders

(A total of 876,200.53 tokens held by the top 100 accounts from the total supply of 1,160,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	0x5d67044bd3a1b99cf48e12f412dce7184120e2be	150,000	12.9310%
2	0xa2283c23399e0e869ef0b40b24c65202f7189008	131,512.09261884475566625	11.3372%
3	0x1a8368da55fe1f0e35dbdba6e3d75374af199fa5	125,306.161184908335485616	10.8023%
4	0x4405f53f7769690487cc63985bbb4623b51bd1f3	63,647.329239507526667331	5.4868%
5	0x3a2640673c0cb5f6f4413602ebe09443ec3bf274	22,004.14	1.8969%
6	0xf2a03c6f9f5a5f728b22f4b9d4e5cf9aad558402	20,675.76721479	1.7824%
7	0x88b44dff61123605fdb7f4edbc12db3575d33c45	19,048.68	1.6421%
8	0x97e12bd75bdee72d4975d6df410d2d145b3d8457	18,085.96416156758845565	1.5591%
9	0x0a72ebae0321b78bf42b5846c57f90d714a5cb31	16,602.395775126708721157	1.4312%
10	0xf63539a08f38ecf67da43980e3f0d2813dff187e	15,042	1.2967%
11	0x74c23e0def46ef610b25f9fc5f1170dbb4c3a89b	14,816.30234305	1.2773%
12	0x7bbc1ad07803e2fb4551fb7d7843304d40303107	14,288.662996928214029565	1.2318%
13	0x85c1fd95b67d04e0e5793bfc49413b71fd9e1082	14,200	1.2241%
14	0x5bfdc8a40df8dc2c22b6ad981f2b614ba0306621	11,557.83630798	0.9964%
15	0x6d6a1b2413f28624124dc2adab7f4159463cb9df	10,800	0.9310%
16	0x3b4a7597536f11d68171e4e25b7c9f1d59813103	9,766	0.8419%
17	0xa380d05ddd16f2a8fb67cac535fe0b2e400f0133	9,497.606507262467989061	0.8188%
18	0xd24cf4092c8bea5c73dc3221f54ef2c9c2c58a10	8,525	0.7349%
19	0x28bcd2fe223b3faca7edf78b22c2538644795f47	8,381.33569609	0.7225%
20	0x487b43f4c73b926a6660f5e825c25e408e4b5f4d	6,926.67478891	0.5971%

Bulleon Token Distribution

Bulleon Contract Overview



Contract functions details

+ ERC20Basic
    -[Pub] totalSupply
    -[Pub] balanceOf
    -[Pub] transfer #

+ERC20 (ERC20Basic)
    -[Pub] allowance
    -[Pub] transferFrom #
    -[Pub] approve #

+[Lib] SafeERC20
    -[Int] safeTransfer
    -[Int] safeTransferFrom
    -[Int] safeApprove

+ Ownable
    -[Pub] <constructor>
    -[Pub] transferOwnership #
        -modifiers: onlyOwner

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

+ BasicToken (ERC20Basic)
    -[Pub] totalSupply
    -[Pub] transfer #
    -[Pub] balanceOf

+ BurnableToken (BasicToken)
    -[Pub] burn #
    -[Int] _burn #

+ StandardToken (ERC20, BasicToken)
    -[Pub] transferFrom #
    -[Pub] approve #
    -[Pub] allowance
    -[Pub] increaseApproval #
    -[Pub] decreaseApproval #

Contract functions details

+ StandardBurnableToken (BurnableToken, StandardToken)
  -[Pub] burnFrom #

+ Pausable (Ownable)
  -[Pub] pause #
    -modifiers: onlyOwner whenNotPaused
  -[Pub] unpause #
    -modifiers: onlyOwner whenPaused

+ PausableToken (StandardToken, Pausable)
  -[Pub] transfer #
    -modifiers: whenNotPaused
  -[Pub] transferFrom #
    -modifiers: whenNotPaused
  -[Pub] approve #
    -modifiers: whenNotPaused
  -[Pub] increaseApproval #
    -modifiers: whenNotPaused
  -[Pub] decreaseApproval #
    -modifiers: whenNotPaused

+Claimable (Ownable)
  -[Pub] transferOwnership #
    -modifiers: onlyOwner
  -[Pub] claimOwnership #
    -modifiers: onlyPendingOwner

+ CanReclaimToken (Ownable)
  -[Ext] reclaimToken #
    -modifiers: onlyOwner

+[Int] CrowdsaleContract
  -[Pub] isActive

+BulleonToken (StandardBurnableToken, PausableToken, Claimable)
  -[Pub] <constructor>
  -[Pub] setCrowdsaleAddress #
    -modifiers: onlyOwner
  -[Pub] pause #
    -modifiers: onlyOwner whenNotPaused
  -[Pub] unpause #
    -modifiers: whenPaused
  -[Pub] addToWhitelist #
    -modifiers: onlyOwner

Contract functions details

-[Pub] delWhitelist #
-modifiers: onlyOwner

($) = 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. 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.

2. 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 0.4.21 the contract should contain the following line:

  pragma solidity 0.4.21;

Centralization

Owner privileges:

- Bulleon Contract:
    - Owner can transfer ownership.
    - Owner can pause and unpause functions of contract.
    - Owner can reclaim token.
    - Owner can set crowd sale address.
    - Owner can add and remove white list addresses.

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 functions:

- Transferownership
- Pause
- Unpause
- Reclaimtoken
- Setcrowdsaleaddress
- Addtowhitelist
- Delwhitelist

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.