HackSafe

Smart Contract Security Audit Report

HASH

November 2022

Security Status

★★★★½

www.hacksafe.io

Audit Details

Audited project
HASH

Deployer address
0x0ebc9a03cf0d783b972f6a202d817709c570961d

Client contacts
Hash team

Blockchain
Binance smart chain

Website
https://rocket.hashbon.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 hash token to perform an audit of smart contract:

- https://bscscan.com/address/0xeb1112ac78d537853150e2a07e8b765e29d3f019#code

The purpose of the audit was to achieve the following:

- 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 04.11.2022

Token Type	: BEP20
Contract name	: HashToken
Contract address	: 0xEB1112Ac78D537853150E2a07E8b765E29d3F019
Total supply	: 745,000,000
Token ticker	: HASH
Decimals	: 18
Token holders	: 9,354
Top 100 token holder's dominance	: 99.91%
Transactions count	: 34,017
Compiler version	: v0.7.6+commit.7338295f
Contract deployer address	: 0x0ebc9a03cf0d783b972f6a202d817709c570961d
Gov owner	: 0x53536dc7df1ef9a4e20dff7c070c109ee353e9f9

Social profiles

Twitter profile	: https://twitter.com/hashbon
Coinmarketcap profile	: https://coinmarketcap.com/currencies/hash-token/
Coingecko profile	: https://www.coingecko.com/en/coins/hash-token/
Facebook profile	: https://www.facebook.com/hashbon/
Github profile	: https://github.com/hashbon
Telegram profile	: https://t.me/hashbon_chat

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 

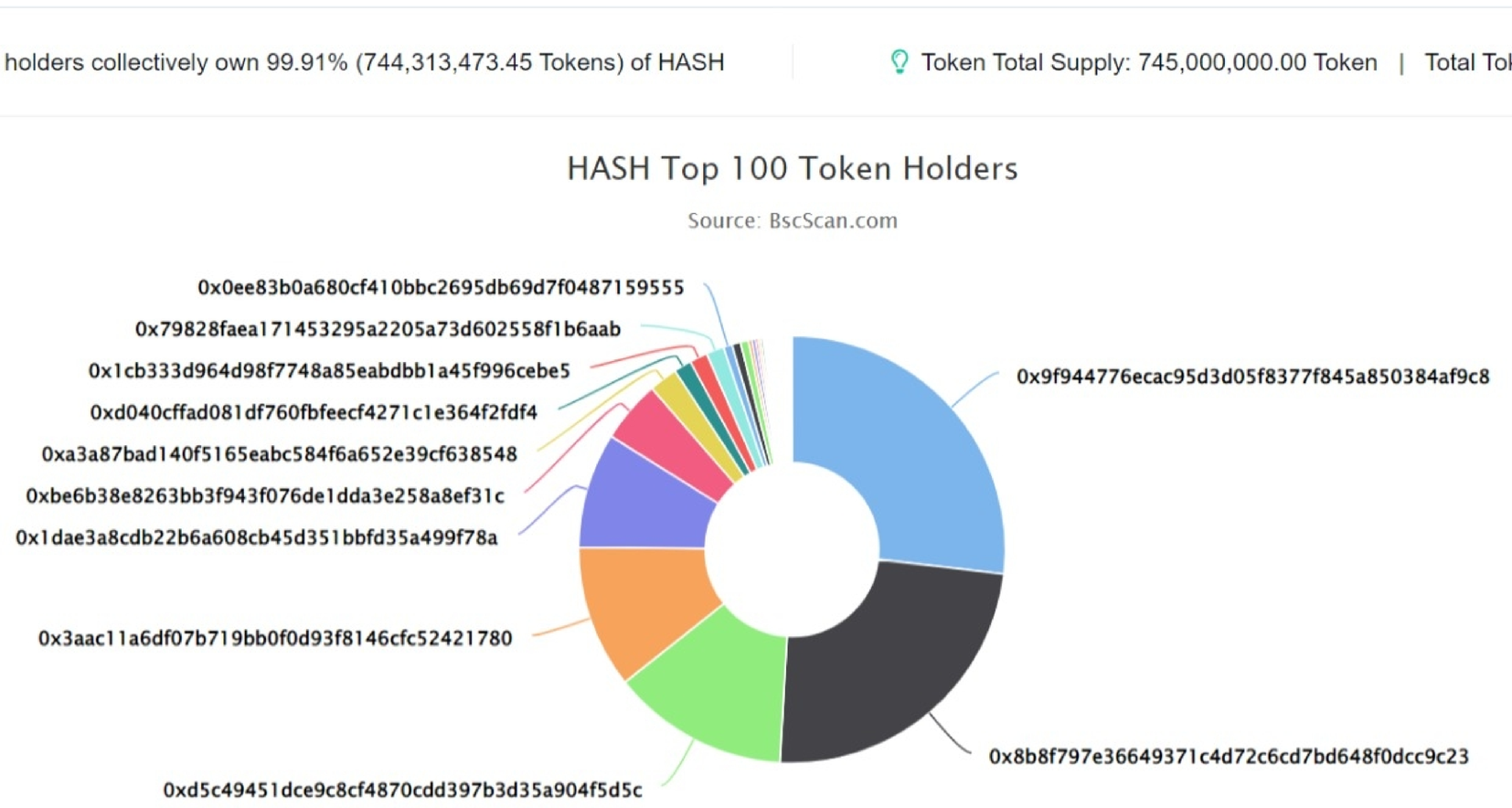
We used various tools like Slither, Mythril and Remix IDE. At the same time this finding is based on critical analysis of the manual audit. All issues found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the issues checking status.

We found 0 critical, 0 high, 0 medium and 2 low and some very low-level issues. These issues are not critical ones.

HASH Token Distribution

The top 100 holders collectively own 99.91% (744,313,473.45 Tokens) of HASH

Token Total Supply: 745,000,000.00 Token | Total Token Holders: 9,354



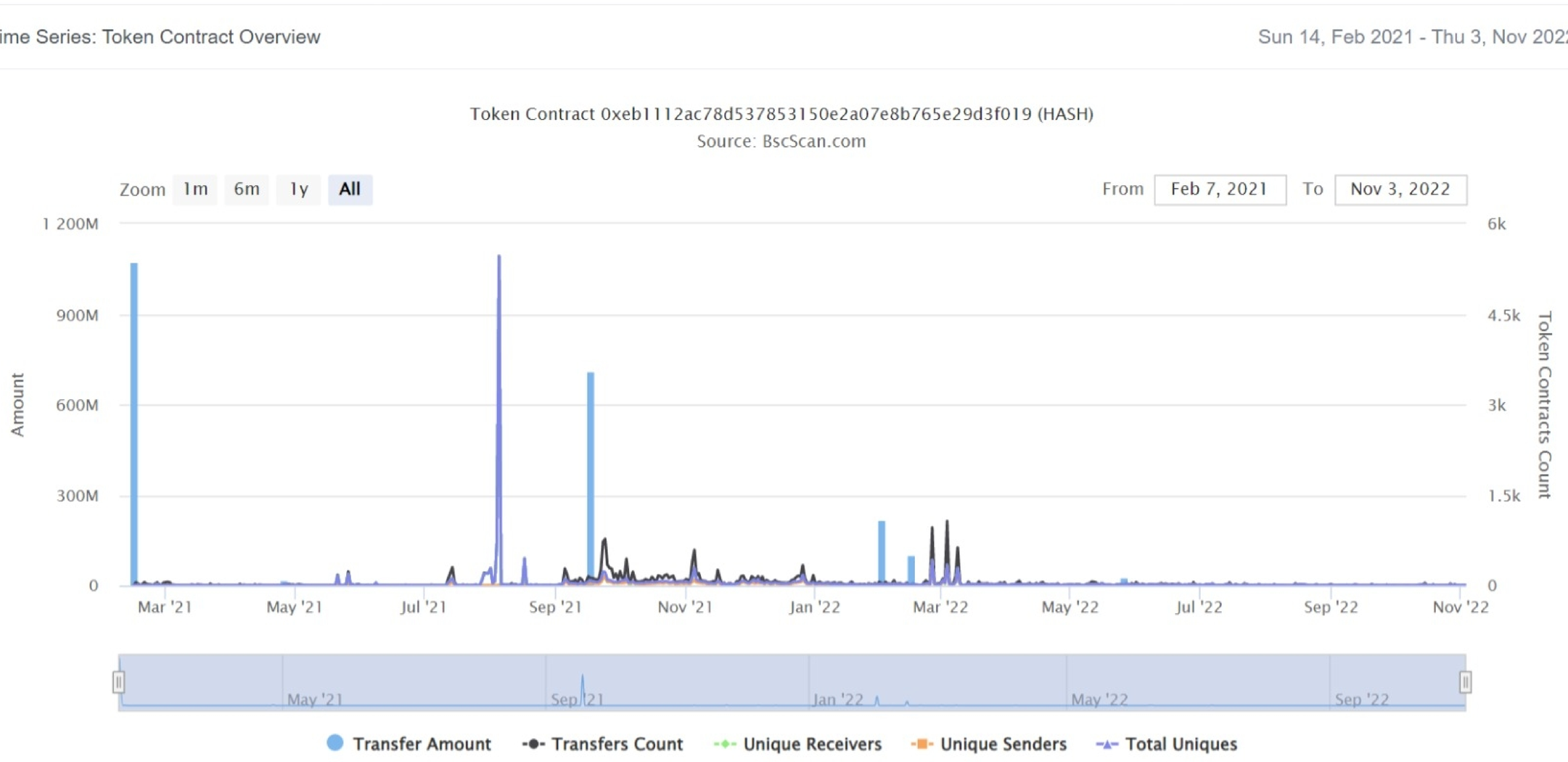
HASH Token Top 20 Token Holders

(A total of 744,313,473.45 tokens held by the top 100 accounts from the total supply of 745,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	0x9f944776ecac95d3d05f8377f845a850384af9c8	200,000,000	26.8456%
2	0x8b8f797e36649371c4d72c6cd7bd648f0dcc9c23	179,275,000	24.0638%
3	0xd5c49451dce9c8cf4870cdd397b3d35a904f5d5c	100,000,000	13.4228%
4	0x3aac11a6df07b719bb0f0d93f8146cfc52421780	81,000,000	10.8725%
5	0x1dae3a8cdb22b6a608cb45d351bbfd35a499f78a	64,700,000	8.6846%
6	0xbe6b38e8263bb3f943f076de1dda3e258a8ef31c	35,102,992.764755815208180852	4.7118%
7	0xa3a87bad140f5165eabc584f6a652e39cf638548	16,099,659.932796489716165556	2.1610%
8	0xd040cffad081df760fbfeecf4271c1e364f2fdf4	10,002,118.636610001224401413	1.3426%
9	0x1cb333d964d98f7748a85eabdbb1a45f996cebe5	10,001,718.556614389792458987	1.3425%
10	0x79828faea171453295a2205a73d602558f1b6aab	10,001,518.608611573240363599	1.3425%
11	0x0ee83b0a680cf410bbc2695db69d7f0487159555	5,000,000	0.6711%
12	0xb4bce8183e563a9b27b28e5ba24a518b94bdda8b	4,817,573.800539010536691637	0.6467%
13	0xc50a1834a5a1aef4c95ed1999bdee32a5348c526	4,514,870.921505430888375038	0.6060%
14	0x0822a38f4b0a359cccb097141b8e1ff595139f0a	2,050,739.767169462186394853	0.2753%
15	0x56fbf5a4d75ae41897f1f5fc2bdb8d2595fa94ff	2,000,000	0.2685%
16	0x0862ed7f6b2bc350508b29542511249b7e11a0a0	1,518,657.692779655541084237	0.2038%
17	0x6b74dd1eb6623702991fb39012d555fcccbb74a6	1,397,492.399999999974572032	0.1876%
18	PancakeSwap V2: BUSD-HASH	1,324,424.220469033448439306	0.1778%
19	0x6e7e0fee40864838331707dc400f4de5104e25e3	1,125,000	0.1510%
20	0xf69b29c462f559f0a861c0a30653fbac298aa96f	963,154.626000000000705427	0.1293%

HASH Token Distribution

HASH Token Contract Overview



Contract functions details

HashToken.sol

+ HashToken (ERC20Burnable, Ownable)
    - -[Pub] < constructor>
    - -[Pub] mintTokens #
        - -modifiers: onlyOwner
    - -[Pub] issueTokens #
        - -modifiers: issueTokens

Context.sol

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

ERC20.sol

+ ERC20 (Context, IERC20)
    - -[Pub] < 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] _setupDecimals #
    - -[Int] _beforeTokenTransfer

ERC20Burnable.sol

+ ERC20Burnable (Context, ERC20)
    - -[Pub] burn #
    - -[Pub] burnFrom #

Contract functions details

IERC20.sol
-[Int] IERC20
    -[Ext] totalSupply
    -[Ext] balanceOf
    -[Ext] transfer
    -[Ext] allowance
    -[Ext] approve
    -[Ext] transferFrom

Ownable.sol
-[Int] IERC20
    -[Int] < constructor>
    -[Pub] owner
    -[Pub] renounceOwnership #
      -modifiers: onlyOwner
    -[Pub] transferOwnership #
      -modifiers: onlyOwner

SafeMath.sol
+[Lib] SafeMath
    -[Int] add
    -[Int] sub
    -[Int] sub
    -[Int] mul
    -[Int] div
    -[Int] div
    -[Int] mod
    -[Int] mod

($) = 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 issues found.
- **Medium Severity Issues**
  No medium severity issues found.
- **Low Severity Issues**
  Two low severity issues.

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 >=0.6.0 <0.8.0 the contract should contain the following line:
  pragma solidity 0.7.6;

Centralization

Owner Privileges:

- HASH Contract:
- Owner can mint tokens.
- Owner can issue new tokens.
- Owner can transfer and renounce tokens.

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:

- Minttokens
- Issuetokens
- Renounceownership
- Transferownership

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.