HackSafe

Smart Contract Security Audit Report

StarCoin

May 2022

Security Status

★ ★ ★ ★ ★

www.hacksafe.io

Audit Details

Audited project
StarCoin

Deployer address
TVq5FAiqLqjYtoADBwiLbvi3EYmHXT2CTf

Client contacts
StarCoin team

Blockchain
Tron chain

Website
not provided by team

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 StarCoin to perform an audit of smart contract:

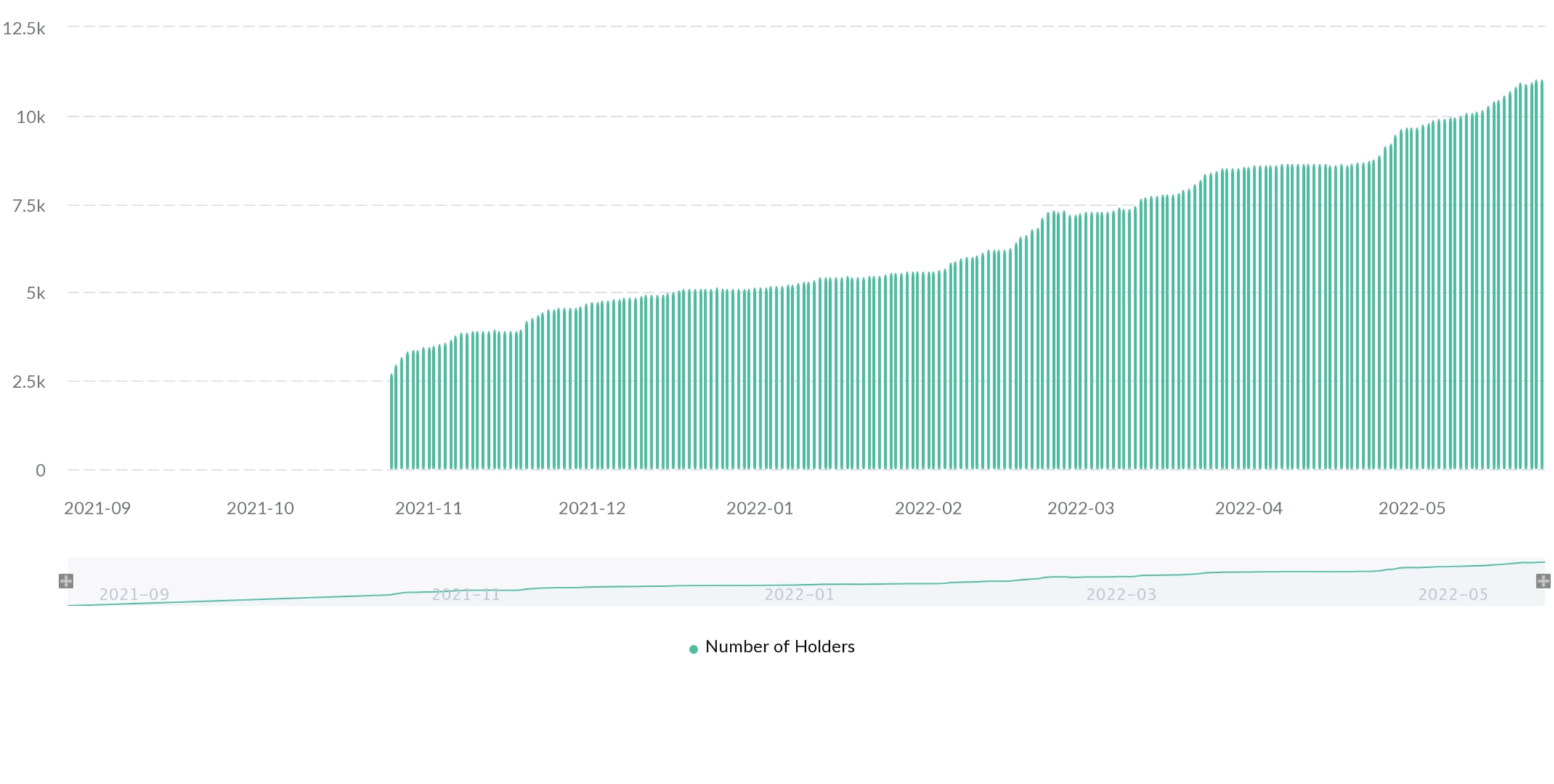
- https://tronscan.org/#/token20/TA74PoX3vgpZfghFJDB3sog7mfYRkjWQwW/code

Contract Details

Token contract details for 25.05.2022

Contract name	: Token
Contract address	: TA74PoX3vgpZfghFJDB3sog7mfYRkjWQwW
Compiler version	: solidity 0.5.10
Total supply	: 6,400,000
Circulation supply	: 6,400,000
Token Ticker	: STAR
Decimals	: 18
Token Holders	: 11,069
Transactions count	: 259,797
Contract deployer address	: TVq5FAiqLqjYtoADBwiLbvi3EYmHXT2CTf
owner address	: No Owner

StarCoin Token Distribution



StarCoin Token Distribution

StarCoin Top 20 Token Holders

Holders' Address

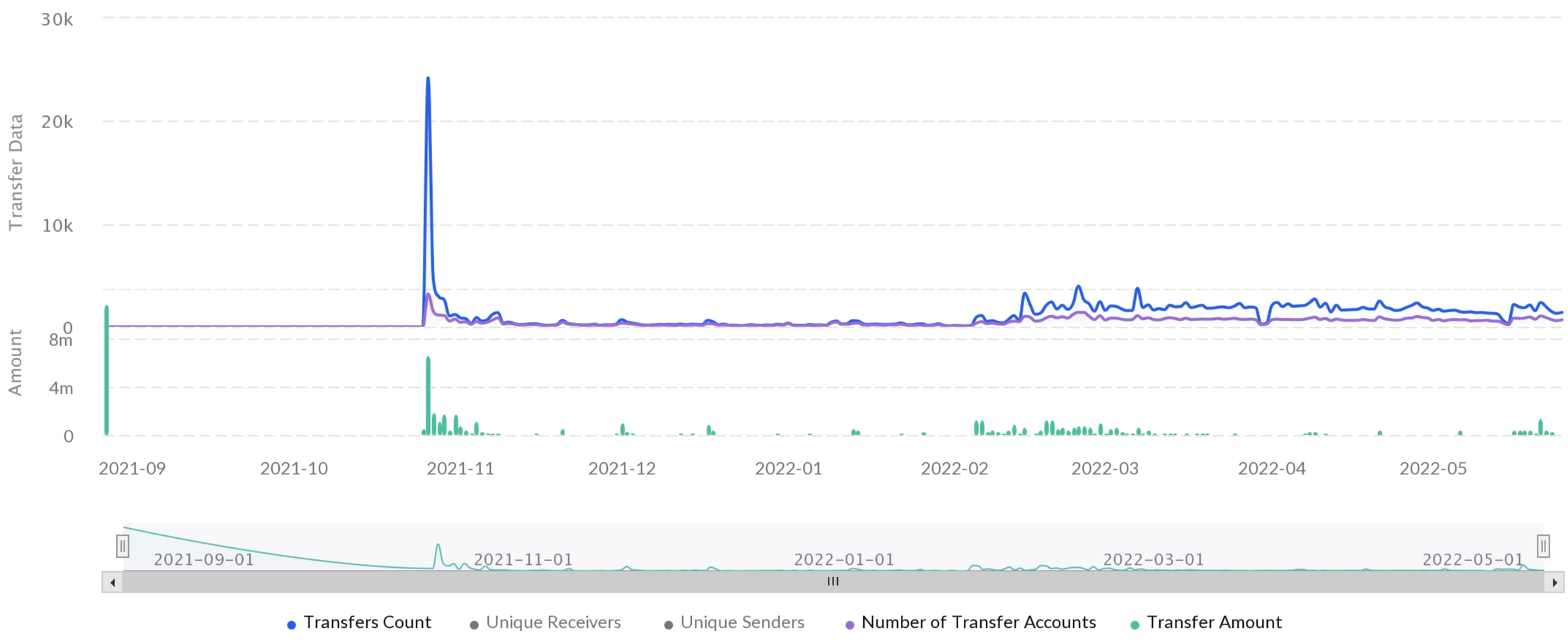
The latest 10,000 records of a total of 11,062 addresses are shown here.

Search Address

Rank	Address		Amount	Value	Percentage
1	SC TGDRfKeE3xfbYDZvg7XH36NWh...wfq5s		1,366,718.634075563128522598	$3,778,949.33	21.354979%
2	T9yD14Nj9j7xAB4dbGeiX9h8unkKLxmGkn	Black hole: Address(1) ...	792,922.984165945722981825	$2,192,415.99	12.389422%
3	TVdKfu1eNdnfcoPYcVCf826xQxumDdP6pE		438,932.315067637749590044	$1,213,638.96	6.858317%
4	TBCyYLkQPQuMdV1Cywy7bJzaMVsRUoc1LD		320,000.000000000000000000	$884,793.52	5%
5	TXzGwvtNyLMZ5qD1rc57Kr5KNqyYDMuLcB		302,050.000000000000000000	$835,162.13	4.719531%
6	TD5TAWh6kZ2MTs5MPWCVWHNMY... rS4sd		281,295.595136445911255284	$777,776.62	4.395244%
7	SC TFghbAu8Rk21z1fZyXkQsm1pJ1...47TVR		207,661.855228219824186851	$574,180.82	3.244716%
8	TT5o1jQaiHsmfPrhLSKFwnVC9B2r4fKqjr		131,499.000000000000000000	$363,592.07	2.054672%
9	TCipiASL2oad3RRCAQLJH3gX1p8VfyJNN2		32,443.000000000000000000	$89,704.24	0.506922%
10	TUVjDfN3aL82wfcpypfP1AAecKMa76Wj16		25,000.000000000000000000	$69,124.49	0.390625%
11	TP7AxG7aKoVHEcAa1LVGRkSa3KDkaovAM2		21,468.620284692992094816	$59,360.3	0.335447%
12	TFhyrmwX8zQ1FWgFxgy4Dkg5CwBx1Vdzkt		19,426.301148126216915109	$53,713.33	0.303536%
13	THBq7fw4V5ekmJ6KzvzA59mi6XJCk4WxgR		18,000.000000000000000000	$49,769.64	0.28125%
14	TRm3fkks24X1ryVTwT9o4QZEXaqjfs9SZi		17,000.000000000000000000	$47,004.66	0.265625%
15	SC TA74PoX3vgpZfghFJDB3sog7... jWQwW		16,646.763529043119059229	$46,027.96	0.260106%
16	TPXtrtd5ni7UbbYHzQPoj2BepUbqJd7ivh		15,621.874733000800060199	$43,194.17	0.244092%
17	TCUoyxtVvQUA8CvbS83NkQ2PvMVMt68Q6q		15,002.848151510000000000	$41,482.57	0.23442%
18	TWQVFxrDeK1Jz8Zp9C5mNin5i3yL5mi6KU		15,000.000000000000000000	$41,474.7	0.234375%
19	TPUm9ZkVJNX8VRY131coDpWRdyUreCcYxv		15,000.000000000000000000	$41,474.7	0.234375%
20	TMPZu99qgHTyvoFry6AmHdqkzzVyeSTkDD		14,103.297689431246790179	$38,995.33	0.220364%

StarCoin Token Distribution

StarCoin Token Transfer Data



Contract functions details

ERC20.sol
+ ERC20(IERC20)

-[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] _burnFrom #

ERC20Detailed.sol
+ ERC20Detailed (IERC20)

-[Pub] <constructor> #
- [Pub] name
- [Pub] symbol
-[Pub] decimals

IERC20.sol
+ IERC20

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

SafeMath.sol
+ SafeMath

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

Contract functions details

Token.sol
+ Token (ERC20, ERC20Detailed)
    -[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

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**
  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 ^0.5.0 the contract should contain the following line:

  pragma solidity 0.5.0;

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.