



Smart Contract Security Audit Report

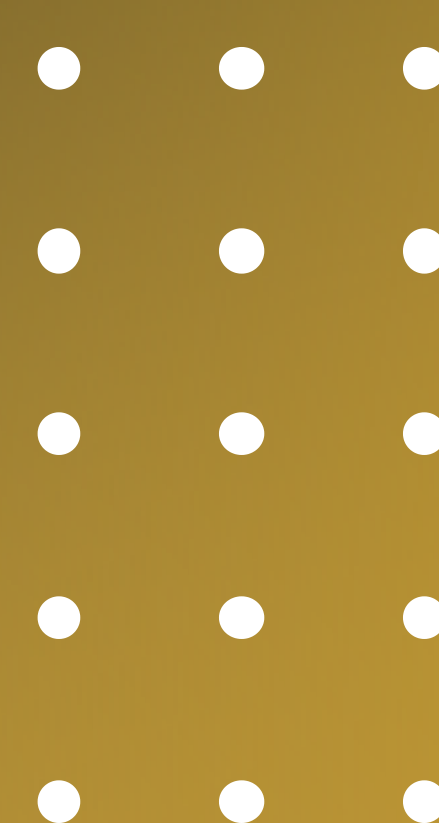
Alpha Coin

August 2022

Security Status



www.hacksafe.io



Audit Details



Audited project

Alpha Coin



Deployer address

0x7c7a2EC168FE7929726fE90B65b4AddC5467c653



Client contacts

Alpha Coin Team



Blockchain

Ethereum



Website

<https://alpha-coin.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 Alpha Coin to perform an audit of smart contracts:

- <https://etherscan.io/address/0x15bda08c3afbf5955d6e9b235fd55a1fd0dbc829#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 30.08.2022

Token Type	: ERC20
Contract name	: AlphacoinCoin
Contract address	: 0x15bdA08c3afbf5955D6e9B235Fd55a1FD0DbC829
Compiler version	: v0.4.25+commit.59dbf8f1
Total supply	: 65,000,000
Token Ticker	: APC
Decimals	: 6
Token Holders	: 1,990
Transactions count	: 15,355
Contract deployer address	: 0x7c7a2EC168FE7929726fE90B65b4AddC5467c653
Owner address	: No owner

Social profiles

Twitter profile : <https://twitter.com/AlphacoinTokens>

Coinmarketcap Profile : <https://coinmarketcap.com/currencies/alpha-coin/>

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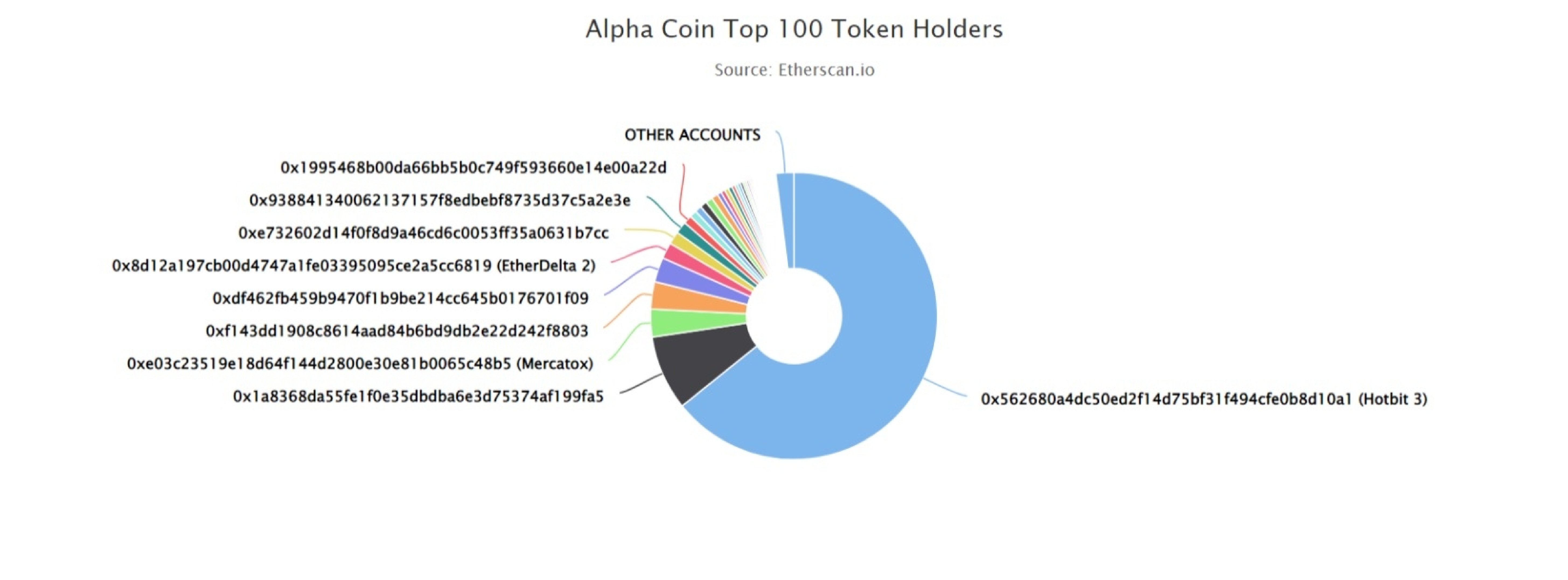
We used various tools like Slither, Mythril and Remix IDE. At the same time this finding is based on critical analysis of the manual audit. All issues found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the issues checking status.

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

Alpha Coin Token Distribution



 The top 100 holders collectively own 97.98% (63,685,733.90 Tokens) of Alpha Coin

 Token Total Supply: 65,000,000.00 Token | Total Token Holders: 1,990



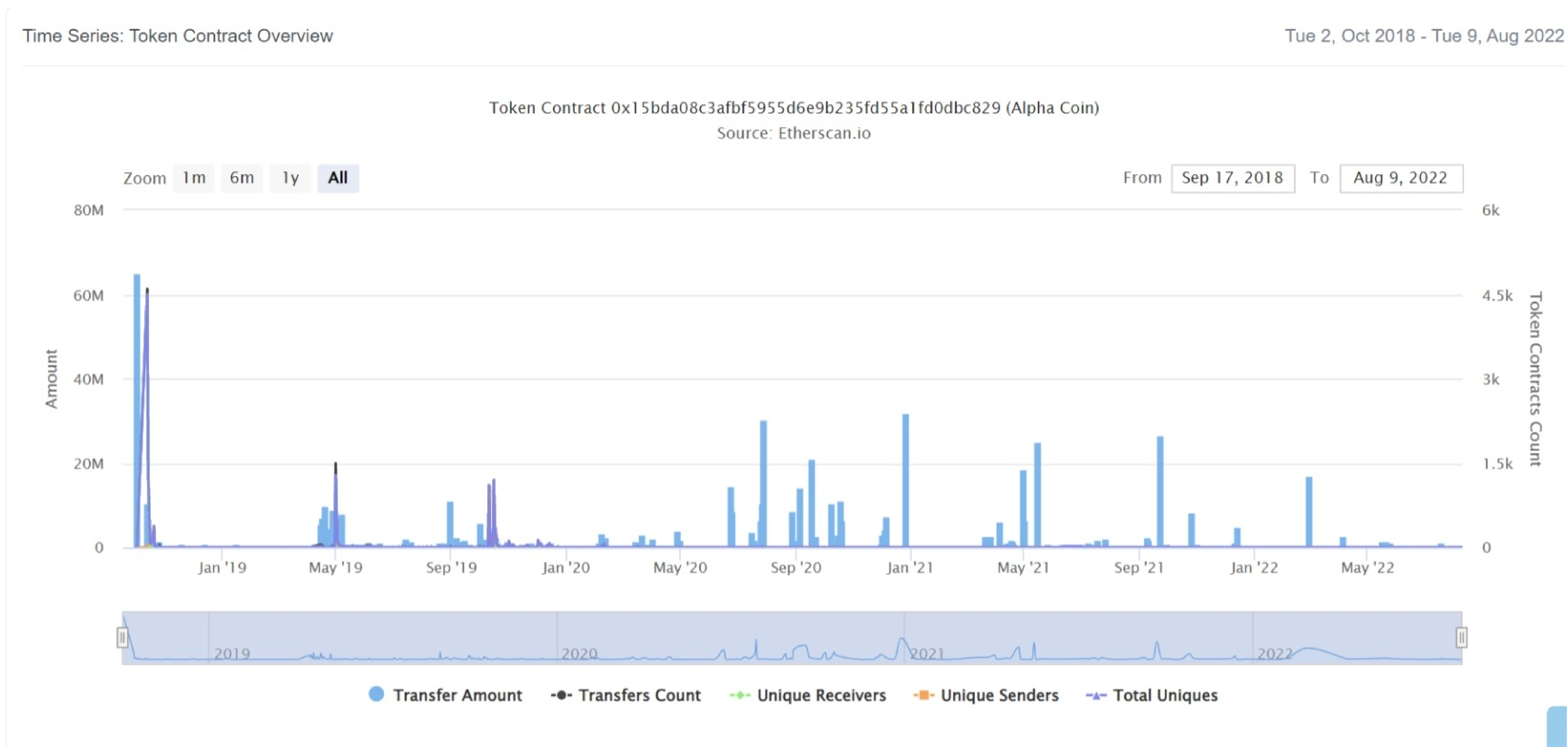
Alpha Coin Top 20 Token Holders

(A total of 63,685,733.90 tokens held by the top 100 accounts from the total supply of 65,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	Hotbit 3	41,751,778.441208	64.2335%
2	0x1a8368da55fe1f0e35dbdba6e3d75374af199fa5	5,468,575.122056	8.4132%
3	Mercatox	2,039,121.739953	3.1371%
4	0xf143dd1908c8614aad84b6bd9db2e22d242f8803	2,000,000	3.0769%
5	0xdf462fb459b9470f1b9be214cc645b0176701f09	1,800,000	2.7692%
6	 EtherDelta 2	1,182,606.916342	1.8194%
7	0xe732602d14f0f8d9a46cd6c0053ff35a0631b7cc	937,618	1.4425%
8	0x938841340062137157f8edbebf8735d37c5a2e3e	869,088.359066	1.3371%
9	0x1995468b00da66bb5b0c749f593660e14e00a22d	621,301.592929	0.9558%
10	0xae2ee7321601a2271a49e7d2a3a33b2a397a76f6	524,587.9	0.8071%
11	0xc7295535fd467c135d5f922c9265becdcc228ac7	502,844	0.7736%
12	0x26e23e75b95248fc7c40bfc074b43ebfb6ffc7f1	500,000	0.7692%
13	0x894e8ec9d5928f730d8ce81ecbfb0a6f332649df	499,162	0.7679%
14	0x04bf7ee20131cd9dcc2b6e8b8314c666d26edfd9	481,370	0.7406%
15	 0x6d3d9df38a305c04bdcdf772fedf5e479dd65e72	313,114	0.4817%
16	0xe26b6c84020e8a4f0f2c0b06a3106a91134f4376	300,000	0.4615%
17	0xbf7d7a8ed789783dc196e7bfcf5897d447e85256	292,267.873126	0.4496%
18	0x0d7c98939c9905fb391fd37a8da8106a9072b169	275,591	0.4240%
19	0x827414a6559cc4a04a69630622e9c2593698f98a	233,733	0.3596%
20	0xf58165bb22236f029cda055e9c807d5d59d1f124	215,438.99968	0.3314%

Alpha Coin Token Distribution

Alpha Coin Contract Overview



Contract functions details

+ [Int] IERC20

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

+ [Lib] SafeMath

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

+AlphacoinCoin (IERC20)

- [Pub] <constructor>
- [Pub] balanceOf
- [Pub] allowance
- [Pub] transfer #
- [Pub] transferFrom #
- [Pub] approve #
- [Pub] increaseApproval #
- [Pub] decreaseApproval #

(\$) = 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 0.4.24 the contract should contain the following line:

```
pragma solidity 0.4.25;
```


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.