Smart Contract Security Audit

Audit details:

Audited project:	Keanu Inu
Deployer address:	0xEA8071CEcF8BEF0234AFfDB508d26A96273AE7Ae
Client contacts:	Keanu Inu team
Blockchain:	Ethereum
Project website:	keanuinu.co

May, 2021
TechRate

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.

Background

TechRate was commissioned by Keanu Inu to perform an audit of smart contracts:

- *https://etherscan.io/address/0x106552c11272420aad5d7e94f8acab9095a6c952#code*

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used 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.

Contracts details

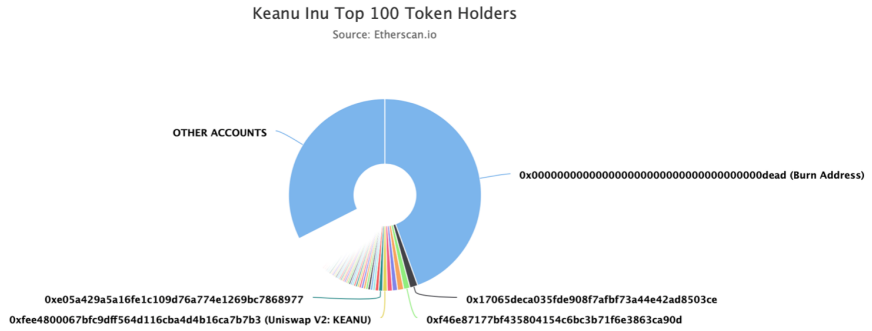
Token contract details for 15.05.2021.

Contract name:	Keanu Inu
Contract address:	0x106552C11272420aAd5d7e94f8AcAb9095A6c952
Total supply:	100_000_000_000_000_000
Token ticker:	KEANU
Decimals:	9
Token holders:	11010
Transactions count:	22356
Top 100 holders dominance:	67.50%
Tax fee:	2
Total fees:	12812677147858031893992098
Contract deployer address:	0xEA8071CEcF8BEF0234AFfDB508d26A96273AE7Ae
Contract's current owner address:	0x0000000000000000000000000000000000000000

Keanu Inu token distribution

The top 100 holders collectively own 67.50% (67,495,709,512,598,400.00 Tokens) of Keanu Inu

Token Total Supply: 100,000,000,000,000,000.00 Token | Total Token Holders: 11,010

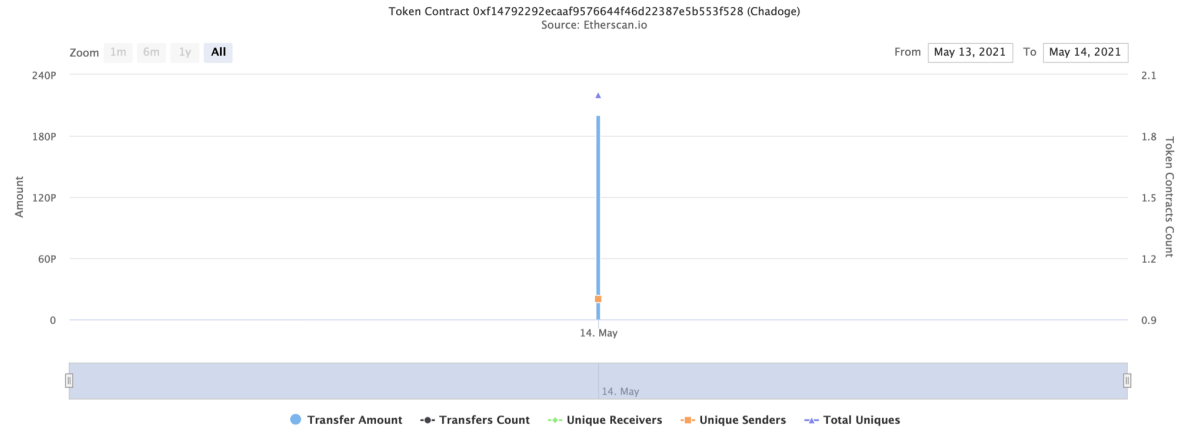


(A total of 67,495,709,512,598,400.00 tokens held by the top 100 accounts from the total supply of 100,000,000,000,000,000.00 token)

Keanu Inu contract interaction details

Time Series: Token Contract Overview

Fri 14, May 2021 - Fri 14, May 2021



Keanu Inu top 10 token holders

Rank	Address	Quantity (Token)	Percentage
1	Burn Address	44,475,464,191,974,300.925384679	44.4755%
2	0x17065deca035fde908f7afbf73a44e42ad8503ce	1,345,633,696,036,390.352532401	1.3456%
3	0xf46e87177bf435804154c6bc3b71f6e3863ca90d	1,054,440,332,510,670.314147515	1.0544%
4	0x3f6224798fcc06c5710c60a60fb57e4edba6b839	1,022,670,004,334,970.160125313	1.0227%
5	0x2b9036b82851a4f9efadbae256eb54f3add501da	871,475,302,046,237.177765325	0.8715%
6	0x1f7e1ebcc3fe68bef9b1d8fb2a66faae93f7e049	846,641,635,166,081.707308164	0.8466%
7	Uniswap V2: KEANU	775,612,648,716,751.944652304	0.7756%
8	0xe05a429a5a16fe1c109d76a774e1269bc7868977	666,001,251,532,444.91990662	0.6660%
9	0x98729faf84326d6b531eb2ad9ab79af3bf42f019	584,421,745,112,397.102871515	0.5844%
10	0x426a8cd87de6406a01519f2588aa3643cf228fc7	414,093,488,118,617.274578708	0.4141%

Contract functions details

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

+ [Int] IERC20
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transferFrom #

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

+ [Lib] Address
  - [Int] isContract
  - [Int] sendValue #
  - [Int] functionCall #
  - [Int] functionCall #
  - [Int] functionCallWithValue #
  - [Int] functionCallWithValue #
  - [Prv] _functionCallWithValue #

+ Ownable (Context)
  - [Int] <Constructor> #
  - [Pub] owner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner

+ KeanuInu (Context, IERC20, Ownable)
  - [Pub] <Constructor> #
  - [Pub] name
  - [Pub] symbol
  - [Pub] decimals
  - [Pub] totalSupply

- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Pub] isExcluded
- [Pub] totalFees
- [Pub] reflect #
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Ext] excludeAccount #
  - modifiers: onlyOwner
- [Ext] includeAccount #
  - modifiers: onlyOwner
- [Prv] _approve #
- [Prv] _transfer #
- [Prv] _transferStandard #
- [Prv] _transferToExcluded #
- [Prv] _transferFromExcluded #
- [Prv] _transferBothExcluded #
- [Prv] _reflectFee #
- [Prv] _getValues
- [Prv] _getTValues
- [Prv] _getRValues
- [Prv] _getRate
- [Prv] _getCurrentSupply

($) = payable function
= non-constant function

Issues Checking Status

№	Issue description.	Checking status
1	Compiler errors.	Passed
2	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3	Possible delays in data delivery.	Passed
4	Oracle calls.	Passed
5	Front running.	Passed
6	Timestamp dependence.	Passed
7	Integer Overflow and Underflow.	Passed
8	DoS with Revert.	Passed
9	DoS with block gas limit.	Low issues
10	Methods execution permissions.	Passed
11	Economy model of the contract.	Passed
12	The impact of the exchange rate on the logic.	Passed
13	Private user data leaks.	Passed
14	Malicious Event log.	Passed
15	Scoping and Declarations.	Passed
16	Uninitialized storage pointers.	Passed
17	Arithmetic accuracy.	Passed
18	Design Logic.	Passed
19	Cross-function race conditions.	Passed
20	Safe Open Zeppelin contracts implementation and usage.	Passed
21	Fallback function security.	Passed

Security Issues

High Severity Issues

No high severity issues found.

Medium Severity Issues

No medium severity issues found.

Low Severity Issues

1. Out of gas

Issue:

- The function `includeAccount()` uses the loop to find and remove addresses from the `_excluded` list. Function will be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

```
function includeAccount(address account) external onlyOwner() {
    require(_isExcluded[account], "Account is already excluded");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] == account) {
            _excluded[i] = _excluded[_excluded.length - 1];
            _tOwned[account] = 0;
            _isExcluded[account] = false;
            _excluded.pop();
            break;
        }
    }
}
```

- The function `_getCurrentSupply` also uses the loop for evaluating total supply. It also could be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

```
function _getCurrentSupply() private view returns(uint256, uint256) {
    uint256 rSupply = _rTotal;
    uint256 tSupply = _tTotal;
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return (_rTotal, _tTotal);
        rSupply = rSupply.sub(_rOwned[_excluded[i]]);
        tSupply = tSupply.sub(_tOwned[_excluded[i]]);
    }
    if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
    return (rSupply, tSupply);
}
```

Recommendation:

Use EnumerableSet instead of array or do not use long arrays.

Conclusion

Smart contracts do not contain high severity issues!

Liquidity locking details provided by the team:
https://etherscan.io/tx/0x72c7e6011673e989e2686d9e5b20aa0883677b84afbfa973956dd2c38f5ac465

Techrate note:
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