



TechRate

AUDIT COMPANY

Smart Contract Security Audit

Audit Details



Audited project

Hachiko Inu



Deployer address

0x980817e617ca5cDf220e87f5544592BF7a9661b3



Client contacts:

Hachiko Inu team



Blockchain

Ethereum



Project website:

<https://www.hachikoinu.org>

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 Hachiko Inu to perform an audit of smart contracts:

<https://etherscan.io/token/0xf32aa187d5bc16a2c02a6afb7df1459d0d107574>

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 03.11.2021

Contract name	Hachiko Inu
Contract address	0xF32aa187d5Bc16A2C02A6aFb7Df1459d0D107574
Total supply	1,000,000,000,000,000
Token ticker	Inu
Decimals	18
Token holders	2,555
Transactions count	15,385
Top 100 holders dominance	98.56%
Total fees	152684991650345922091884560403545
Contract deployer address	0x53c538ae77e9dfed2337c94a26451c9a6ee4b435
Contract's current owner address	0x53c538ae77e9dfed2337c94a26451c9a6ee4b435

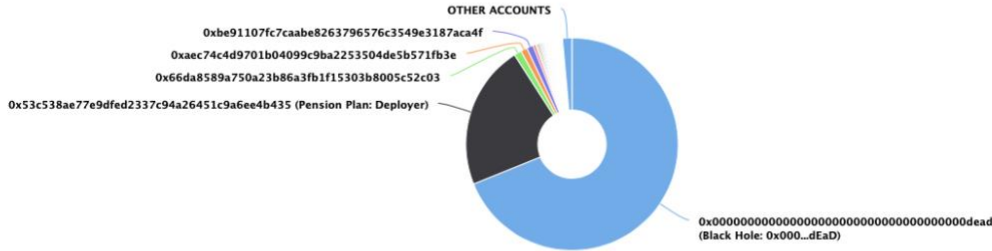
Hachiko Inu Token Distribution

The top 100 holders collectively own 98.56% (985,631,262,866,002.00 Tokens) of Hachiko Inu

Token Total Supply: 1,000,000,000,000.00 Token | Total Token Holders: 2,555

Hachiko Inu Top 100 Token Holders

Source: Etherscan.io



(A total of 985,631,262,866,002.00 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000.00 token)

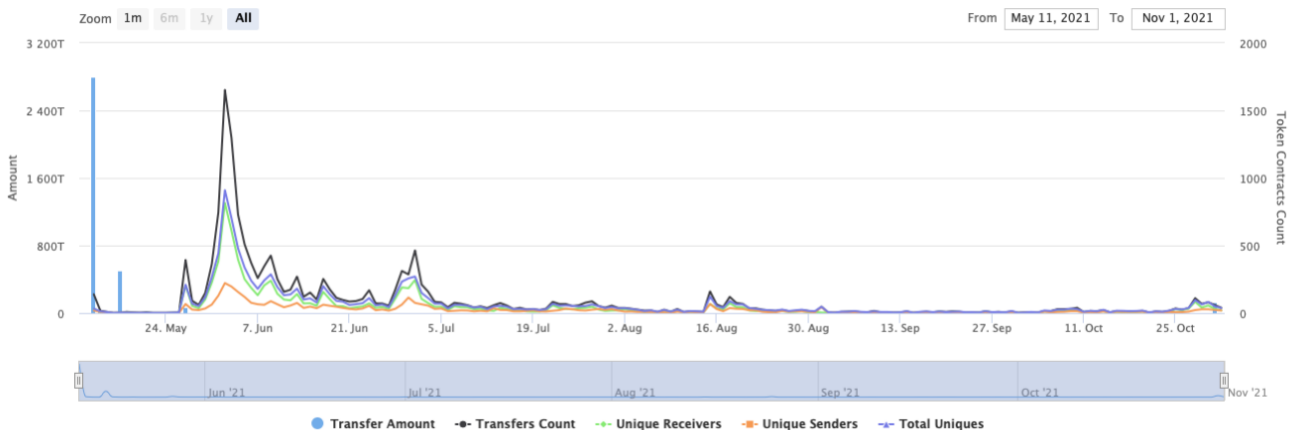
Hachiko Inu Contract Interaction Details

Time Series: Token Contract Overview


Thu 13, May 2021 - Mon 1, Nov 2021

Token Contract 0xf32aa187d5bc16a2c02a6afb7df1459d0d107574 (Hachiko Inu)

Source: Etherscan.io



Hachiko Inu Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Black Hole: 0x000...dEaD	688,929,367,135,295.695055827780546672	68.8929%
2	Pension Plan: Deployer	220,000,000,000,000.768220643554121524	22.0000%
3	0x66da8589a750a23b86a3fb1f15303b8005c52c03	11,199,207,025,945.465811008336964301	1.1199%
4	0xaec74c4d9701b04099c9ba2253504de5b571fb3e	9,999,000,000,000.000043495144468739	0.9999%
5	0xbe91107fc7caabe8263796576c3549e3187aca4f	9,981,805,798,040.841719075539610055	0.9982%
6	0xde770a63cb126282b14d4e9a5624912847f2ccdb	3,651,239,657,417.618076538657290004	0.3651%
7	 Uniswap V2: Inu 6	2,615,493,151,252.484361537555884682	0.2615%
8	0xd0c9884676958375643e597d158395726ed7a8bd	2,541,330,100,545.98645052584066072	0.2541%
9	0x76574950a7c98c09d55748c8b2a1cfc6a94080d6	2,387,135,394,099.969791074773917502	0.2387%
10	Hotbit 3	2,345,285,537,667.420706216809233539	0.2345%

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
- + Hachikolnu (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
- [Ext] setMaxTxPercent #
 - modifiers: onlyOwner
- [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 not 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:

Check that the excluded array length is not too big.

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope.

Liquidity locking details are provided by the team:

<https://app.unicrypt.network/amm/uni-v2/pair/0x9e53fad7cb9343333809a049c322ebc1f72ef544>

TechRate 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.