



Smart Contract Security Audit

Audit details:

Audited project:	TasteNFT
Deployer address:	0xf103d2AbA493749a402B7dE11cF31f5844062B74
Client contacts:	TasteNFT team
Blockchain:	Binance Smart Chain
Project website:	Not provided by the TasteNFT team

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 TasteNFT to perform an audit of smart contracts:

- <https://bscscan.com/address/0xdb238123939637d65a03e4b2b485650b4f9d91cb#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 19.05.2021.

Contract name:	TasteNFT
Contract address:	0xdB238123939637D65a03E4b2b485650B4f9D91C B
Total supply:	1_000_000_000_000_000_000_000_000
Token ticker:	TASTE
Decimals:	9
Token holders:	15,456
Transactions count:	37,389
Top 100 holders dominance:	68.24%
Liquidity fee:	5
Tax fee:	5
Total fees:	59265904256168946927308
Uniswap V2 pair:	0x75C7C70992c31Fee5869d6Cc59E603Ae2ac2e63 A
Contract deployer address:	0xf103d2AbA493749a402B7dE11cF31f5844062B74
Contract's current owner address:	0x9987605c8741d945098d7d6ba30bc41acc1b821e

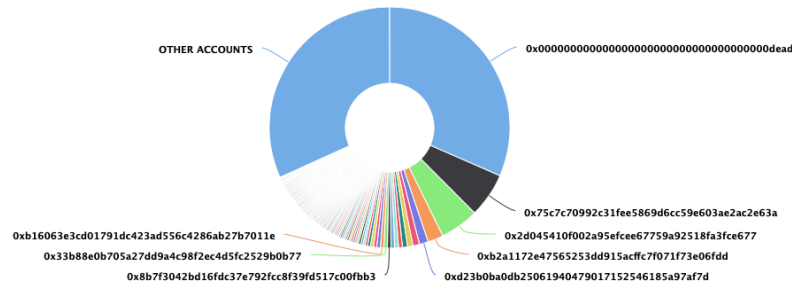
TasteNFT token distribution

💡 The top 100 holders collectively own 68.24% (682,377,448,815,602.00 Tokens) of TasteNFT

💡 Token Total Supply: 1,000,000,000,000.00 Token | Total Token Holders: 15,457

TasteNFT Top 100 Token Holders

Source: BscScan.com



(A total of 682,377,448,815,602.00 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000,000.00 token)

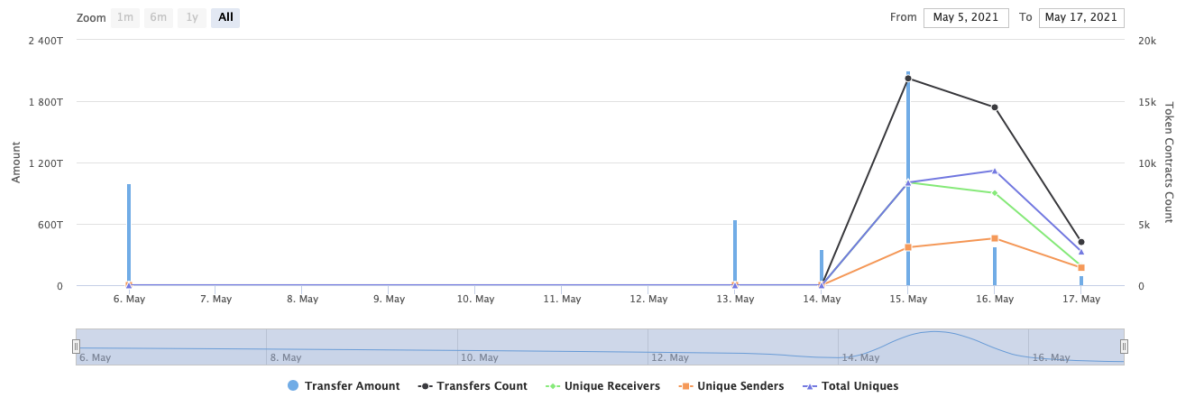
TasteNFT contract interaction details

Time Series: Token Contract Overview

Thu 6, May 2021 - Mon 17, May 2021

Token Contract 0xdb238123939637d65a03e4b2b485650b4f9d91cb (TasteNFT)

Source: BscScan.com



TasteNFT top 10 token holders

Rank	Address	Quantity (Token)	Percentage
1	0x000000000000000000000000000000000000dead	315,395,049,488,394.310047151	31.5395%
2	0x75c7c70992c31fee5869d6cc59e603ae2ac2e63a	59,870,062,792,508.329315998	5.9870%
3	0x2d045410f002a95efcee67759a92518fa3fce677	52,000,000,000,000	5.2000%
4	0xb2a1172e47565253dd915acffc7f071f73e06fdd	20,927,658,139,439.715101857	2.0928%
5	0xd23b0ba0db25061940479017152546185a97af7d	11,931,022,539,442.748362847	1.1931%
6	0xc1089477c160347a0eb3e6587224192d5ac05861	8,826,979,613,507.345972056	0.8827%
7	0x9987605c8741d945098d7d6ba30bc41acc1b821e	7,169,865,835,496.421703331	0.7170%
8	0xc18a0029637f180347c347761cd10dd3b5c7a7ef5	6,889,945,546,941.807640442	0.6890%
9	0x2098e959ef98d415bb0407b4b48234e407da5e76	5,311,754,833,471.449903364	0.5312%
10	0x548e03c19a175a66912685f71e157706fee6a04d	5,000,257,660,521.824935041	0.5000%

TasteNFT LP token holders

Rank	Address	Quantity	Percentage	Analytics
1	0x87bac552b0b585a7b4573544cfb3e9c2042a882	8,398.710026952000003369	98.3868%	Analytics
2	0x07d80ae6f36a5e08dca74ce884a24d39db9934ed	135.770507774684778158	1.5905%	Analytics
3	0x073d1e4864bb57f9da954580e0faedce8fb564d8	1.281859361827007744	0.0150%	Analytics
4	0xc7c1a6338091fd49afb885de9e69514a0c243b8b	0.517176007655035069	0.0061%	Analytics
5	0xa7846bfe0fc80df2bd978566c2d3d4a9e30bdd1b	0.087297801313532577	0.0010%	Analytics
6	0xf7f14aea9ec2bd3d1c8fdcec4cb05fb7053a01ac	0.036391374048223768	0.0004%	Analytics
7	0x57993001845542db9475f36c8ed876392c5d2174	0.006471808840263188	0.0001%	Analytics
8	0x0598a98bdaa0e318ebbb8f018605c8699fe8fee0	0.006087297389925741	0.0001%	Analytics
9	0x7e5c5a2c438bcc01f583a98dd4eda3fa6b4e0eb0	0.005981480327566678	0.0001%	Analytics
10	0x00	0.000000000000001	0.0000%	Analytics

Contract functions details

+ [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

+ Context

- [Int] _msgSender
- [Int] _msgData

+ [Lib] Address

- [Int] isContract
- [Int] sendValue #
- [Int] functionCall #
- [Int] functionCall #
- [Int] functionCallWithValue #
- [Int] functionCallWithValue #
- [Prv] _functionCallWithValue #

+ Ownable (Context)

- [Pub] owner
- [Pub] renounceOwnership #
 - modifiers: onlyOwner
- [Pub] transferOwnership #
 - modifiers: onlyOwner
- [Pub] geUnlockTime
- [Pub] lock #
 - modifiers: onlyOwner
- [Pub] unlock #

+ [Int] IUniswapV2Factory

- [Ext] feeTo

- [Ext] feeToSetter
- [Ext] getPair
- [Ext] allPairs
- [Ext] allPairsLength
- [Ext] createPair #
- [Ext] setFeeTo #
- [Ext] setFeeToSetter #

+ [Int] IUniswapV2Pair

- [Ext] name
- [Ext] symbol
- [Ext] decimals
- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] allowance
- [Ext] approve #
- [Ext] transfer #
- [Ext] transferFrom #
- [Ext] DOMAIN_SEPARATOR
- [Ext] PERMIT_TYPEHASH
- [Ext] nonces
- [Ext] permit #
- [Ext] MINIMUM_LIQUIDITY
- [Ext] factory
- [Ext] token0
- [Ext] token1
- [Ext] getReserves
- [Ext] price0CumulativeLast
- [Ext] price1CumulativeLast
- [Ext] kLast
- [Ext] mint #
- [Ext] burn #
- [Ext] swap #
- [Ext] skim #
- [Ext] sync #
- [Ext] initialize #

+ [Int] IUniswapV2Router01

- [Ext] factory
- [Ext] WETH
- [Ext] addLiquidity #
- [Ext] addLiquidityETH (\$)
- [Ext] removeLiquidity #
- [Ext] removeLiquidityETH #
- [Ext] removeLiquidityWithPermit #
- [Ext] removeLiquidityETHWithPermit #
- [Ext] swapExactTokensForTokens #

- [Ext] swapTokensForExactTokens #
 - [Ext] swapExactETHForTokens (\$)
 - [Ext] swapTokensForExactETH #
 - [Ext] swapExactTokensForETH #
 - [Ext] swapETHForExactTokens (\$)
 - [Ext] quote
 - [Ext] getAmountOut
 - [Ext] getAmountIn
 - [Ext] getAmountsOut
 - [Ext] getAmountsIn
- + [Int] IUniswapV2Router02 (IUniswapV2Router01)
- [Ext] removeLiquidityETHSupportingFeeOnTransferTokens #
 - [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens #
 - [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
 - [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens (\$)
 - [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #
- + CoinToken (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] isExcludedFromReward
 - [Pub] totalFees
 - [Pub] deliver #
 - [Pub] reflectionFromToken
 - [Pub] tokenFromReflection
 - [Pub] excludeFromReward #
 - modifiers: onlyOwner
 - [Ext] includeInReward #
 - modifiers: onlyOwner
 - [Prv] _transferBothExcluded #
 - [Pub] excludeFromFee #
 - modifiers: onlyOwner
 - [Pub] includeInFee #
 - modifiers: onlyOwner
 - [Ext] setTaxFeePercent #
 - modifiers: onlyOwner

- [Ext] setLiquidityFeePercent #
 - modifiers: onlyOwner
- [Pub] setNumTokensSellToAddToLiquidity #
 - modifiers: onlyOwner
- [Pub] setMaxTxPercent #
 - modifiers: onlyOwner
- [Pub] setSwapAndLiquifyEnabled #
 - modifiers: onlyOwner
- [Ext] <Fallback> (\$)
- [Prv] _reflectFee #
- [Prv] _getValues
- [Prv] _getTValues
- [Prv] _getRValues
- [Prv] _getRate
- [Prv] _getCurrentSupply
- [Prv] _takeLiquidity #
- [Pub] claimTokens #
 - modifiers: onlyOwner
- [Prv] calculateTaxFee
- [Prv] calculateLiquidityFee
- [Prv] removeAllFee #
- [Prv] restoreAllFee #
- [Pub] isExcludedFromFee
- [Prv] _approve #
- [Prv] _transfer #
- [Prv] swapAndLiquify #
 - modifiers: lockTheSwap
- [Prv] swapTokensForEth #
- [Prv] addLiquidity #
- [Prv] _tokenTransfer #
- [Prv] _transferStandard #
- [Prv] _transferToExcluded #
- [Prv] _transferFromExcluded #

(\$) = 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 `includeInReward()` 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 includeInReward(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.

Owner privileges (In the period when the owner is not renounced)

❑ Owner can change the tax and liquidity fee.

```
function setTaxFeePercent(uint256 taxFee) external onlyOwner() {
    _taxFee = taxFee;
}

function setLiquidityFeePercent(uint256 liquidityFee) external onlyOwner() {
    _liquidityFee = liquidityFee;
}
```

❑ Owner can change the maximum transaction amount.

```
function setMaxTxPercent(uint256 maxTxPercent) external onlyOwner() {
    _maxTxAmount = _tTotal.mul(maxTxPercent).div(
        10**2
    );
}
```

❑ Owner can exclude from the fee.

```
function excludeFromFee(address account) public onlyOwner {
    _isExcludedFromFee[account] = true;
}
```

❑ Owner can claim tokens

```
function claimTokens() public onlyOwner {
    payable(_owner).transfer(address(this).balance);
}
```

❑ Owner can change numTokensSellToAddToLiquidity

```
function setNumTokensSellToAddToLiquidity(uint256 swapNumber) public onlyOwner {
    numTokensSellToAddToLiquidity = swapNumber * 10 ** _decimals;
}
```

- ❑ Owner can lock and unlock. By the way, using these functions the owner could leave as owner even after the ownership was renounced.

```
//Locks the contract for owner for the amount of time provided
function lock(uint256 time) public virtual onlyOwner {
    _previousOwner = _owner;
    _owner = address(0);
    _lockTime = now + time;
    emit OwnershipTransferred(_owner, address(0));
}

//Unlocks the contract for owner when _lockTime is exceeds
function unlock() public virtual {
    require(_previousOwner == msg.sender, "You don't have permission to unlock");
    require(now > _lockTime , "Contract is locked until 7 days");
    emit OwnershipTransferred(_owner, _previousOwner);
    _owner = _previousOwner;
}
```

Conclusion

Smart contracts contain low severity issues. LP pair contract is not checked.

Liquidity locking details not provided by the team.

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.