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AUDIT COMPANY

Smart Contract Security Audit

TechRate

January, 2022

Audit Details

Audited project

DYOR Token

Deployer address

0x4a7ccd75a4ce2f7bd39547e33a7e6584f5542557

Client contacts:

DYOR Token team

Blockchain

Binance Smart Chain

Project website:

https://dyorpro.com

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 DYOR Token to perform an audit of smart contracts:

https://bscscan.com/address/0x10051147418c42218986cedd0adc266441f8a14f#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

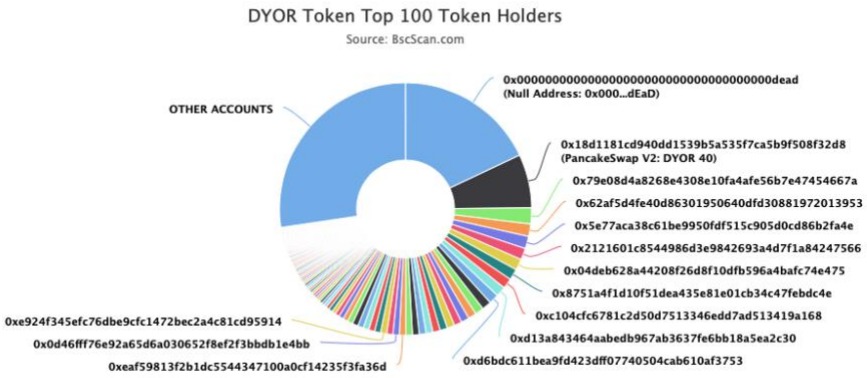
Token contract details for 28.01.2022

Contract name	DYOR Token
Contract address	0x10051147418C42218986CeDD0aDC266441F8a14f
Total supply	100,000,000,000
Token ticker	DYOR
Decimals	9
Token holders	31,390
Transactions count	32,077
Top 100 holders dominance	72.67%
Liquidity fee	7
Tax fee	3
Total fees	115990911886359093
Uniswap V2 pair	0x18d1181cd940dd1539b5a535f7ca5b9f508f32d8
Contract deployer address	0x4a7ccd75a4ce2f7bd39547e33a7e6584f5542557
Contract's current owner address	0x79e08d4a8268e4308e10fa4afe56b7e47454667a

DYOR Token Token Distribution

The top 100 holders collectively own 72.67% (72,674,252,462.86 Tokens) of DYOR Token

Token Total Supply: 100,000,000,000.00 Token | Total Token Holders: 31,390

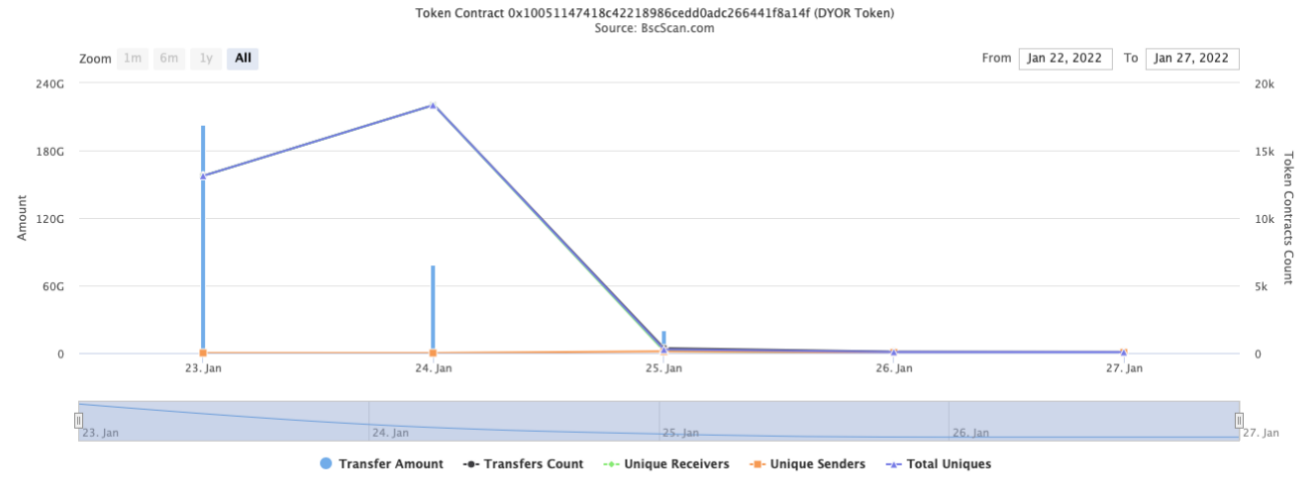


(A total of 72,674,252,462.86 tokens held by the top 100 accounts from the total supply of 100,000,000,000.00 token)

DYOR Token Contract Interaction Details

Time Series: Token Contract Overview

Sun 23, Jan 2022 - Thu 27, Jan 2022



DYOR Token Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Null Address: 0x000...dEaD	18,000,086,554.622290387	18.0001%
2	PancakeSwap V2: DYOR 40	6,857,957,692.049724514	6.8580%
3	0x79e08d4a8268e4308e10fa4afe56b7e47454667a	2,044,509,274.436935625	2.0445%
4	0x62af5d4fe40d86301950640dfd30881972013953	1,598,241,934	1.5982%
5	0x5e77aca38c61be9950fdf515c905d0cd86b2fa4e	1,576,521,472.401389793	1.5765%
6	0x2121601c8544986d3e9842693a4d7f1a84247566	1,478,373,789	1.4784%
7	0x04deb628a44208f26d8f10dfb596a4bafc74e475	1,438,417,741	1.4384%
8	0x8751a4f1d10f51dea435e81e01cb34c47febdc4e	1,407,198,140	1.4072%
9	0xc104cfc6781c2d50d7513346edd7ad513419a168	1,330,953,884	1.3310%
10	0xd13a843464aabedb967ab3637fe6bb18a5ea2c30	1,278,593,548	1.2786%

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)
  - [Pub] <Constructor> #
  - [Pub] owner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner
  - [Pub] getUnlockTime
  - [Pub] getTime
  - [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] burn #
  - [Ext] swap #
  - [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 #

+ DYORToken (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] minimumTokensBeforeSwapAmount
  - [Pub] deliver #
  - [Pub] reflectionFromToken
  - [Pub] tokenFromReflection
  - [Pub] excludeFromReward #
    - modifiers: onlyOwner
  - [Ext] includeInReward #
    - modifiers: onlyOwner
  - [Prv] _approve #
  - [Prv] _transfer #
  - [Int] swapAndLiquify #
    - modifiers: lockTheSwap
  - [Int] swapTokensForEth #
  - [Prv] addLiquidity #
  - [Prv] _tokenTransfer #
  - [Prv] _transferStandard #
  - [Prv] _transferToExcluded #
  - [Prv] _transferFromExcluded #
  - [Prv] _transferBothExcluded #
  - [Prv] _reflectFee #
  - [Prv] _getValues
  - [Prv] _getTValues
  - [Prv] _getRValues
  - [Prv] _getRate
  - [Prv] _getCurrentSupply
  - [Prv] _takeLiquidity #
  - [Prv] calculateTaxFee
  - [Prv] calculateLiquidityFee
  - [Prv] removeAllFee #
  - [Prv] restoreAllFee #
  - [Pub] resetTotalFees #
    - modifiers: onlyOwner
  - [Pub] isExcludedFromFee
  - [Pub] excludeFromFee #
    - modifiers: onlyOwner
  - [Pub] isExcludedFromMaxTxAmount
  - [Pub] excludeFromMaxTxAmount #
    - modifiers: onlyOwner
  - [Pub] includeToMaxTxAmount #

  - modifiers: onlyOwner
- [Pub] includeInFee #
  - modifiers: onlyOwner
- [Ext] setMaxTxAmount #
  - modifiers: onlyOwner
- [Ext] setNumTokensSellToAddToLiquidity #
  - modifiers: onlyOwner
- [Pub] setSwapAndLiquifyEnabled #
  - modifiers: onlyOwner
- [Ext] setOperationsAddress #
  - modifiers: onlyOwner
- [Ext] setDevelopmentAddress #
  - modifiers: onlyOwner
- [Ext] setMarketingAddress #
  - modifiers: onlyOwner
- [Ext] setLiquidityAddress #
  - modifiers: onlyOwner
- [Pub] transferContractBalance #
  - modifiers: onlyOwner
- [Prv] transferOutETH #
- [Ext] recoverExcess #
  - modifiers: onlyOwner
- [Pub] updateFees #
  - modifiers: onlyOwner
- [Ext] airdropToWallets #
  - modifiers: onlyOwner
- [Ext] <Fallback> ($)

($) = 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];
            uint256 currentRate = _getRate();
            _rOwned[account] = _tOwned[account].mul(currentRate);
            _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.

- The function `airdropToWallets()` uses the loop to airdrop amounts from list. It also could be aborted with `OUT_OF_GAS` exception if there will be a long addresses list.

```
function airdropToWallets(
    address[] memory airdropWallets⬆,
    uint256[] memory amount⬆
) external onlyOwner {
    require(
        airdropWallets⬆.length == amount⬆.length,
        "Arrays must be the same length"
    );
    for (uint256 i = 0; i < airdropWallets⬆.length; i++) {
        address wallet = airdropWallets⬆[i];
        uint256 airdropAmount = amount⬆[i];
        _transfer(msg.sender, wallet, airdropAmount);
    }
}
```

Recommendation:
Check that the array length is not too big.

Notes:

- There is no checking of owner's balance to fit airdrop amount.

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

- Owner can reset total fees.
- Owner can change minimumTokensBeforeSwap.
- Owner can change operations, marketing, development and liquidity addresses.
- Owner can withdraw contract tokens and BNBs.
- Owner can change all fees.
- Owner can airdrop to wallets.
- Owner can change the maximum transaction amount.
- Owner can exclude from the fee and the maximum transaction amount.
- Owner can lock and unlock. By the way, using these functions the owner could retake privileges even after the ownership was renounced.

Conclusion

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

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.