AUDITEK

AUGUST 2021

Financial Audit Report

Smart Contract Security Audit

DRAGON DOGE

PRESENTED BY

Davis Thorne
and Partners

Audit Details

Audited project

Dragon Doge

Deployer address

0x9a362ad9b40be11de64dcafe611d58c03f1e43a6

Client contacts:

DRAGON DOGE TEAM

Blockchain

Binance Smart Chain

Project website:

http://www.dragondogecoin.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

Auditek was commissioned by Dragon Doge Coin to perform an audit of smart contracts:
https://bscscan.com/address/0x02de40AFa0fd7bc1bEc4A247317F1975f508535D

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

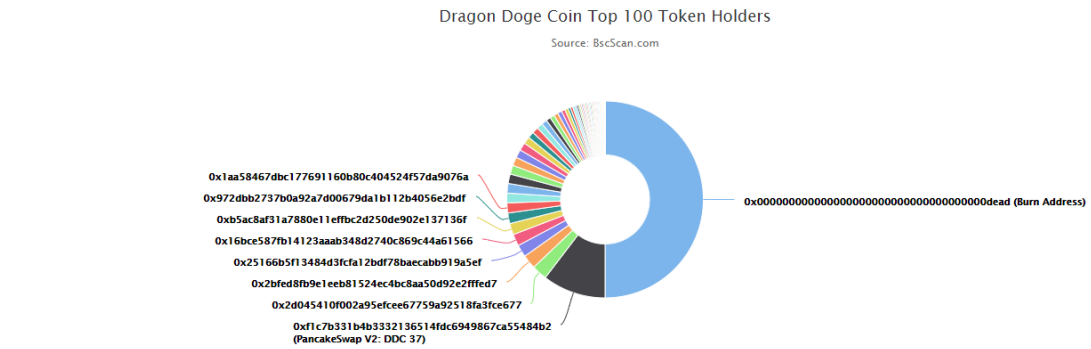
Token contract details for 20.08.2021

Contract name	Dragon Doge Coin
Contract address	0x02de40AFa0fd7bc1bEc4A247317F1975f508535D
Total supply	100,000,000,000
Token ticker	DDC
Decimals	18
Token holders	87
Transactions count	921
Top 100 holders dominance	100.00%
Liquidity fee	4
Tax fee	8
Total fees	12
Uniswap V2 pair	0x93d94fcb0dcc8a88257b2d2eec7a2615ebedb542
Contract deployer address	0x9a362ad9b40be11de64dcafe611d58c03f1e43a6
Contract's current owner address	0x9a362ad9b40be11de64dcafe611d58c03f1e43a6

DRAGON DOGE Token Distribution

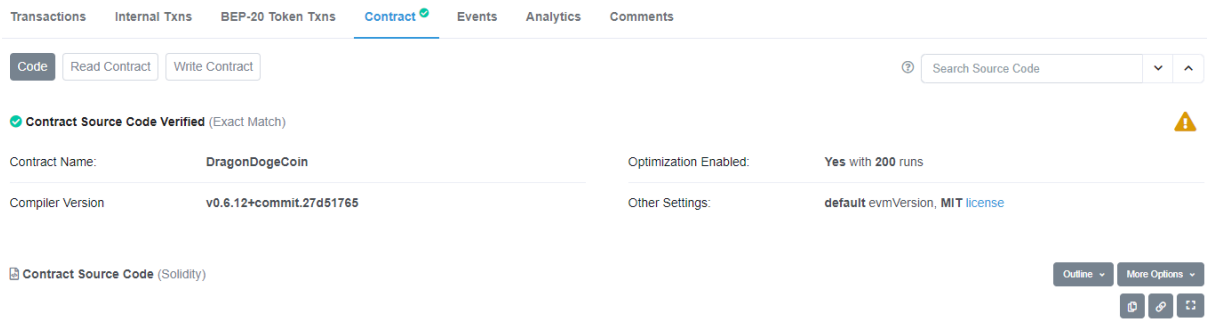
The top 100 holders collectively own 100.00% (100,000,000,000.00 Tokens) of Dragon Doge Coin

Token Total Supply: 100,000,000,000.00 Token | Total Token Holders: 87



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

DRAGON DOGE Contract Interaction Details



LITTLE DOGE CAKE Top 10 Token Holders

A total of 87 token holders

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Rank	Address	Quantity	Percentage	Analytics
1	Burn Address	50,000,000,000	50.0000%	
2	PancakeSwap V2: DDC 37	10,419,556,482.519023425134159732	10.4196%	
3	0x2d045410f002a95efcee67759a92518fa3fce677	2,500,000,000	2.5000%	
4	0x2bfed8fb9e1eeb81524ec4bc8aa50d92e2fffed7	2,320,787,769.976100811362992564	2.3208%	
5	0x25166b5f13484d3fcfa12bdf78baecabb919a5ef	2,007,718,929.868440612851384583	2.0077%	
6	0x16bce587fb14123aaab348d2740c869c44a61566	1,947,038,237.76	1.9470%	
7	0xb5ac8af31a7880e11effbc2d250de902e137136f	1,866,881,968.16	1.8669%	
8	0x972dbb2737b0a92a7d00679da1b112b4056e2bdf	1,732,163,367.44	1.7322%	
9	0x1aa58467dbc177691160b80c404524f57da9076a	1,651,008,342.091926563581613382	1.6510%	
10	0x0aeb446cccd61e936c43834b2ecbaa57342d37a0	1,602,004,806.16	1.6020%	

A total of 87 holders

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] renounceOwnership #
    - modifiers: onlyOwner
  - [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] 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 #

+ Kingwarrior (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] buyBackUpperLimitAmount
- [Pub] deliver #
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Pub] excludeFromReward #
  - modifiers: onlyOwner
- [Ext] includeInReward #
  - modifiers: onlyOwner
- [Prv] _approve #
- [Prv] _transfer #
- [Prv] swapTokens #
  - modifiers: lockTheSwap
- [Prv] buyBackTokens #
  - modifiers: lockTheSwap
- [Prv] swapTokensForEth #
- [Prv] swapETHForTokens #
- [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] isExcludedFromFee
- [Pub] excludeFromFee #

  - modifiers: onlyOwner
- [Pub] includeInFee #
  - modifiers: onlyOwner
- [Ext] setTaxFeePercent #
  - modifiers: onlyOwner
- [Ext] setLiquidityFeePercent #
  - modifiers: onlyOwner
- [Ext] setMaxTxAmount #
  - modifiers: onlyOwner
- [Ext] setMarketingDivisor #
  - modifiers: onlyOwner
- [Ext] setNumTokensSellToAddToLiquidity #
  - modifiers: onlyOwner
- [Ext] setBuybackUpperLimit #
  - modifiers: onlyOwner
- [Ext] setMarketingAddress #
  - modifiers: onlyOwner
- [Pub] setSwapAndLiquifyEnabled #
  - modifiers: onlyOwner
- [Pub] setBuyBackEnabled #
  - modifiers: onlyOwner
- [Ext] prepareForPreSale #
  - modifiers: onlyOwner
- [Ext] afterPreSale #
  - modifiers: onlyOwner
- [Prv] transferToAddressETH #
- [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 setBTCBRewardsFee(uint256 value) external onlyOwner{
    BTCBRewardsFee = value;
    totalFees = BTCBRewardsFee.add(liquidityFee);
}

function setLiquidityFee(uint256 value) external onlyOwner{
    liquidityFee = value;
    totalFees = BTCBRewardsFee.add(liquidityFee);
}

function setAutomatedMarketMakerPair(address pair, bool value) public onlyOwner {
    require(pair != uniswapV2Pair, "DRAGONDOGE: The PancakeSwap pair cannot be removed from automatedMarketMakerPairs");
```

- 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.

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

- Owner can change tax and liquidity fees.

```
address public immutable BTCB = address(0x7130d2A12B9BCbFAe4f2634d864A1Ee1Ce3Ead9c);

uint256 public swapTokensAtAmount = 2000000 * (10**18);

mapping(address => bool) public _isBlacklisted;

uint256 public BTCBRewardsFee = 8;
uint256 public liquidityFee = 4;

uint256 public totalFees = BTCBRewardsFee.add(liquidityFee);
```

- Owner can change maximum transaction amount.

```
ftrace | funcSig
function setMaxTxAmount(uint256 maxTxAmount⬆) external onlyOwner() {
    _maxTxAmount = maxTxAmount⬆;
}
```

- Owner can exclude from the fee.

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

- Owner can change marketingDivisor.

```
ftrace | funcSig
function setMarketingDivisor(uint256 divisor⬆) external onlyOwner() {
    marketingDivisor = divisor⬆;
}
```

- Owner can change minimum number of tokens to add to liquidity.

```
ftrace | funcSig
function setNumTokensSellToAddToLiquidity(uint256 _minimumTokensBeforeSwap⬆) external onlyOwner() {
    minimumTokensBeforeSwap = _minimumTokensBeforeSwap⬆;
}
```

- **Owner can change buyBackUpperLimit.**

```
ftrace | funcSig
function setBuybackUpperLimit(uint256 buyBackLimit⬆) external onlyOwner() {
    buyBackUpperLimit = buyBackLimit⬆ * 10**18;
}
```

- **Owner can change marketing address.**

```
ftrace | funcSig
function setMarketingAddress(address _marketingAddress⬆) external onlyOwner() {
    marketingAddress = payable(_marketingAddress⬆);
}
```

- **Owner can enable and disable buyBack.**

```
ftrace | funcSig
function setBuyBackEnabled(bool _enabled⬆) public onlyOwner {
    buyBackEnabled = _enabled⬆;
    emit BuyBackEnabledUpdated(_enabled⬆);
}
```

- **Owner can lock and unlock. By the way, using these functions the owner could retake privileges 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! Liquidity pair contract's security is not checked due to out of scope. One third of the liquidity goes to marketing address.

Liquidity locking details NOT provided by the team.

Auditek 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.

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