



TechRate
AUDIT COMPANY

Smart Contract Security Audit

Audit Details



Audited project

Squid Dogs



Deployer address

0x82a1d9e8ce34f3e78628c243669e9e11e0b1e34f



Client contacts:

Squid Dogs team



Blockchain

Ethereum



Project website:

<https://squiddogs.games/>

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 Squid Dogs to perform an audit of smart contracts:

<https://etherscan.io/address/0x755f0a971f2a3bb2aede78db2cd34170c08b7a41#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 12.01.2022

Contract name	Squid Dogs
Contract address	0x755F0A971F2a3bB2AeDe78db2CD34170C08B7A41
Total supply	800,000,000,000,000,000,000
Token ticker	SQDDOGS
Decimals	9
Token holders	66
Transactions count	171
Top 100 holders dominance	99.96%
Marketing fee	8
Tax fee	1
Total fees	2083083439641938158043297191
Uniswap V2 pair	0x05932d6a006b7d5c7ee3123b074febbae841df2b
Contract deployer address	0x82a1d9e8ce34f3e78628c243669e9e11e0b1e34f
Contract's current owner address	0x82a1d9e8ce34f3e78628c243669e9e11e0b1e34f

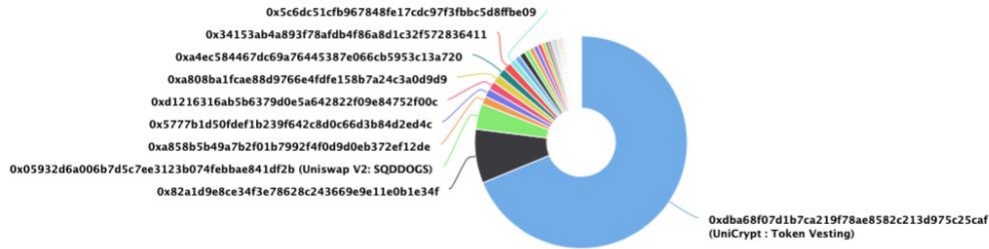
Squid Dogs Token Distribution

The top 100 holders collectively own 99.96% (799,685,404,531,589,000,000.00 Tokens) of Squid Dogs

Token Total Supply: 800,000,000,000,000,000.00 Token | Total Token Holders: 66

Squid Dogs Top 100 Token Holders

Source: Etherscan.io



(A total of 799,685,404,531,589,000,000.00 tokens held by the top 100 accounts from the total supply of 800,000,000,000,000,000.00 token)

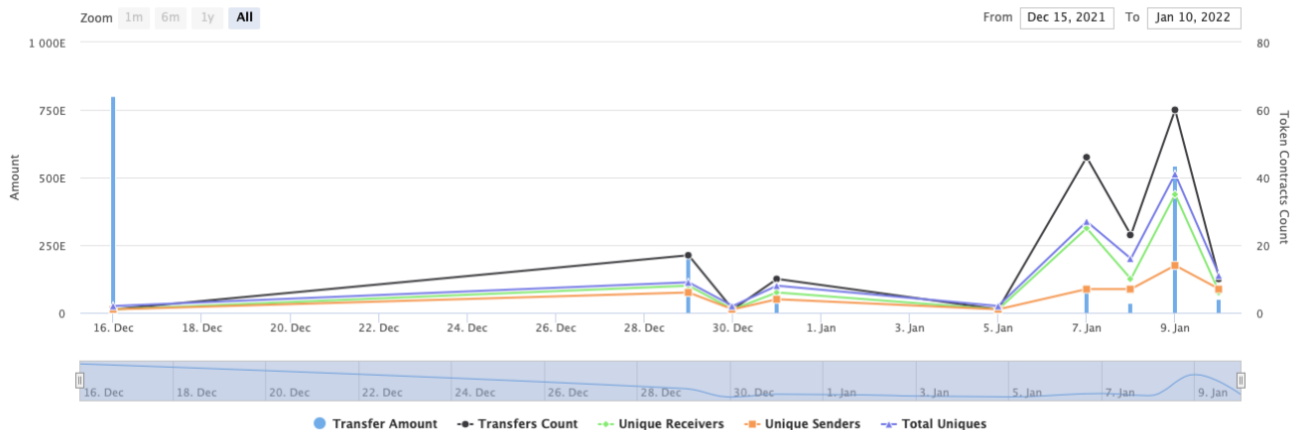
Squid Dogs Contract Interaction Details

Time Series: Token Contract Overview


Thu 16, Dec 2021 - Mon 10, Jan 2022

Token Contract 0x755f0a971f2a3bb2aede78db2cd34170c08b7a41 (Squid Dogs)

Source: Etherscan.io



Squid Dogs Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	 UniCrypt : Token Vesting	550,204,429,440,105,000,000.929379987	68.7756%
2	0x82a1d9e8ce34f3e78628c243669e9e11e0b1e34f	65,759,174,576,246,600,000.889843306	8.2199%
3	 Uniswap V2: SQDDOGS	31,143,141,660,844,400,000.309135988	3.8929%
4	0xa858b5b49a7b2f01b7992f4f0d9d0eb372ef12de	10,000,000,000,000,000,000	1.2500%
5	0x5777b1d50def1b239f642c8d0c66d3b84d2ed4c	10,000,000,000,000,000,000	1.2500%
6	0xd1216316ab5b6379d0e5a642822f09e84752f00c	10,000,000,000,000,000,000	1.2500%
7	0xa808ba1fcae88d9766e4fdfe158b7a24c3a0d9d9	10,000,000,000,000,000,000	1.2500%
8	0xa4ec584467dc69a76445387e066cb5953c13a720	10,000,000,000,000,000,000	1.2500%
9	0x34153ab4a893f78afdb4f86a8d1c32f572836411	9,814,940,828,640,720,000.025466588	1.2269%
10	0x5c6dc51cfb967848fe17cdc97f3fbbc5d8ffbe09	7,282,180,687,089,780,000.847234148	0.9103%



Contract functions details

- + [Int] IERC20
 - [Ext] totalSupply
 - [Ext] balanceOf
 - [Ext] transfer #
 - [Ext] allowance
 - [Ext] approve #
 - [Ext] transferFrom #
- + [Lib] SafeMath
 - [Int] tryAdd
 - [Int] trySub
 - [Int] tryMul
 - [Int] tryDiv
 - [Int] tryMod
 - [Int] add
 - [Int] sub
 - [Int] mul
 - [Int] div
 - [Int] mod
 - [Int] sub
 - [Int] div
 - [Int] mod
- + Context
 - [Int] _msgSender
 - [Int] _msgData
- + [Lib] Address
 - [Int] isContract
 - [Int] sendValue #
 - [Int] functionCall #
 - [Int] functionCall #
 - [Int] functionCallWithValue #
 - [Int] functionCallWithValue #
 - [Int] functionStaticCall
 - [Int] functionStaticCall
 - [Int] functionDelegateCall #
 - [Int] functionDelegateCall #
 - [Prv] _verifyCallResult
- + Ownable (Context)
 - [Pub] <Constructor> #
 - [Pub] owner
 - [Pub] renounceOwnership #
 - modifiers: onlyOwner
 - [Pub] transferOwnership #
 - modifiers: onlyOwner
- + [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 #
- + SquidDogs (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] reflectionFromToken
 - [Pub] tokenFromReflection
 - [Pub] excludeFromReward #
 - modifiers: onlyOwner
 - [Ext] includeInReward #
 - modifiers: onlyOwner
 - [Pub] excludeFromFee #
 - modifiers: onlyOwner
 - [Pub] includeInFee #
 - modifiers: onlyOwner
 - [Prv] removeAllFee #
 - [Prv] restoreAllFee #
 - [Ext] <Fallback> (\$)
 - [Prv] _reflectFee #
 - [Ext] addToBlackList #
 - modifiers: onlyOwner
 - [Ext] removeFromBlackList #
 - modifiers: onlyOwner
 - [Prv] _getValues
 - [Prv] _getTValues
 - [Prv] _getRValues
 - [Prv] _getRate
 - [Prv] _getCurrentSupply
 - [Prv] _takeMarketing #
 - [Prv] calculateTaxFee
 - [Prv] calculateMarketingFee
 - [Pub] isExcludedFromFee
 - [Prv] _approve #
 - [Prv] _transfer #
 - [Prv] setFees #
 - [Prv] SwapAndSend #

- modifiers: lockTheSwap
- [Prv] _tokenTransfer #
- [Prv] _transferStandard #
- [Prv] _transferToExcluded #
- [Prv] _transferFromExcluded #
- [Prv] _transferBothExcluded #
- [Ext] setDefaultMarketingFee #
 - modifiers: onlyOwner
- [Ext] setMarketingFee4Sellers #
 - modifiers: onlyOwner
- [Pub] setFeesOnSellersAndBuyers #
 - modifiers: onlyOwner
- [Pub] setSwapAndSendEnabled #
 - modifiers: onlyOwner
- [Pub] setnumTokensToExchangeForMarketing #
 - modifiers: onlyOwner
- [Ext] _setMarketingWallet #
 - modifiers: onlyOwner
- [Ext] _setMaxTxAmount #
 - modifiers: onlyOwner

(\$) = 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(!_excluded[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:

Check that the excluded array length is not too big.

- The function `addToBlackList()` uses the loop to add addresses from function argument to blacklist. It also could be aborted with `OUT_OF_GAS` exception if there will be a long addresses list.

```
function addToBlackList(address[] calldata addresses↑) external onlyOwner {  
    for (uint256 i; i < addresses↑.length; ++i) {  
        _isBlacklisted[addresses↑[i]] = true;  
    }  
}
```

Recommendation:

Check that the array length is not too big.

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

- Owner can change fees.

```
function setDefaultMarketingFee(uint256 marketingFee↑) external onlyOwner() {
    defaultMarketingFee = marketingFee↑;
}

ftrace | funcSig
function setMarketingFee4Sellers(uint256 marketingFee4Sellers↑) external onlyOwner() {
    _marketingFee4Sellers = marketingFee4Sellers↑;
}

ftrace | funcSig
function setFeesOnSellersAndBuyers(bool _enabled↑) public onlyOwner() {
    feesOnSellersAndBuyers = _enabled↑;
}
```

- Owner can change the maximum transaction amount.

```
function _setMaxTxAmount(uint256 maxTxAmount↑) external onlyOwner() {
    _maxTxAmount = maxTxAmount↑;
}
```

- Owner can remove addresses from blacklist.

```
function removeFromBlackList(address account↑) external onlyOwner {
    _isBlacklisted[account↑] = false;
}
```

- Owner can exclude from the fee.

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

- Owner can change number of tokens to exchange for marketing.

```
function setnumTokensToExchangeForMarketing(uint256 _numTokensToExchangeForMarketing↑) public onlyOwner() {
    numTokensToExchangeForMarketing = _numTokensToExchangeForMarketing↑;
}
```

- Owner can change marketing wallet.

```
function _setMarketingWallet(address payable wallet↑) external onlyOwner() {
    marketingWallet = wallet↑;
}
```

Conclusion

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

Liquidity locking details provided by the team:

<https://app.unicrypt.network/amm/uni-v2/pair/0x05932d6a006b7d5c7ee3123b074febbae841df2b>

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.