Smart Contract Security Audit

Audit details:

Audited project:	SafeJesus
Deployer address:	0x0a9ef5feb961f1ae88c58717ae16a148acd00bb7
Client contacts:	SafeJesus team
Blockchain:	Binance Smart Chain
Project website:	https://www.safejesus.xyz

April, 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 SafeJesus to perform an audit of smart contracts:

- *https://bscscan.com/address/0xa6d4ed4cd70a1d4324cae0cce1d1295ac24451b7#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

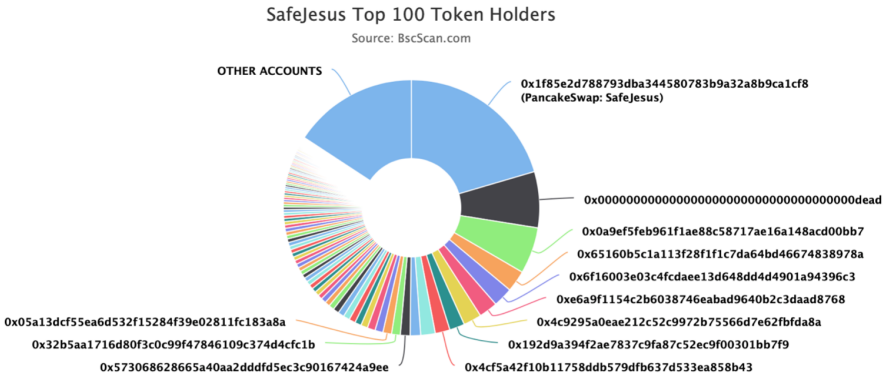
Token contract details for 23.04.2021.

Contract name:	SafeJesus
Contract address:	0xa6d4ed4cd70a1d4324cae0cce1d1295ac24451b7
Total supply:	5_000_000_000_000_000_000
Token ticker:	SafeJesus
Decimals:	9
Token holders:	2069
Transactions count:	4615
Top 100 holders dominance:	84.24 %
Liquidity fee:	3
Tax fee:	3
Total fees:	287_370_241_249_883_830
Uniswap V2 pair:	0x1f85e2d788793dba344580783b9a32a8b9ca1cf8
Contract deployer address:	0x0a9ef5feb961f1ae88c58717ae16a148acd00bb7
Contract’s current owner address:	0x0a9ef5feb961f1ae88c58717ae16a148acd00bb7

SafeJesus token distribution

The top 100 holders collectively own 84.24% (4,211,959,898.47 Tokens) of SafeJesus

Token Total Supply: 5,000,000,000.00 Token | Total Token Holders: 2,069

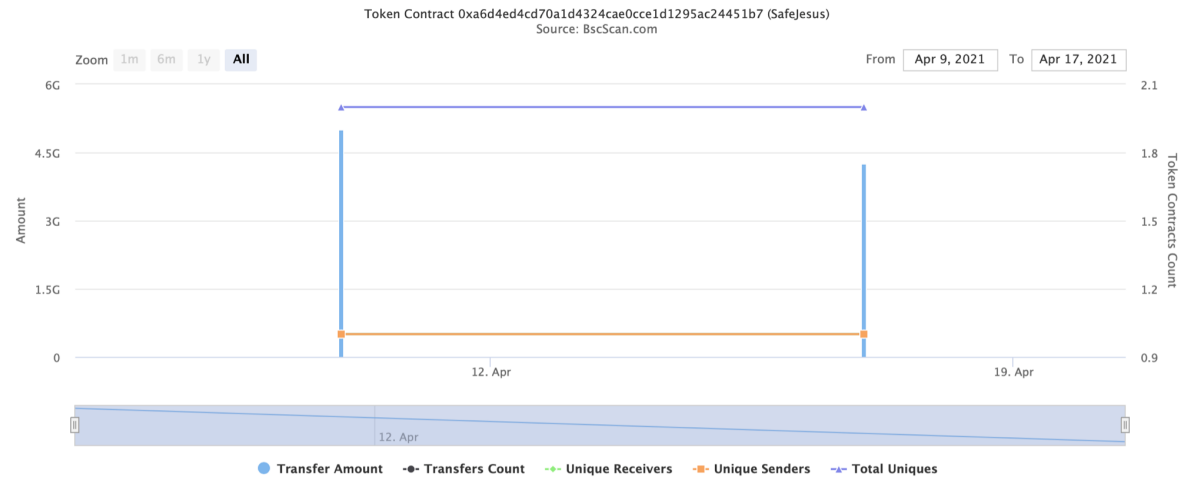


(A total of 4,211,959,898.47 tokens held by the top 100 accounts from the total supply of 5,000,000,000.00 token)

SafeJesus contract interaction details

Time Series: Token Contract Overview

Sat 10, Apr 2021 - Sat 17, Apr 2021



SafeJesus top 10 token holders

Rank	Address	Quantity (Token)	Percentage
1	PancakeSwap: SafeJesus	1,022,316,262.018061094	20.4463%
2	0x000000000000000000000000000000000000dead	354,584,868.877088385	7.0917%
3	0x0a9ef5feb961f1ae88c58717ae16a148acd00bb7	293,654,257.868121604	5.8731%
4	0x65160b5c1a113f28f1f1c7da64bd46674838978a	134,528,204.943759021	2.6906%
5	0x6f16003e03c4fcdaee13d648dd4d4901a94396c3	124,562,871.448395304	2.4913%
6	0xe6a9f1154c2b6038746eabad9640b2c3daad8768	118,659,122.589697696	2.3732%
7	0x4c9295a0eae212c52c9972b75566d7e62fbfda8a	114,479,241.259847367	2.2896%
8	0x192d9a394f2ae7837c9fa87c52ec9f00301bb7f9	95,772,917.721910516	1.9155%
9	0x4cf5a42f10b11758ddb579dfb637d533ea858b43	93,097,619.2148468	1.8620%
10	0xd9e7d3a790867022ba32e7470897cc2bd990ca32	91,406,207.076193385	1.8281%

SafeJesus LP token holders

Rank	Address	Quantity	Percentage
1	0x93813606a9cf31c9fb4d9fc567da964e7e4756f9	16.824025333256589182	84.1910%
2	0x0a9ef5feb961f1ae88c58717ae16a148acd00bb7	3.036605222175387675	15.1958%
3	0x9e2c4933d6228a69149e3011cb1302f3e46a4263	0.1065485820335847	0.5332%
4	0xbba33057dd1cca99371a2e499136cd025f052037	0.0082947763484018	0.0415%
5	0x76eccfaabc586c794706e82f09972e5fc6b3120a	0.004033451381948265	0.0202%
6	0xfc3f7542eafe20e3d6023533a0dcb1145ece1f10	0.00366377697361757	0.0183%
7	0x0000000000000000000000000000000000000000	0.000000000000001	0.0000%

SafeJesus / WBNB liquidity locking on DXSale

SafeJesus / WBNB

SAFEJESUS ADDRESS | LP TOKEN ADDRESS | WBNB ADDRESS

DeFiLaunch Certified Liquidity Locker

236:08:57:59

Total LP Tokens	19.98317114216953
Locked LP Tokens	16.82402533325659
Unlock Date	15 Dec 2021 at 10:00

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)
  - [Int] <Constructor> #
  - [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 #

+ SafeJesus (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
  - [Ext] setMaxTxPercent #
    - modifiers: onlyOwner
  - [Pub] setSwapAndLiquifyEnabled #
    - modifiers: onlyOwner
  - [Ext] <Fallback> ($)
  - [Prv] _reflectFee #
  - [Prv] _getValues
  - [Prv] _getTValues
  - [Prv] _getRValues
  - [Prv] _getRate
  - [Prv] _getCurrentSupply
  - [Prv] _takeLiquidity #
  - [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

- ❏ Owner can change the tax and liquidity fee.
- ❏ Owner can change the maximum transaction amount.
- ❏ Owner can exclude from the fee.

Conclusion

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

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.