



Smart Contract Security Audit

Audit details:

Audited project:	SafeSea
Deployer address:	0xf3911282132cc1cd71258bddd10a9543fb26e20
Client contacts:	SafeSea team
Blockchain:	Binance Smart Chain
Project website:	https://www.safeseaproject.com

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 SafeSea to perform an audit of smart contracts:

- <https://bscscan.com/address/0x3fd6f737a375ae22f522770f563f7ccb48124c42#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 28.04.2021.

Contract name:	SafeSea
Contract address:	0x3fd6f737a375ae22f522770f563f7ccb48124c42
Total supply:	1_000_000_000_000_000_000_000
Token ticker:	SFS
Decimals:	9
Token holders:	1433
Transactions count:	4910
Top 100 holders dominance:	91.26 %
Tax fee:	4 %
Burn fee:	0
Total fees:	123_526_832_119_805_837_204
Contract deployer address:	0xf3911282132cc1cd71258bdddf10a9543fb26e20
Contract's current owner address:	0x00

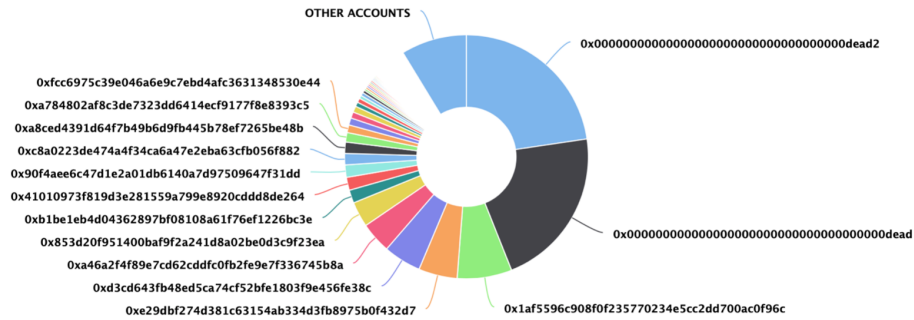
SafeSea token distribution

💡 The top 100 holders collectively own 91.26% (912,643,452,475.54 Tokens) of SafeSea

💡 Token Total Supply: 1,000,000,000,000.00 Token | Total Token Holders: 1,433

SafeSea Top 100 Token Holders

Source: BscScan.com



(A total of 912,643,452,475.54 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000.00 token)

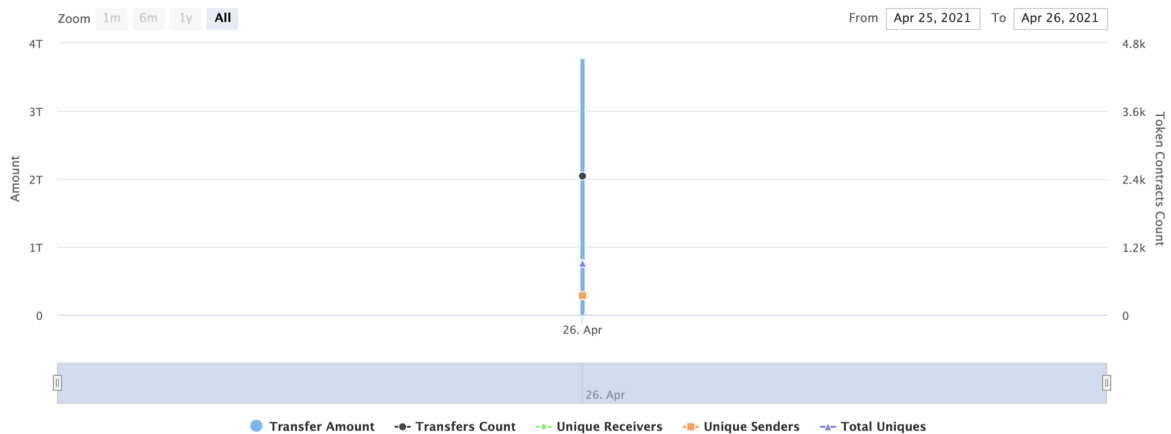
SafeSea contract interaction details

Time Series: Token Contract Overview

Mon 26, Apr 2021 - Mon 26, Apr 2021

Token Contract 0x3fd6f737a375ae22f522770f563f7ccb48124c42 (SafeSea)

Source: BscScan.com



SafeSea top 10 token holders

Rank	Address	Quantity (Token)	Percentage
1	0x000000000000000000000000000000000000dead2	226,584,839,501.662090902	22.6585%
2	0x000000000000000000000000000000000000dead	213,075,060,532.687651331	21.3075%
3	0x1af5596c908f0f235770234e5cc2dd700ac0f96c	72,607,531,320.109629211	7.2608%
4	0xe29dbf274d381c63154ab334d3fb8975b0f432d7	51,460,567,249.354693452	5.1461%
5	0xd3cd643fb48ed5ca74cf52bfe1803f9e456fe38c	50,153,568,469.425805789	5.0154%
6	0xa46a2f4f89e7cd62cddfc0fb2fe9e7f336745b8a	41,007,507,604.159631974	4.1008%
7	0x853d20f951400baf9f2a241d8a02be0d3c9f23ea	33,505,282,612.675237559	3.3505%
8	0xb1be1eb4d04362897bf08108a61f76ef1226bc3e	17,348,485,282.454687189	1.7348%
9	0x41010973f819d3e281559a799e8920cddd8de264	17,303,422,975.640596879	1.7303%
10	0x90f4aee6c47d1e2a01db6140a7d97509647f31dd	16,353,241,903.710642511	1.6353%

Contract functions details

- + Context
 - [Int] _msgSender
 - [Int] _msgData
- + [Int] IBEP20
 - [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)
 - [Int] <Constructor> #
 - [Pub] owner
 - [Pub] renounceOwnership #
 - modifiers: onlyOwner
 - [Pub] transferOwnership #
 - modifiers: onlyOwner
- + SafeSea (Context, IBEP20, 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] isExcluded
- [Pub] totalFees
- [Pub] totalBurn
- [Pub] deliver #
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Ext] excludeAccount #
 - modifiers: onlyOwner
- [Ext] includeAccount #
 - modifiers: onlyOwner
- [Prv] _approve #
- [Prv] _transfer #
- [Prv] _transferStandard #
- [Prv] _transferToExcluded #
- [Prv] _transferFromExcluded #
- [Prv] _transferBothExcluded #
- [Prv] _reflectFee #
- [Prv] _getValues
- [Prv] _getTValues
- [Prv] _getRValues
- [Prv] _getRate
- [Prv] _getCurrentSupply
- [Prv] _getTaxFee
- [Prv] _getMaxTxAmount

(\$) = 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 `includeAccount()` 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 includeAccount(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.

Conclusion

Smart contracts contain only low severity issues.

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.