



TechRate
AUDIT COMPANY

Smart Contract Security Audit

TechRate

November, 2021

Audit Details



Audited project

OpenLive NFT



Deployer address

0x965f0362bc970db82b07944f842049be4a46be97



Client contacts:

OpenLive NFT team



Blockchain

Binance Smart Chain



Project website:

<https://openlivenft.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.

DISCLAIMER: By reading this report or any part of it, you agree to the terms of this disclaimer. If you do not agree to the terms, then please immediately cease reading this report, and delete and destroy any and all copies of this report downloaded and/or printed by you. This report is provided for information purposes only and on a non-reliance basis, and does not constitute investment advice. No one shall have any right to rely on the report or its contents, and TechRate and its affiliates (including holding companies, shareholders, subsidiaries, employees, directors, officers and other representatives) (TechRate) owe no duty of care towards you or any other person, nor does TechRate make any warranty or representation to any person on the accuracy or completeness of the report. The report is provided "as is", without any conditions, warranties or other terms of any kind except as set out in this disclaimer, and TechRate hereby excludes all representations, warranties, conditions and other terms (including, without limitation, the warranties implied by law of satisfactory quality, fitness for purpose and the use of reasonable care and skill) which, but for this clause, might have effect in relation to the report. Except and only to the extent that it is prohibited by law, TechRate hereby excludes all liability and responsibility, and neither you nor any other person shall have any claim against TechRate, for any amount or kind of loss or damage that may result to you or any other person (including without limitation, any direct, indirect, special, punitive, consequential or pure economic loss or damages, or any loss of income, profits, goodwill, data, contracts, use of money, or business interruption, and whether in delict, tort (including without limitation negligence), contract, breach of statutory duty, misrepresentation (whether innocent or negligent) or otherwise under any claim of any nature whatsoever in any jurisdiction) in any way arising from or connected with this report and the use, inability to use or the results of use of this report, and any reliance on this report.

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 OpenLive NFT to perform an audit of smart contracts:

<https://bscscan.com/address/0x93C4A5d89D3a5DCc3b17395F0C730E9e0cA0763D#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 10.11.2021

Contract name	OpenLive NFT
Contract address	0x93C4A5d89D3a5DCc3b17395F0C730E9e0cA0763D
Total supply	200,000,000
Token ticker	OPV
Decimals	18
Token holders	1
Transactions count	1
Top 100 holders dominance	100.0000%
Fee wallet	0x965f0362bc970db82b07944f842049be4a46be97
Transfer fee	10
Percent divider	1000
Uniswap V2 pair	0xa19ff40176ec0d4b041801f430f23e66076de700
Contract deployer address	0x965f0362bc970db82b07944f842049be4a46be97
Contract's current owner address	0x965f0362bc970db82b07944f842049be4a46be97

OpenLive NFT Token Distribution

The top 100 holders collectively own 100.00% (200,000,000.00 Tokens) of OpenLive NFT

Token Total Supply: 200,000,000.00 Token | Total Token Holders: 1

OpenLive NFT Top 100 Token Holders

Source: BscScan.com



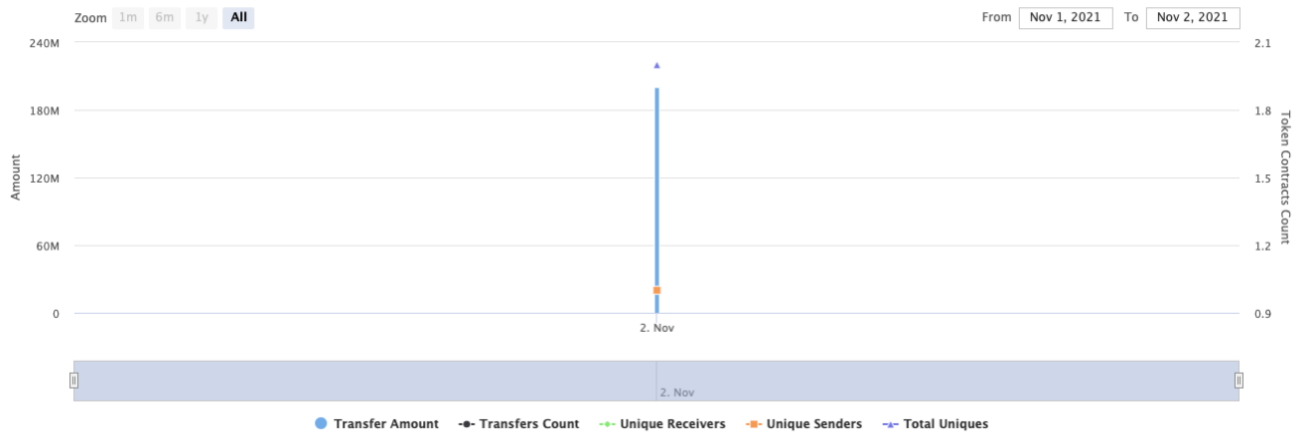
(A total of 200,000,000.00 tokens held by the top 100 accounts from the total supply of 200,000,000.00 token)

OpenLive NFT Contract Interaction Details

Time Series: Token Contract Overview

Tue 2, Nov 2021 - Tue 2, Nov 2021

Token Contract 0x93C4A5d89D3a5DCc3b17395F0C730E9e0cA0763D (OpenLive NFT)
Source: BscScan.com



OpenLive NFT Top 10 Token Holders

Rank	Address	Quantity (Token)	Percent
1.	0x965f0362bc970db82b07944f842049be4a46be97	200,000,000	100.0000%



Contract functions details

+ [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 #
- + Context
- [Int] _msgSender
 - [Int] _msgData
- + ERC20 (Context, IERC20, Ownable)
- [Int] _initialize #
 - [Pub] name
 - [Pub] symbol
 - [Pub] decimals
 - [Pub] totalSupply
 - [Pub] balanceOf
 - [Pub] transfer #
 - [Pub] allowance
 - [Pub] approve #
 - [Pub] transferFrom #
 - [Pub] increaseAllowance #
 - [Pub] decreaseAllowance #
 - [Int] _transfer #
 - [Int] _mint #
 - [Int] _burn #
 - [Int] _approve #
 - [Int] _setupDecimals #
 - [Int] _beforeTokenTransfer #
 - [Pub] mint #
 - modifiers: onlyOwner
 - [Pub] enableMint #
 - modifiers: onlyOwner
 - [Pub] modifyWhiteListSender #
 - modifiers: onlyOwner
 - [Pub] isExcludedFromFee
 - [Pub] modifyWhiteListReceiver #
 - modifiers: onlyOwner
 - [Pub] isExcludedToFee
 - [Pub] modifyBlackList #
 - modifiers: onlyOwner
 - [Pub] isBlackList
 - [Ext] setAntiBot #
 - modifiers: onlyOwner
 - [Ext] setSwapWhiteList #
 - modifiers: onlyOwner
 - [Pub] transferToken #

- modifiers: onlyOwner
- [Pub] modifyWhiteListBot #
 - modifiers: onlyOwner
- [Pub] isExcludedFromBot
- [Pub] changeFeeWallet #
 - modifiers: onlyOwner
- [Pub] changeFee #
 - modifiers: onlyOwner
- [Pub] modifyWhiteListPool #
 - modifiers: onlyOwner
- [Pub] isExcludedFromPool

+ [Int] IERC20

- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] transfer #
- [Ext] allowance
- [Ext] approve #
- [Ext] transferFrom #

+ Ownable (Context)

- [Pub] <Constructor> #
- [Pub] owner
- [Pub] renounceOwnership #
 - modifiers: onlyOwner
- [Pub] transferOwnership #
 - modifiers: onlyOwner
- [Pub] geUnlockTime
- [Pub] lock #
 - modifiers: onlyOwner
- [Pub] unlock #

+ [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

+ [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

+ Token (ERC20)

- [Pub] <Constructor> #
- [Pub] burn #
- [Int] _transfer #
- [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 `modifyWhiteListSender()`, `modifyWhiteListReceiver()`, `modifyBlackList()`, `modifyWhiteListBot()`, `modifyWhiteListPool()` uses the loop to iterate through lists from the argument. Functions will be aborted with `OUT_OF_GAS` exception if there will be a long addresses list in the function argument.

Recommendation:

Check that the arrays' length is not too big.

Notes:

- Transfer function may have feeless transfer in else block like in `transferFrom` function.

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

- Owner can mint.
- Owner can enable/disable mint.
- Owner can enable/disable antibot and swap whitelist.
- Owner can change fee value and wallet address.
- 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.