



TechRate
AUDIT COMPANY

Smart Contract Security Audit

Audit Details



Audited project

LONDEX



Deployer address

0xd1c61e718cd00d5a976ac8ea1055b0e9f4371472



Client contacts:

LONDEX team



Blockchain

Binance Smart Chain



Project website:

<https://londex.io/>

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 LONDEX to perform an audit of smart contracts:

<https://bscscan.com/address/0x2089f0cbe8aca0950fa8c5bb04ade2323aee832f#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 17.10.2021

Contract name	LONDEX
Contract address	0x2089F0CbE8Aca0950FA8c5Bb04ADe2323AEE832F
Total supply	2,000,000,000,000
Token ticker	LDX
Decimals	9
Token holders	5,594
Transactions count	18,140
Top 100 holders dominance	90.54%
Autoliquidity receiver	0xd1c61e718cd00d5a976ac8ea1055b0e9f4371472
Marketing fee receiver	0x3f90e4963c99337ad5c80ba8b57e2008fc00c72e
Total fee	13
Uniswap V2 pair	0x727fd366ac94e5cfdc987a0b0a0ed11456f0c52d
Contract deployer address	0xd1c61e718cd00d5a976ac8ea1055b0e9f4371472
Contract's current owner address	0xd1c61e718cd00d5a976ac8ea1055b0e9f4371472

💡 The top 100 holders collectively own 90.54% (1,810,768,499,942.77 Tokens) of LONDEX

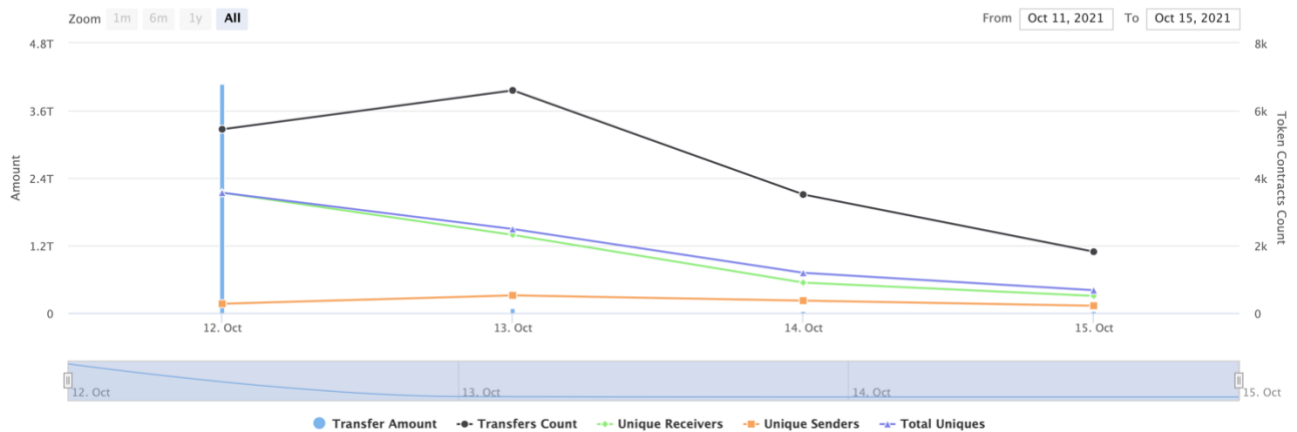
LONDEX Top 100 Token Holders

OTHER ACCOUNTS


(A total of 1,810,768,499,942.77 tokens held by the top 100 accounts from the total supply of 2,000,000,000,000.00 token)

Time Series: Token Contract Overview

Token Contract 0x2089f0cbe8aca0950fa8c5bb04ade2323aee832f (LONDEX)
Source: BscScan.com



LONDEX Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Burn Address	984,770,850,207.449951172	49.2385%
2	 PancakeSwap V2: LDX 16	81,514,901,676.796415208	4.0757%
3	0x5cb6fd9f3c6619f16f7f8f13451aa8815d3718e3	30,280,533,614.25	1.5140%
4	0x2ad69c22fcc65a319724c82b9eae49670306a728	25,236,552,735.55859902	1.2618%
5	0x1a3ca897cf4ad055ccc1b303335500481c774732	23,285,735,481.20029579	1.1643%
6	0xd062842a2af104f4c6698f094a27ceb07bc0b68b	21,512,607,294.455	1.0756%
7	0x8331d33417c560c35b65f9e97ed23e2c7e54fa15	21,356,222,854.28	1.0678%
8	0x426ee637943d044196b4e8752ac2023181731c92	20,021,204,798.009558186	1.0011%
9	0x736d4dfae47e586bc8c79a0bb9fa0b1b8f91d8ef	20,007,430,679.387912347	1.0004%
10	0x40a91af76f8cdf24aa978b91c71ad8387c4e6d20	19,999,854,995.455	1.0000%



Contract functions details

+ [Lib] SafeMath

- [Int] add
- [Int] sub
- [Int] sub
- [Int] mul
- [Int] div
- [Int] div

+ [Int] IBEP20

- [Ext] totalSupply
- [Ext] decimals
- [Ext] symbol
- [Ext] name
- [Ext] getOwner
- [Ext] balanceOf
- [Ext] transfer #
- [Ext] allowance
- [Ext] approve #
- [Ext] transferFrom #

+ Auth

- [Pub] <Constructor> #
- [Pub] authorize #
 - modifiers: onlyOwner
- [Pub] unauthorize #
 - modifiers: onlyOwner
- [Pub] isOwner
- [Pub] isAuthorized
- [Pub] transferOwnership #
 - modifiers: onlyOwner

+ [Int] IDEXFactory

- [Ext] createPair #

+ [Int] IDEXRouter

- [Ext] factory
- [Ext] WETH
- [Ext] addLiquidity #
- [Ext] addLiquidityETH (\$)
- [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
- [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens (\$)
- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

+ [Int] IDividendDistributor

- [Ext] setDistributionCriteria #
- [Ext] setShare #
- [Ext] deposit (\$)
- [Ext] process #

+ DividendDistributor (IDividendDistributor)

- [Pub] <Constructor> #

- [Ext] setDistributionCriteria #
 - modifiers: onlyToken
- [Ext] setShare #
 - modifiers: onlyToken
- [Ext] deposit (\$)
 - modifiers: onlyToken
- [Ext] process #
 - modifiers: onlyToken
- [Int] shouldDistribute
- [Int] distributeDividend #
- [Ext] claimDividend #
- [Pub] getUnpaidEarnings
- [Int] getCumulativeDividends
- [Int] addShareholder #
- [Int] removeShareholder #

+ LONDEX (IBEP20, Auth)

- [Pub] <Constructor> #
 - modifiers: Auth
- [Ext] <Fallback> (\$)
- [Ext] totalSupply
- [Ext] decimals
- [Ext] symbol
- [Ext] name
- [Ext] getOwner
- [Pub] balanceOf
- [Ext] allowance
- [Pub] approve #
- [Ext] approveMax #
- [Ext] transfer #
- [Ext] transferFrom #
- [Ext] setMaxWalletPercent_base1000 #
 - modifiers: onlyOwner
- [Ext] setMaxTxPercent_base1000 #
 - modifiers: onlyOwner
- [Ext] setTxLimit #
 - modifiers: authorized
- [Int] _transferFrom #
- [Int] _basicTransfer #
- [Int] checkTxLimit
- [Int] shouldTakeFee
- [Int] takeFee #
- [Int] shouldSwapBack
- [Ext] clearStuckBalance #
 - modifiers: authorized
- [Ext] clearStuckBalance_sender #
 - modifiers: authorized
- [Ext] set_sell_multiplier #
 - modifiers: onlyOwner
- [Pub] tradingStatus #
 - modifiers: onlyOwner
- [Pub] cooldownEnabled #
 - modifiers: onlyOwner
- [Int] swapBack #
 - modifiers: swapping

- [Ext] setIssDividendExempt #
 - modifiers: authorized
- [Pub] enable_blacklist #
 - modifiers: onlyOwner
- [Pub] manage_blacklist #
 - modifiers: onlyOwner
- [Ext] setIssFeeExempt #
 - modifiers: authorized
- [Ext] setIssTxLimitExempt #
 - modifiers: authorized
- [Ext] setIssTimelockExempt #
 - modifiers: authorized
- [Ext] setFees #
 - modifiers: authorized
- [Ext] setFeeReceivers #
 - modifiers: authorized
- [Ext] setSwapBackSettings #
 - modifiers: authorized
- [Ext] setTargetLiquidity #
 - modifiers: authorized
- [Ext] setDistributionCriteria #
 - modifiers: authorized
- [Ext] setDistributorSettings #
 - modifiers: authorized
- [Pub] getCirculatingSupply
- [Pub] getLiquidityBacking
- [Pub] isOverLiquified
- [Ext] multiTransfer #
 - modifiers: onlyOwner
- [Ext] multiTransfer_fixed #
 - 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 `manage_blacklist()` uses the loop to change blacklist status of addresses. It also could be aborted with `OUT_OF_GAS` exception if there will be a long addresses list.

Recommendation:

Check that the array length is not too big.

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

- Owner can change `_maxWalletToken` and `_maxTxAmount`.
- Owner can change `sellMultiplier`.
- Owner can change trading.
- Owner can change blacklist mode.
- Owner can change `maxRoomRent` value.
- Owner can change cooldown settings.
- Owner can multiTransfer fixed and listed token amounts.
- Authorized addresses can withdraw contract BNBs.
- Authorized addresses can include in and exclude from dividends.
- Authorized addresses can include in and exclude from fee, timelock and transaction amount.
- Authorized addresses can change fees.
- Authorized addresses can change fee receivers.
- Authorized addresses can change swap threshold and disable/enable swap.
- Authorized addresses can change `targetLiquidity`.
- Authorized addresses can change distribution criteria.
- Authorized addresses can change distribution GAS.

Conclusion

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

Liquidity locking details provided by the team:

<https://dxsale.app/app/v3/dxlockview?id=0&add=0xD1C61e718cD00D5A976ac8Ea1055B0E9F4371472&type=lplock&chain=BSC>

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.

