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AUDIT COMPANY

Smart Contract Security Audit

TechRate

August, 2021

Audit Details

Audited project

Lwazi Project

Deployer address

0xe72f9F17A5F56c2fb071B25160EA1a7012ab8eeA

Client contacts:

Lwazi Project team

Blockchain

Ethereum

Project website:

https://lwazitoken.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.

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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 Lwazi Project to perform an audit of smart contracts:

https://etherscan.io/address/0x2495a57f6f5bfebf381f8dd70b1ad19c1972b1ee#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

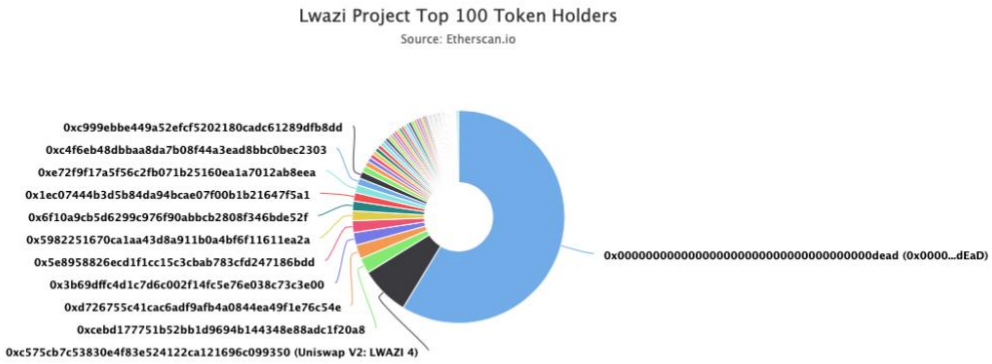
Token contract details for 07.08.2021

Contract name	Lwazi Project
Contract address	0x2495A57f6F5bfebf381F8dd70B1AD19c1972b1EE
Total supply	1,000,000,000,000
Token ticker	LWAZI
Decimals	9
Token holders	89
Transactions count	651
Top 100 holders dominance	99.68%
Buyback Dev Fee	12
Tax fee	3
Total fees	32132610700311028999
Uniswap V2 pair	0xc575cb7c53830e4f83e524122ca121696c099350
Contract deployer address	0xe72f9F17A5F56c2fb071B25160EA1a7012ab8eeA
Contract's current owner address	0xe72f9F17A5F56c2fb071B25160EA1a7012ab8eeA

Lwazi Project Token Distribution

The top 100 holders collectively own 99.68% (996,772,249,984.18 Tokens) of Lwazi Project

Token Total Supply: 1,000,000,000,000.00 Token | Total Token Holders: 89

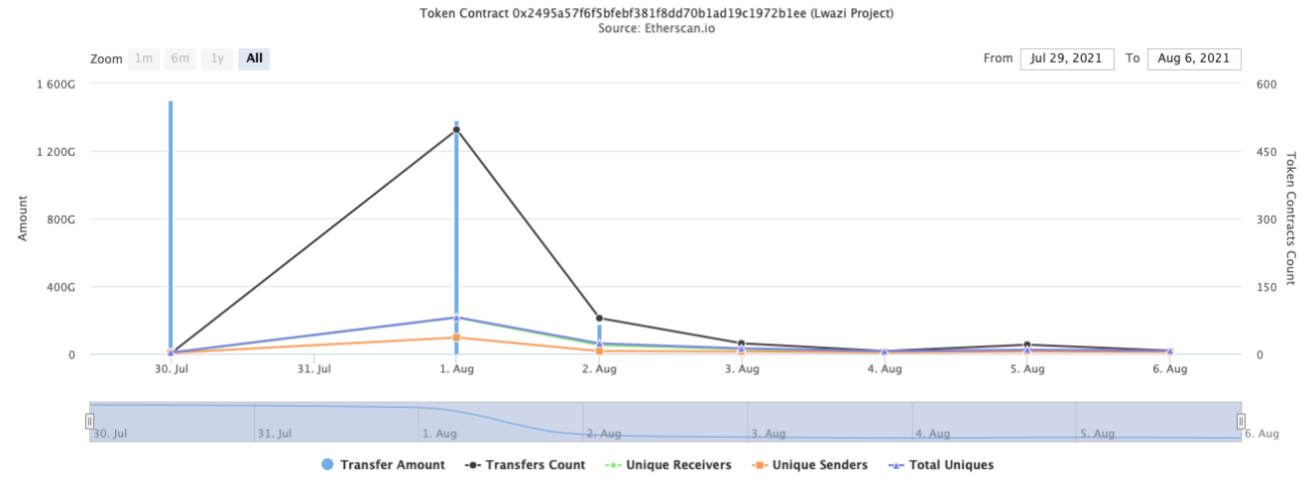


(A total of 996,772,249,984.18 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000.00 token)

Lwazi Project Contract Interaction Details

Time Series: Token Contract Overview

Fri 30, Jul 2021 - Fri 6, Aug 2021



Lwazi Project Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	0x0000...dEaD	587,280,264,117.036225253	58.7280%
2	Uniswap V2: LWAZI 4	75,074,749,065.419856567	7.5075%
3	0xcebd177751b52bb1d9694b144348e88adc1f20a8	23,424,717,939.095612409	2.3425%
4	0xd726755c41cac6adf9afb4a0844ea49f1e76c54e	21,325,760,246.410578214	2.1326%
5	0x3b69dffc4d1c7d6c002f14fc5e76e038c73c3e00	19,197,886,959.116143365	1.9198%
6	0x5e8958826ecd1f1cc15c3cbab783cfd247186bdd	17,916,628,914.058480024	1.7917%
7	0x5982251670ca1aa43d8a911b0a4bf6f11611ea2a	14,909,425,226.434927297	1.4909%
8	0x6f10a9cb5d6299c976f90abbcb2808f346bde52f	14,879,463,504.250792786	1.4879%
9	0x1ec07444b3d5b84da94bcae07f00b1b21647f5a1	12,753,347,544.487973977	1.2753%
10	0xe72f9f17a5f56c2fb071b25160ea1a7012ab8eea	12,001,234,883.855617127	1.2001%

Contract functions details

+ [Int] IBEP20
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transferFrom #

+ Context
  - [Int] _msgSender
  - [Int] _msgData

+ Ownable (Context)
  - [Pub] <Constructor> #
  - [Pub] owner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner

+ [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

+ [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 #

+ [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 #

+ AbstractDeflationaryToken (Context, IBEP20, Ownable)
  - [Pub] <Constructor> #
  - [Ext] name
  - [Ext] symbol

- [Ext] decimals
- [Ext] totalSupply
- [Ext] transfer #
- [Ext] allowance
- [Ext] approve #
- [Ext] transferFrom #
- [Ext] increaseAllowance #
- [Ext] decreaseAllowance #
- [Ext] isExcludedFromReward
- [Ext] isExcludedFromFee
- [Ext] totalFees
- [Ext] deliver #
- [Ext] excludeFromFee #
  - modifiers: onlyOwner
- [Ext] includeInFee #
  - modifiers: onlyOwner
- [Ext] setTaxHolderFeePercent #
  - modifiers: onlyOwner
- [Ext] setMaxTxPercent #
  - modifiers: onlyOwner
- [Pub] excludeFromReward #
  - modifiers: onlyOwner
- [Pub] includeInReward #
  - modifiers: onlyOwner
- [Pub] balanceOf
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Int] _reflectHolderFee #
- [Int] _getRate
- [Int] _approve #
- [Int] _getFeesArray
- [Int] _getTransferAmount
- [Int] _recalculateRewardPool #
- [Int] _transfer #
- [Int] _tokenTransfer #

+ AbstractBurnableDeflToken (AbstractDeflationaryToken)
  - [Ext] burn #

+ AbstractDeflationaryAutoLPToken (AbstractDeflationaryToken)
  - [Pub] <Constructor> #
    - modifiers: AbstractDeflationaryToken
  - [Ext] <Fallback> ($)
  - [Ext] setLiquidityFeePercent #
    - modifiers: onlyOwner
  - [Ext] setNumTokensSellToAddToLiquidity #
    - modifiers: onlyOwner
  - [Ext] setSwapAndLiquifyEnabled #
    - modifiers: onlyOwner
  - [Ext] setLiquidityOwner #
    - modifiers: onlyOwner
  - [Int] _takeLiquidity #
  - [Int] _getTransferAmount
  - [Int] _recalculateRewardPool #
  - [Int] _transfer #

```
  - [Int] _swapAndLiquify #
  - [Int] _swapTokensForEth #
  - [Int] _addLiquidity #
  - [Int] _getFeesArray
  - [Int] _tokenTransfer #

+ DeflationaryAutoLPToken (AbstractDeflationaryAutoLPToken)
  - [Pub] <Constructor> #
    - modifiers: AbstractDeflationaryAutoLPToken
  - [Ext] withdrawStuckFunds #
    - modifiers: onlyOwner
  - [Int] _swapAndLiquify #
    - modifiers: lockTheSwap
  - [Int] _swapTokensForEth #
  - [Int] _addLiquidity #

+ FeeToAddress (Ownable)
  - [Ext] setToAddressFee #
    - modifiers: onlyOwner
  - [Ext] setFeeBeneficiary #
    - modifiers: onlyOwner

+ FeeToAddrDeflAutoLPToken (DeflationaryAutoLPToken, FeeToAddress)
  - [Pub] <Constructor> #
    - modifiers: DeflationaryAutoLPToken
  - [Int] _getFeesArray
  - [Int] _tokenTransfer #

+ MOM (FeeToAddrDeflAutoLPToken, AbstractBurnableDeflToken)
  - [Pub] <Constructor> #
    - modifiers: FeeToAddrDeflAutoLPToken
  - [Ext] totalSupply

($) = payable function
# = non-constant function

→ AUDITS git:(main) ✗ surya describe Farhad/AUDITED/Lwazi\
Project/Update/Lwazi\ Project.sol
+ Context
  - [Int] _msgSender
  - [Int] _msgData

+ [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

+ [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

+ [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 #

+ Lwazi (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] isExcluded
- [Ext] setExcludeFromFee #
  - modifiers: onlyOwner
- [Pub] totalFees
- [Pub] deliver #
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Ext] excludeAccount #
  - modifiers: onlyOwner
- [Ext] includeAccount #

    - modifiers: onlyOwner
  - [Prv] removeAllFee #
  - [Prv] restoreAllFee #
  - [Pub] isExcludedFromFee
  - [Prv] _approve #
  - [Prv] _transfer #
  - [Prv] swapTokensForEth #
    - modifiers: lockTheSwap
  - [Prv] sendETHToBuybackDev #
  - [Ext] manualSwapContractTokensForETH #
    - modifiers: onlyOwner
  - [Ext] manualSendContractEthToBuybackDev #
    - modifiers: onlyOwner
  - [Prv] _tokenTransfer #
  - [Prv] _transferStandard #
  - [Prv] _transferToExcluded #
  - [Prv] _transferFromExcluded #
  - [Prv] _transferBothExcluded #
  - [Prv] _takeBuybackDev #
  - [Prv] _reflectFee #
  - [Ext] <Fallback> ($)
  - [Prv] _getValues
  - [Prv] _getTValues
  - [Prv] _getRValues
  - [Prv] _getRate
  - [Prv] _getCurrentSupply
  - [Prv] _getTaxFee
  - [Prv] _getMaxTxAmount
  - [Pub] _getETHBalance
  - [Ext] setMaxTxPercent #
    - 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.	Passed
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

No low severity issues found.

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

- Owner can change the maximum transaction amount.

```
function setMaxTxPercent(uint256 maxTxPercent) external onlyOwner() {
    _maxTxAmount = _tTotal.mul(maxTxPercent).div(
        10**2
    );
}
```

- Owner can exclude from the fee.

```
function setExcludeFromFee(address account, bool excluded) external onlyOwner() {
    _isExcludedFromFee[account] = excluded;
}
```

- Owner can manually swap and send buyback dev amount.

```
ftrace | funcSig
function manualSwapContractTokensForETH() external onlyOwner() {
    uint256 contractBalance = balanceOf(address(this));
    swapTokensForEth(contractBalance);
}
ftrace | funcSig
function manualSendContractEthToBuybackDev() external onlyOwner() {
    uint256 contractETHBalance = address(this).balance;
    sendETHToBuybackDev(contractETHBalance);
}
```

Conclusion

Smart contracts do not contain high 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.