Cyberscope

# Audit Report

# Luzion Protocol

April 2022

| | |
|---|---|
| Network | BSC |
| Address | 0x291C4e4277F8717e0552D108dBd7f795a9fEF016 |
| Audited by | © cyberscope |

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# Contract Review

| | |
|---|---|
| **Contract Name** | LuzionProtocol |
| **Compiler Version** | v0.8.13+commit.abaa5c0e |
| **Optimization** | 200 runs |
| **Licence** | MIT |
| **Explorer** | https://bscscan.com/token/0x291C4e4277F8717e0552D108dBd7f795a9fEF016 |
| **Symbol** | LZN |
| **Decimals** | 5 |
| **Total Supply** | 325,000 |
| **Domain** | |

# Source Files

| **Filename** | **SHA256** |
|---|---|
| **contract.sol** | e6d6bb0d549743fcca17b085edde55c7e333a115cac6c400d5ce85aaf73319a7 |

# Audit Updates

| | |
|---|---|
| **Initial Audit** | 11th April 2022 |
| **Corrected** | |

# Contract Analysis

Critical Medium Minor Pass

| Severity | Code | Description |
|---|---|---|
| ● | ST | Contract Owner is not able to stop or pause transactions |
| ● | OCTD | Contract Owner is not able to transfer tokens from specific address |
| ● | OTUT | Owner Transfer User's Tokens |
| ● | ELFM | Contract Owner is not able to increase fees more than a reasonable percent (25%) |
| ● | ULTW | Contract Owner is not able to increase the amount of liquidity taken by dev wallet more than a reasonable percent |
| ● | MT | Contract Owner is not able to mint new tokens |
| ● | BT | Contract Owner is not able to burn tokens from specific wallet |
| ● | BC | Contract Owner is not able to blacklist wallets from selling |

# Contract Diagnostics

Critical Medium Minor

| Severity | Code | Description |
|---|---|---|
| | MTS | Manipulate Total Supply |
| | CO | Code Optimization |
| | L01 | Public Function could be Declared External |
| | L04 | Conformance to Solidity Naming Conventions |
| | L09 | Dead Code Elimination |
| | L13 | Divide before Multiply Operation |
| | L15 | Local Scope Variable Shadowing |

# MTS - Manipulate Total Supply

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L1529 |

## Description

Owner is able to manipulate total supply. This change will have a direct impact on the token price and Market Cap.

```
for (uint256 i = 0; i < times; i++) {
    supplyTotal =
supplyTotal.mul((10**rateDecimals).add(rebaseRate)).div(10**rateDecimals);
}
```

## Recommendation

The contract owner should carefully manage the adjustment of the circulating supply (increases or decreases), according to the token’s price fluctuations.

# CO - Code Optimization

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L1519 |

## Description

There are code segments that could be optimized. A segment may be optimized so that it becomes a smaller size, consumes less memory, executes more rapidly, or performs fewer operations.

```
if (deltaTimeFromInit < (365 days)) {
    rebaseRate = 2355;
} else if (deltaTimeFromInit >= (365 days) && deltaTimeFromInit < ((15 * 365
days) / 10)) {
    rebaseRate = 211;
} else if (deltaTimeFromInit >= ((15 * 365 days) / 10) && deltaTimeFromInit < (7
* 365 days)) {
    rebaseRate = 14;
} else if (deltaTimeFromInit >= (7 * 365 days)) {
    rebaseRate = 2;
}
```

## Recommendation

If the `if` statements are reversed, then the result will be the same but the total expressions will be decreased.

1. If `deltaTimeFromInit < (365 days)`
2. If `deltaTimeFromInit >= (7 * 365 days)`
3. If `deltaTimeFromInit >= ((15 * 365 days) / 10)`
4. else

# L01 - Public Function could be Declared External

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L338,345,352,370,378,562,570,587,594,613,636,658,677,697,1936,1943 |

## Description

Public functions that are never called by the contract should be declared external to save gas.

```
setDividendDistributor
distributorInitialization
decreaseAllowance
increaseAllowance
transferFrom
approve
transfer
totalSupply
decimals
...
```

## Recommendation

Use the external attribute for functions never called from the contract

# L04 - Conformance to Solidity Naming Conventions

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L890,892,906,959,1097,1120,1128,1052,1435,1444,1467,1479,1491,1499,1545,1680,1689,1696,1715,1728,1739,1865,1903,1952,1991,2003,1333,1334,1335,1336,1337 |

## Description

Solidity defines a naming convention that should be followed. Rule exceptions:

- Allow constant variable name/symbol/decimals to be lowercase.
- Allow _ at the beginning of the mixed_case match for private variables and unused parameters.

```
_allowedFragments
_gonBalances
_isDividendExempt
_isFeeExempt
_blacklistBotContract
_denominator
_target
_flag
_minDistribution
...
```

## Recommendation

Follow the Solidity naming convention.
https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions

# L09 - Dead Code Elimination

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L859,803,843,773,750,819,722 |

## Description

Functions that are not used in the contract, and make the code's size bigger.

```
_transfer
_spendAllowance
_mint
_burn
_beforeTokenTransfer
_approve
_afterTokenTransfer
```

## Recommendation

Remove unused functions.

# L13 - Divide before Multiply Operation

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L1358,1491,1508,1625,1983 |

## Description

Performing divisions before multiplications may cause lose of prediction.

```
liquidityBalance = _gonBalances[pair].div(gonsPerFragment)
autoLiquidityAmount = _gonBalances[address(this)].div(gonsPerFragment)
times = deltaTime.div(900)
gonSwapThreshold = gonsTotal.div(_denominator).mul(_numerator)
gonSwapThreshold = gonsTotal.div(10000).mul(10)
```

## Recommendation

The multiplications should be prior to the divisions.

# L15 - Local Scope Variable Shadowing

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L1689 |

## Description

The are variables that are defined in the local scope containing the same name from an upper scope.

```
_owner
```

## Recommendation

The local variables should have different names from the upper scoped variables.

# Contract Functions

| Contract | Type | Bases | | |
|---|---|---|---|---|
| | Function Name | Visibility | Mutability | Modifiers |
| | | | | |
| **SafeMath** | Library | | | |
| | tryAdd | Internal | | |
| | trySub | Internal | | |
| | tryMul | Internal | | |
| | tryDiv | Internal | | |
| | tryMod | Internal | | |
| | add | Internal | | |
| | sub | Internal | | |
| | mul | Internal | | |
| | div | Internal | | |
| | mod | Internal | | |
| | sub | Internal | | |
| | div | Internal | | |
| | mod | Internal | | |
| | | | | |
| **Context** | Implementation | | | |
| | _msgSender | Internal | | |
| | _msgData | Internal | | |
| | _msgValue | Internal | | |
| | | | | |
| **Ownable** | Implementation | Context | | |
| | <Constructor> | Public | ✓ | - |
| | owner | Public | | - |
| | authorize | Public | ✓ | onlyOwner |
| | unauthorize | Public | ✓ | onlyOwner |
| | isOwner | Public | | - |
| | isAuthorized | Public | | - |
| | renounceOwnership | Public | ✓ | onlyOwner |
| | transferOwnership | Public | ✓ | onlyOwner |

| | | | | |
|---|---|---|---|---|
| | _transferOwnership | Internal | ✓ | |
| | | | | |
| **IERC20Extended** | Interface | | | |
| | name | External | | - |
| | symbol | External | | - |
| | decimals | External | | - |
| | totalSupply | External | | - |
| | balanceOf | External | | - |
| | transfer | External | ✓ | - |
| | allowance | External | | - |
| | approve | External | ✓ | - |
| | transferFrom | External | ✓ | - |
| | | | | |
| **ERC20** | Implementation | Context, IERC20Extended | | |
| | <Constructor> | Public | ✓ | - |
| | name | Public | | - |
| | symbol | Public | | - |
| | decimals | Public | | - |
| | totalSupply | Public | | - |
| | balanceOf | Public | | - |
| | transfer | Public | ✓ | - |
| | allowance | Public | | - |
| | approve | Public | ✓ | - |
| | transferFrom | Public | ✓ | - |
| | increaseAllowance | Public | ✓ | - |
| | decreaseAllowance | Public | ✓ | - |
| | _transfer | Internal | ✓ | |
| | _mint | Internal | ✓ | |
| | _burn | Internal | ✓ | |
| | _approve | Internal | ✓ | |
| | _spendAllowance | Internal | ✓ | |
| | _beforeTokenTransfer | Internal | ✓ | |
| | _afterTokenTransfer | Internal | ✓ | |

| | | | | |
|---|---|---|---|---|
| **IUniswapV2Pair** | Interface | | | |
| | name | External | | - |
| | symbol | External | | - |
| | decimals | External | | - |
| | totalSupply | External | | - |
| | balanceOf | External | | - |
| | allowance | External | | - |
| | approve | External | ✓ | - |
| | transfer | External | ✓ | - |
| | transferFrom | External | ✓ | - |
| | DOMAIN_SEPARATOR | External | | - |
| | PERMIT_TYPEHASH | External | | - |
| | nonces | External | | - |
| | permit | External | ✓ | - |
| | MINIMUM_LIQUIDITY | External | | - |
| | factory | External | | - |
| | token0 | External | | - |
| | token1 | External | | - |
| | getReserves | External | | - |
| | price0CumulativeLast | External | | - |
| | price1CumulativeLast | External | | - |
| | kLast | External | | - |
| | mint | External | ✓ | - |
| | burn | External | ✓ | - |
| | swap | External | ✓ | - |
| | skim | External | ✓ | - |
| | sync | External | ✓ | - |
| | initialize | External | ✓ | - |
| | | | | |
| **IUniswapV2Factory** | Interface | | | |
| | feeTo | External | | - |
| | feeToSetter | External | | - |
| | getPair | External | | - |

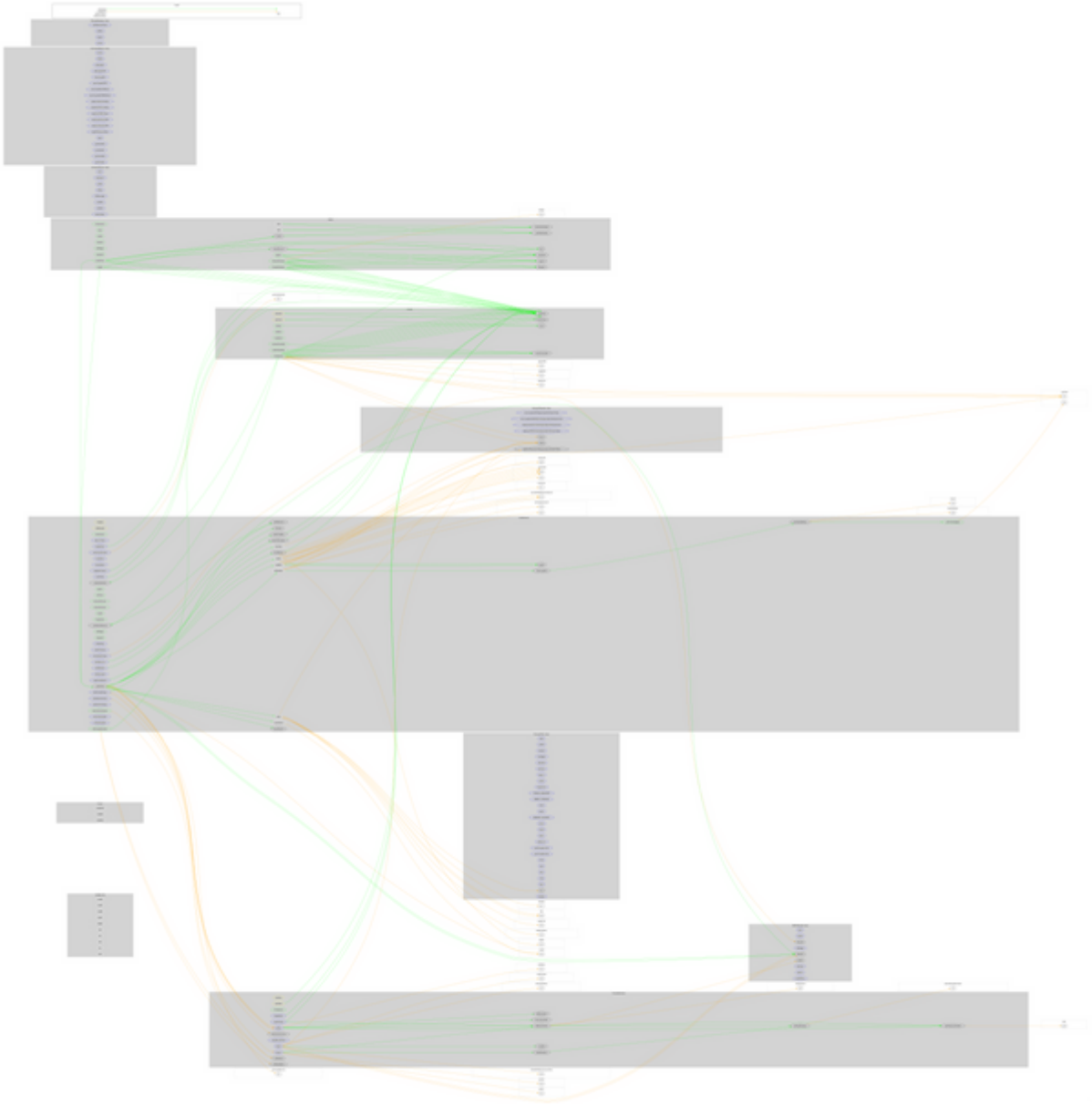
| | | | | |
|---|---|---|---|---|
| | allPairs | External | | - |
| | allPairsLength | External | | - |
| | createPair | External | ✓ | - |
| | setFeeTo | External | ✓ | - |
| | setFeeToSetter | External | ✓ | - |
| | | | | |
| **IUniswapV2Router01** | Interface | | | |
| | factory | External | | - |
| | WETH | External | | - |
| | addLiquidity | External | ✓ | - |
| | addLiquidityETH | External | Payable | - |
| | removeLiquidity | External | ✓ | - |
| | removeLiquidityETH | External | ✓ | - |
| | removeLiquidityWithPermit | External | ✓ | - |
| | removeLiquidityETHWithPermit | External | ✓ | - |
| | swapExactTokensForTokens | External | ✓ | - |
| | swapTokensForExactTokens | External | ✓ | - |
| | swapExactETHForTokens | External | Payable | - |
| | swapTokensForExactETH | External | ✓ | - |
| | swapExactTokensForETH | External | ✓ | - |
| | swapETHForExactTokens | External | Payable | - |
| | quote | External | | - |
| | getAmountOut | External | | - |
| | getAmountIn | External | | - |
| | getAmountsOut | External | | - |
| | getAmountsIn | External | | - |
| | | | | |
| **IUniswapV2Router02** | Interface | IUniswapV2Router01 | | |
| | removeLiquidityETHSupportingFeeOnTransferTokens | External | ✓ | - |
| | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External | ✓ | - |
| | swapExactTokensForTokensSupportingFeeOnTransferTokens | External | ✓ | - |
| | swapExactETHForTokensSupportingF | External | Payable | - |

| | | | | |
|---|---|---|---|---|
| | eeOnTransferTokens | | | |
| | swapExactTokensForETHSupportingFeeOnTransferTokens | External | ✓ | - |
| | | | | |
| **IDividendDistributor** | Interface | | | |
| | setDistributionCriteria | External | ✓ | - |
| | setShare | External | ✓ | - |
| | deposit | External | Payable | - |
| | process | External | ✓ | - |
| | | | | |
| **DividendDistributor** | Implementation | IDividendDistributor, Ownable | | |
| | <Constructor> | Public | ✓ | - |
| | changeRouter | External | ✓ | authorized |
| | unInitialized | External | ✓ | authorized |
| | setTokenAddress | External | ✓ | initializer authorized |
| | setDistributionCriteria | External | ✓ | authorized |
| | changeRewardToken | External | ✓ | authorized |
| | setShare | External | ✓ | onlyToken |
| | deposit | External | Payable | authorized |
| | process | External | ✓ | authorized |
| | shouldDistribute | Internal | | |
| | distributeDividend | Internal | ✓ | |
| | getCumulativeDividends | Internal | | |
| | getUnpaidEarnings | Public | | - |
| | addShareholder | Internal | ✓ | |
| | removeShareholder | Internal | ✓ | |
| | claimDividend | External | ✓ | - |
| | | | | |
| **LuzionProtocol** | Implementation | ERC20, Ownable | | |
| | <Constructor> | Public | ✓ | ERC20 |
| | <Receive Ether> | External | Payable | - |
| | changeRouter | External | ✓ | authorized |

| | | | | |
|---|---|---|---|---|
| | changePairContract | External | ✓ | authorized |
| | manualSync | External | ✓ | - |
| | getCirculatingSupply | Public | | - |
| | setAutoRebase | External | ✓ | authorized |
| | setBotBlacklist | External | ✓ | authorized |
| | setSwapBackSettings | External | ✓ | authorized |
| | rescueToken | External | ✓ | authorized |
| | rebase | Internal | ✓ | |
| | takeFee | Internal | ✓ | |
| | swapBack | Internal | ✓ | swapping |
| | addLiquidity | Internal | ✓ | swapping |
| | buyTokens | Internal | ✓ | swapping |
| | approve | Public | ✓ | - |
| | allowance | Public | | - |
| | decreaseAllowance | Public | ✓ | - |
| | increaseAllowance | Public | ✓ | - |
| | transfer | Public | ✓ | validRecipient |
| | transferFrom | Public | ✓ | validRecipient |
| | _basicTransfer | Internal | ✓ | |
| | _transferFrom | Internal | ✓ | |
| | totalSupply | Public | | - |
| | balanceOf | Public | | - |
| | shouldTakeFee | Internal | | |
| | shouldRebase | Internal | | |
| | shouldAddLiquidity | Internal | | |
| | shouldSwapBack | Internal | | |
| | isOverLiquified | Public | | - |
| | isNotInSwap | External | | - |
| | checkFeeExempt | External | | - |
| | checkSwapThreshold | External | | - |
| | isContract | Internal | | |
| | _initializeFeeReceivers | Internal | ✓ | |
| | setFeeReceivers | External | ✓ | authorized |
| | _setFeeReceivers | Internal | ✓ | |
| | setIsFeeExempt | External | ✓ | authorized |

| | | | | |
|---|---|---|---|---|
| | _initializeDistributor | Internal | ✓ | |
| | distributorInitialization | Public | ✓ | authorized |
| | setDividendDistributor | Public | ✓ | authorized |
| | setDistributionCriteria | External | ✓ | authorized |
| | setDistributorSettings | External | ✓ | authorized |
| | setIsDividendExempt | External | ✓ | authorized |
| | getLiquidityBacking | Public | | - |
| | setAutoAddLiquidity | External | ✓ | authorized |
| | setTargetLiquidity | External | ✓ | authorized |
| | triggerZeusBuyback | External | ✓ | authorized |

# Contract Flow



# Domain Info

| | |
|---|---|
| **Domain Name** | luzion.io |
| **Registry Domain ID** | 03de6f68973e4a6d965ee5cba83b025e-DONUTS |
| **Creation Date** | 2022-04-05T18:43:57Z |
| **Updated Date** | 2022-04-10T18:44:17Z |
| **Registry Expiry Date** | 2023-04-05T18:43:57Z |
| **Registrar WHOIS Server** | http://www.hostinger.com |
| **Registrar URL** | http://www.hostinger.com |
| **Registrar** | Hostinger, UAB |
| **Registrar IANA ID** | 1636 |

The domain has been created 5 days before the creation of the audit. It will expire in 12 months.

There is no public billing information, the creator is protected by the privacy settings.

# Summary

The Smart Contract analysis reported no compiler error or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions. The transaction fees are fixed to 12% for buys and 16% for sales. The contract can blacklist addresses that are contracts. The contract increases the total supply and the corresponding holdings proportionally to the time that has elapsed.

# Disclaimer

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The Cyberscope team disclaims any liability for the resulting losses.

# About Cyberscope

Coinscope audit and K.Y.C. service has been rebranded to Cyberscope.

Coinscope is the leading early coin listing, voting and auditing authority firm. The audit process is analyzing and monitoring many aspects of the project. That way, it gives the community a good sense of security using an informative report and a generic score.

Cyberscope and Coinscope are aiming to make crypto discoverable and efficient globally. They provides all the essential tools to assist users draw their own conclusions.

The Cyberscope team

https://www.cyberscope.io