Cyberscope

Audit Report

ElonAlly

June 2022

Type	BEP20
Network	BSC
Address	0x41bEC9e10A5bb2F2BBaece4e9491466930874C88
Audited by	© cyberscope

Table of Contents

Contract Review

Contract Name	ElonAllyToken
Compiler Version	v0.8.4+commit.c7e474f2
Optimization	1000 runs
Licence	
Explorer	https://bscscan.com/token/0x41bEC9e10A5bb2F2BBaece4e9491466930874C88
Symbol	ELONA
Decimals	9
Total Supply	1,000,000,000,000,000
Domain	elonally.network

Audit Updates

Initial Audit	23rd June 2022
Corrected	

Source Files

Filename	SHA256
@openzeppelin/contracts/access/Ownable.sol	75e3c97011e75627ffb36f4a2799a4e887e1a3e27ed427490e82d7b6f51cc5c9
@openzeppelin/contracts/token/ERC20/IERC20.sol	94f23e4af51a18c2269b355b8c7cf4db8003d075c9c541019eb8dcf4122864d5
@openzeppelin/contracts/utils/Address.sol	aafa8f3e41700a8353aabcdf020e06735753e6bc4b615279b43de53cfbb4f2cd
@openzeppelin/contracts/utils/Context.sol	1458c260d010a08e4c20a4a517882259a23a4baa0b5bd9add9fb6d6a1549814a
@openzeppelin/contracts/utils/math/SafeMath.sol	0dc33698a1661b22981abad8e5c6f5ebca0dfe5ec14916369a2935d888ff257a
contracts/ElonAllyToken.sol	2935e13d5a3f71e2144f99513a0a453c2e0de02b0b586def0e0aec1fb4684388
contracts/interfaces/IUniswapV2Factory.sol	e6aae249010ac5a804bfa992d62277e2df01584d8258cacba726c93ff6cd3f5a
contracts/interfaces/IUniswapV2Router01.sol	f46732ab202ec6761fc9a5e5d59267e7785c5325c8780107ed914ceb5f3cc875
contracts/interfaces/IUniswapV2Router02.sol	cbf0ffd7ad040875375c77d53126ad9ba6aac954f274d43b66ee5231385e57b5

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

ST - Stop Transactions

Criticality	critical
Location	contract.sol#L284,302

Description

The contract owner has the authority to stop the sales for all users excluding the owner. The owner may take advantage of it by setting the `buybackFee` to a value greater than 100 and transfer more than 1,0…01 native coins to the contract. As a result the expression will produce a greater amount than the contract's balance and the transaction will revert.

```
buyBackTokens(balance.mul(buybackFee).div(100));
```

The contract owner has the authority to stop transactions for all users excluding the owner. The owner may take advantage of it by setting the `_maxTxAmount` to zero.

```
if (from != owner() && to != owner()) {
    require(
        amount <= _maxTxAmount && _isExcludedFromMaxTx[from] == true,
        "Transfer amount exceeds the maxTxAmount."
    );
}
```

Recommendation

The contract could embody a check for not allowing setting the _maxTxAmount less than a reasonable amount. A suggested implementation could check that the maximum amount should be more than a fixed percentage of the total supply.

The contract could embody a check for not allowing setting the `buybackFee` more than 100%.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user

from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

ELFM - Exceed Limit Fees Manipulation

Criticality	critical
Location	contract.sol#L603

Description

The contract owner has the authority to increase over the allowed limit of 25%. The owner may take advantage of it by calling the `setTaxFeePercent` function with a high percentage value.

```
 function setTaxFeePercent(uint256 taxFee) external onlyOwner() {
    _taxFee = taxFee;
}
```

Recommendation

The contract could embody a check for the maximum acceptable value.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

ULTW - Unlimited Liquidity to Team Wallet

Criticality	medium
Location	contract.sol#L1

Description

The contract contains an ‘addLiquidity’ method but it is not using it. All the accumulated from the tax are liquidated to the dev’s wallet. The ‘buyBackTokens’ will be redundant if the ‘minimumTokensBeforeSwap’ is less than 10^18 since there will not be remaining tokens to buyback.

```
function swapTokens(uint256 contractTokenBalance) private lockTheSwap {
    uint256 initialBalance = address(this).balance;
    swapTokensForEth(contractTokenBalance);
    uint256 transferredBalance = address(this).balance.sub(initialBalance);

    //Send to Marketing address
    transferToAddressETH(
        marketingAddress,
        transferredBalance
    );
}
```

```
if (overMinimumTokenBalance) {
    contractTokenBalance = minimumTokensBeforeSwap;
    swapTokens(contractTokenBalance);
}
uint256 balance = address(this).balance;
if (buyBackEnabled && balance > uint256(1 * 10**18)) {
    if (balance > buyBackUpperLimit) balance = buyBackUpperLimit;

    buyBackTokens(balance.mul(buybackFee).div(100));
}
```

Recommendation

The contract could embody a check for the maximum amount of funds that can be swapped. Since a huge amount may volatile the token’s price.

The team should carefully manage the private keys of the owner’s account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

Contract Diagnostics

Critical Medium Minor

Severity	Code	Description
	L01	Public Function could be Declared External
	L02	State Variables could be Declared Constant
	L04	Conformance to Solidity Naming Conventions
	L07	Missing Events Arithmetic
	L09	Dead Code Elimination
	L11	Unnecessary Boolean equality

L01 - Public Function could be Declared External

Criticality	minor
Location	contracts/ElonAllyToken.sol#L90,94,98,102,111,120,129,138,155,168,184,188,192,196,200,212,240,587,591,595,599,623,628

Description

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

```
setBuyBackEnabled
setSwapAndLiquifyEnabled
includeInFee
excludeFromMaxTx
excludeFromFee
isExcludedFromFee
excludeFromReward
reflectionFromToken
deliver
...
```

Recommendation

Use the external attribute for functions never called from the contract.

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contracts/ElonAllyToken.sol#L37,35,36,31,45

Description

Constant state variables should be declared constant to save gas.

```
minimumTokensBeforeSwap
_tTotal
_symbol
_name
_decimals
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contracts/ElonAllyToken.sol#L571,607,619,623,628,39,44

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.

```
_maxTxAmount
_taxFee
_enabled
_marketingAddress
_buybackFee
_amount
```

Recommendation

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

L07 - Missing Events Arithmetic

Criticality	minor
Location	contracts/ElonAllyToken.sol#L603,607,611,615

Description

Detected missing events for critical arithmetic parameters. There are functions that have no event emitted, so it is difficult to track off-chain changes.

```
buyBackUpperLimit = buyBackLimit * 10 ** 18
_maxTxAmount = maxTxAmount
buybackFee = _buybackFee
_taxFee = taxFee
```

Recommendation

Emit an event for critical parameter changes.

L09 - Dead Code Elimination

Criticality	minor
Location	contracts/ElonAllyToken.sol#L373

Description

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

```
addLiquidity
```

Recommendation

Remove unused functions.

L11 - Unnecessary Boolean equality

Criticality	minor
Location	contracts/ElonAllyToken.sol#L274

Description

The comparison to boolean constants is redundant. Boolean constants can be used directly and do not need to be compared to true or false.

```
require(bool,string)(amount <= _maxTxAmount && _isExcludedFromMaxTx[from] ==
true,Transfer amount exceeds the maxTxAmount.)
```

Recommendation

Remove the equality to the boolean constant.

Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
Ownable	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
Address	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionStaticCall	Internal		
	functionStaticCall	Internal		
	functionDelegateCall	Internal	✓	
	functionDelegateCall	Internal	✓	
	verifyCallResult	Internal		
Context	Implementation			

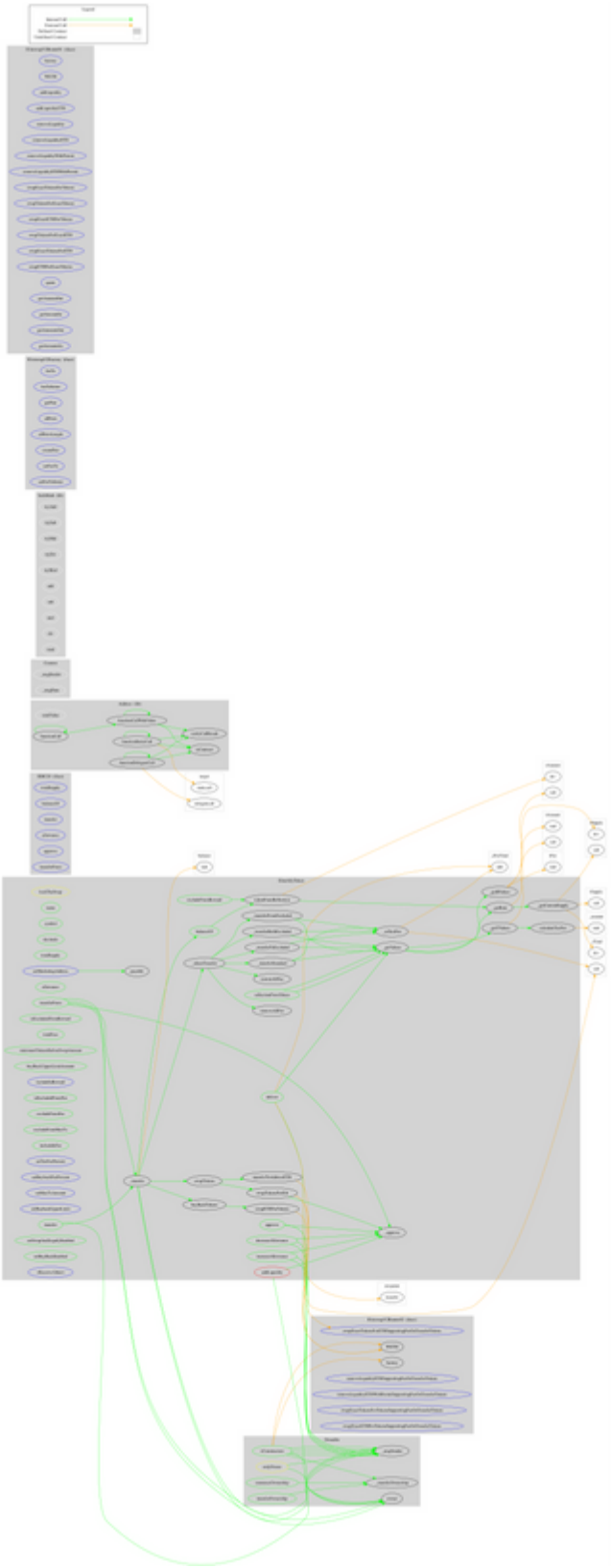
	_msgSender	Internal		
	_msgData	Internal		
SafeMath	Library			
	tryAdd	Internal		
	trySub	Internal		
	tryMul	Internal		
	tryDiv	Internal		
	tryMod	Internal		
	add	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	mod	Internal		
	sub	Internal		
	div	Internal		
	mod	Internal		
ElonAllyToken	Implementation	Context, IERC20, Ownable		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	isExcludedFromReward	Public		-
	totalFees	Public		-
	minimumTokensBeforeSwapAmount	Public		-

	buyBackUpperLimitAmount	Public		-
	deliver	Public	✓	-
	reflectionFromToken	Public		-
	tokenFromReflection	Public		-
	excludeFromReward	Public	✓	onlyOwner
	includeInReward	External	✓	onlyOwner
	_approve	Private	✓	
	_transfer	Private	✓	
	swapTokens	Private	✓	lockTheSwap
	buyBackTokens	Private	✓	lockTheSwap
	swapTokensForEth	Private	✓	
	swapETHForTokens	Private	✓	
	addLiquidity	Private	✓	
	_tokenTransfer	Private	✓	
	_transferStandard	Private	✓	
	_transferToExcluded	Private	✓	
	_transferFromExcluded	Private	✓	
	_transferBothExcluded	Private	✓	
	_reflectFee	Private	✓	
	_getValues	Private		
	_getTValues	Private		
	_getRValues	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	calculateTaxFee	Private		
	removeAllFee	Private	✓	
	restoreAllFee	Private	✓	
	isExcludedFromFee	Public		-
	excludeFromFee	Public	✓	onlyOwner
	excludeFromMaxTx	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	setTaxFeePercent	External	✓	onlyOwner
	setBuybackFeePercent	External	✓	onlyOwner
	setMaxTxAmount	External	✓	onlyOwner
	setBuybackUpperLimit	External	✓	onlyOwner

	setMarketingAddress	External	✓	onlyOwner
	setSwapAndLiquifyEnabled	Public	✓	onlyOwner
	setBuyBackEnabled	Public	✓	onlyOwner
	transferToAddressETH	Private	✓	
	<Receive Ether>	External	Payable	-
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	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-

Contract Flow



Domain Info

Domain Name	elonally.network
Registry Domain ID	a8dc5ffb495a47fb876d2de0997dc72a-DONUTS
Creation Date	2022-06-22T13:00:59Z
Updated Date	2022-06-22T13:01:02Z
Registry Expiry Date	2023-06-22T13:00:59Z
Registrar WHOIS Server	whois.namecheap.com
Registrar URL	https://www.namecheap.com/
Registrar	NameCheap, Inc.
Registrar IANA ID	1068

The domain has been created in 12 months before the creation of the audit.

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

Summary

There are some functions that can be abused by the owner like stopping transactions, manipulating fees and transferring funds to the team’s wallet. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

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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 provide all the essential tools to assist users draw their own conclusions.

The Cyberscope team

https://www.cyberscope.io