



Cyberscope

Audit Report

Super Heroes Token

February 2022

Type BEP20

Network BSC

Address 0x25DE90A27028Ab9cCAD603eAD6d282cbffDa033c

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Contract Review

Contract Name	HERO
Compiler Version	v0.6.12+commit.27d51765
Optimization	200 runs
Licence	Unlicense
Explorer	https://bscscan.com/token/0x25DE90A27028Ab9cCAD603eAD6d282cbffDa033c
Symbol	HERO
Decimals	9
Total Supply	10,000,000,000,000,000
Source	contract.sol
Domain	superheroestoken.com

Audit Updates

Initial Audit	25th February 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

ST - Stop Transactions

Criticality	medium
Location	contract.sol#L1082

Description

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 a very low value. As a result, the trading amount will be so decreased that essentially the trades will not be able to proceed.

```
if(!_isExcludedFromFee[sender] || !_isExcludedFromFee[recipient]){
    removeAllFee();
}
else{
    require(amount <= _maxTxAmount, "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 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
●	FSA	Fixed Swap Address
●	L01	Public Function could be Declared External
●	L02	State Variables could be Declared Constant
●	L04	Conformance to Solidity Naming Conventions
●	L09	Dead Code Elimination
●	L07	Missing Events Arithmetic
●	L08	Tautology or Contradiction

FSA - Fixed Swap Address

Criticality	minor
Location	contract.sol#L759

Description

The swap address is assigned once in the constructor and it can not be changed. The decentralized swaps sometimes create a new swap version or abandon the current. A contract that cannot change the swap address may not be able to catch-up the upgrade.

```
IUniswapV2Router02 _uniswapV2Router =  
IUniswapV2Router02(0x10ED43C718714eb63d5aA57B78B54704E256024E); // PCS V2  
MAINNET  
//IUniswapV2Router02 _uniswapV2Router =  
IUniswapV2Router02(0xD99D1c33F9fC3444f8101754aBC46c52416550D1); // PCS V2  
TESTNET  
//IUniswapV2Router02 _uniswapV2Router =  
IUniswapV2Router02(0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D); // UNI V2  
TESTNET  
    // Create a uniswap pair for this new token  
    uniswapV2Pair = IUniswapV2Factory(_uniswapV2Router.factory())  
        .createPair(address(this), _uniswapV2Router.WETH());  
  
// set the rest of the contract variables  
uniswapV2Router = _uniswapV2Router;
```

Recommendation

It could be better to allow the swap address mutation in case of future swap updates.

L01 - Public Function could be Declared External

Criticality

minor

Location

contract.sol#L450,459,465,470,478,776,780,784,788,797 and 14 more

Description

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

```
setSwapAndLiquifyEnabled
includeInFee
excludeFromFee
isExcludedFromFee
excludeFromReward
reflectionFromToken
deliver
totalFees
isExcludedFromReward
...
```

Recommendation

Use the external attribute for functions never called from the contract

L02 - State Variables could be Declared Constant

Criticality

minor

Location

contract.sol#L718,716,717,712,740

Description

Constant state variables should be declared constant to save gas.

```
numTokensSellToAddToLiquidity
_tTotal
_symbol
_name
_decimals
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality

minor

Location

contract.sol#L522,523,539,560,951,957,1193,720,723,726 and 3 more

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  
CharityWallet  
_CharityFee  
_burnFee  
_liquidityFee  
_taxFee  
_enabled  
_amount  
WETH  
...
```

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#L376,336,346,361,371,283,310,255,228,244

Description

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

```
mod
_msgData
sendValue
isContract
functionCallWithValue
functionCall
_functionCallWithValue
...
```

Recommendation

Remove unused functions.

L07 - Missing Events Arithmetic

Criticality

minor

Location

contract.sol#L1186

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.

```
_maxTxAmount = _tTotal.mul(maxTxPercent).div(10 ** 2)
```

Recommendation

Emit an event for critical parameter changes.

L08 - Tautology or Contradiction

Criticality

minor

Location

contract.sol#L1186

Description

Detects expressions that are tautologies or contradictions. For instance, an uint variable will always be greater than or equal to zero.

```
require(bool,string)(maxTxPercent >= 0, Cannot set transaction amount less than 10 percent!)
```

Recommendation

Fix the incorrect comparison by changing the value type or the comparison.

Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
	mod	Internal		
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Address	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	

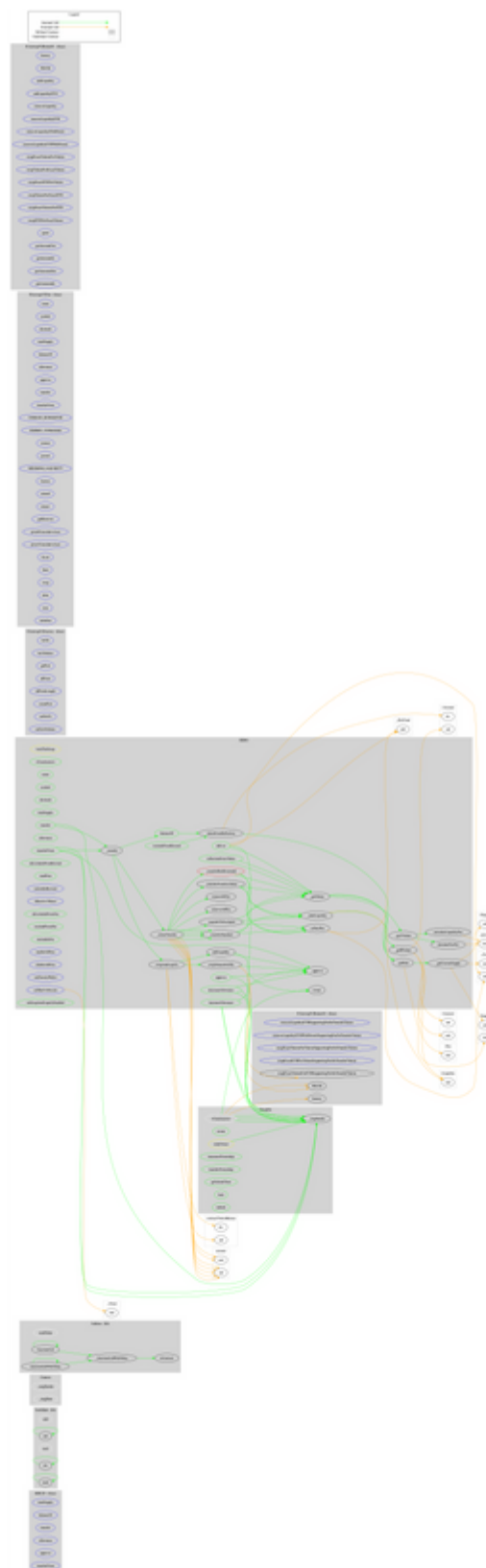
	_functionCallWithValue	Private	✓	
Ownable	Implementation	Context		
	<Constructor>	Internal	✓	
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	geUnlockTime	Public		-
	lock	Public	✓	onlyOwner
	unlock	Public	✓	-
IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
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		-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	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	✓	-
HERO	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		-
	deliver	Public	✓	-
	reflectionFromToken	Public		-
	tokenFromReflection	Public		-
	excludeFromReward	Public	✓	onlyOwner
	includeInReward	External	✓	onlyOwner
	_transferBothExcluded	Private	✓	
	<Receive Ether>	External	Payable	-

	_reflectFee	Private	✓	
	_getValues	Private		
	_getTValues	Private		
	_getRValues	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	_takeLiquidity	Private	✓	
	calculateTaxFee	Private		
	calculateLiquidityFee	Private		
	removeAllFee	Private	✓	
	restoreAllFee	Private	✓	
	isExcludedFromFee	Public		-
	_approve	Private	✓	
	_transfer	Private	✓	
	swapAndLiquify	Private	✓	lockTheSwap
	swapTokensForEth	Private	✓	
	addLiquidity	Private	✓	
	_tokenTransfer	Private	✓	
	_transferStandard	Private	✓	
	_transferToExcluded	Private	✓	
	_transferFromExcluded	Private	✓	
	excludeFromFee	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	enableAllFees	External	✓	onlyOwner
	disableAllFees	External	✓	onlyOwner
	setCharityWallet	External	✓	onlyOwner
	setMaxTxPercent	External	✓	onlyOwner
	setSwapAndLiquifyEnabled	Public	✓	onlyOwner

Contract Flow



Domain Info

Domain Name	superheroestoken.com
Registry Domain ID	2650888936_DOMAIN_COM-VRSN
Creation Date	2021-10-28T17:43:06Z
Updated Date	2021-10-28T19:43:14Z
Registry Expiry Date	
Registrar WHOIS Server	whois.registrar.eu
Registrar URL	http://www.registrar.eu
Registrar	Hosting Concepts B.V. d/b/a Registrar.eu
Registrar IANA ID	1647

The domain has been created 4 months before the creation of the audit.

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

Summary

The Smart Contract analysis reported one medium severity issue. The contract Owner has the ability to stop the transactions. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats. The total fees percentage is fixed 15% and cannot be changed.

Disclaimer

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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>