
# Audit Report

# **Community Support**

December 2021

| | |
|---|---|
| Type | BEP20 Testnet |
| Address | 0x6584e787cF7a6a465a6b8cD1c968EcA8AbB9c071 |
| Audited by | © coinscope |

# Table of Contents

# Contract Review

| | |
|---|---|
| **Contract Name** | CST |
| **Compiler Version** | v0.8.7+commit.e28d00a7 |
| **Optimization** | 200 runs |
| **Licence** | MIT |
| **Explorer** | https://testnet.bscscan.com/token/0x6584e787cf7a6a465a6b8cd1c968eca8abb9c071 |
| **Symbol** | CST |
| **Decimals** | 9 |
| **Total Supply** | 1,000,000,000,000,000 |
| **Website** | |

# Audit Updates

| | |
|---|---|
| **Initial Audit** | 31th of December 2021 |
| **Corrected** | |

# Contract Analysis

● Critical ● Medium ● Minor ● Pass

| Severity | Code | Description | Resolved |
|---|---|---|---|
| ● | ST | Contract Owner is not able to stop or pause transactions | Partially |
| ● | 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%) | Partially |
| ● | 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#L656 |
| **Resolved** | *Partially |

## 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 zero.

```
if(from != owner() && to != owner())
{
    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.

# ELFM - Exceed Limit Fees Manipulation

| | |
|---|---|
| **Criticality** | critical |
| **Location** | contract.sol#L904 |
| **Resolved** | *Partially |

## 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 `setAllFeesPercent` function with a high percentage value.

```
    function setAllFeesPercent(
        uint256 taxFee,
        uint256 liquidityFee,
        uint256 marketingFee,
        uint256 developerFee,
        uint256 burnFee
        ) public onlyOwner() {
        _taxFee = taxFee;
        _previousTaxFee = _taxFee;

        _liquidityFee = liquidityFee;
        _previousLiquidityFee = _liquidityFee;

        _marketingFee = marketingFee;
        _previousMarketingFee = _marketingFee;

        _developerFee = developerFee;
        _previousDeveloperFee = _developerFee;

        _burnFee = burnFee;
        _previousBurnFee = _burnFee;
    }
```

## 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.

# Contract Diagnostics

Critical Medium Minor

| Severity | Code | Description |
|---|---|---|
| | L01 | Public Function could be Declared External |
| | L02 | State Variables could be Declared Constant |
| | L03 | Redundant Statements |
| | L04 | Conformance to Solidity Naming Conventions |
| | L09 | Dead Code Elimination |
| | L07 | Missing Events Arithmetic |

# L01 - Public Function could be Declared External

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L1027,L1022,L1018 and 27 more |

## Description

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

```
setMaxWalletLimit
setExcludedFromWhale
setExtraAntiWhaleFee
...
```

## Recommendation

Use the external attribute for functions never called from the contract

# L02 - State Variables could be Declared Constant

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L441,L453,L458 and 2 more |

## Description

Constant state variables should be declared constant to save gas.

```
developerAddress
_tTotal
_symbol
...
```

## Recommendation

Add the constant attribute to state variables that never change.

# L03 - Redundant Statements

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L10 |

## Description

Detect the usage of redundant statements that have no effect.

Context

## Recommendation

Remove redundant statements if they congest code but offer no value.

# L04 - Conformance to Solidity Naming Conventions

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L487,L485,L483 and 22 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.

```
_extraAntiWhaleFee
_maxSaleAmount
_maxTxAmount
...
```

## 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#L74,L70,L9 and 7 more |

## Description

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

```
mod
_msgData
sendValue
...
```

## Recommendation

Remove unused functions.

# L07 - Missing Events Arithmetic

| | |
|---|---|
| **Criticality** | minor |
| **Location** | contract.sol#L1027,L1018,L965 and 4 more |

## 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.

```
maxLimit = amount
_extraAntiWhaleFee = _value
minimumTokensBeforeSwap = _minimumTokensBeforeSwap
...
```

## Recommendation

Emit an event for critical parameter changes.

# Contract Functions

| Contract | Type | Bases | | |
|---|---|---|---|---|
| | **Function Name** | **Visibility** | **Mutability** | **Modifiers** |
| | | | | |
| **Context** | Implementation | | | |
| | _msgSender | Internal | | |
| | _msgData | Internal | | |
| | | | | |
| **IBEP20** | 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 | | |
| | | | | |
| **Address** | Library | | | |
| | isContract | Internal | | |
| | sendValue | Internal | ✓ | |
| | functionCall | Internal | ✓ | |
| | functionCall | Internal | ✓ | |
| | functionCallWithValue | Internal | ✓ | |
| | functionCallWithValue | Internal | ✓ | |

| | | | | |
|---|---|---|---|---|
| | _functionCallWithValue | Private | ✓ | |
| | | | | |
| **Ownable** | Implementation | Context | | |
| | <Constructor> | Public | ✓ | - |
| | owner | Public | | - |
| | renounceOwnership | Public | ✓ | onlyOwner |
| | transferOwnership | Public | ✓ | onlyOwner |
| | getUnlockTime | Public | | - |
| | getTime | 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 | | - |

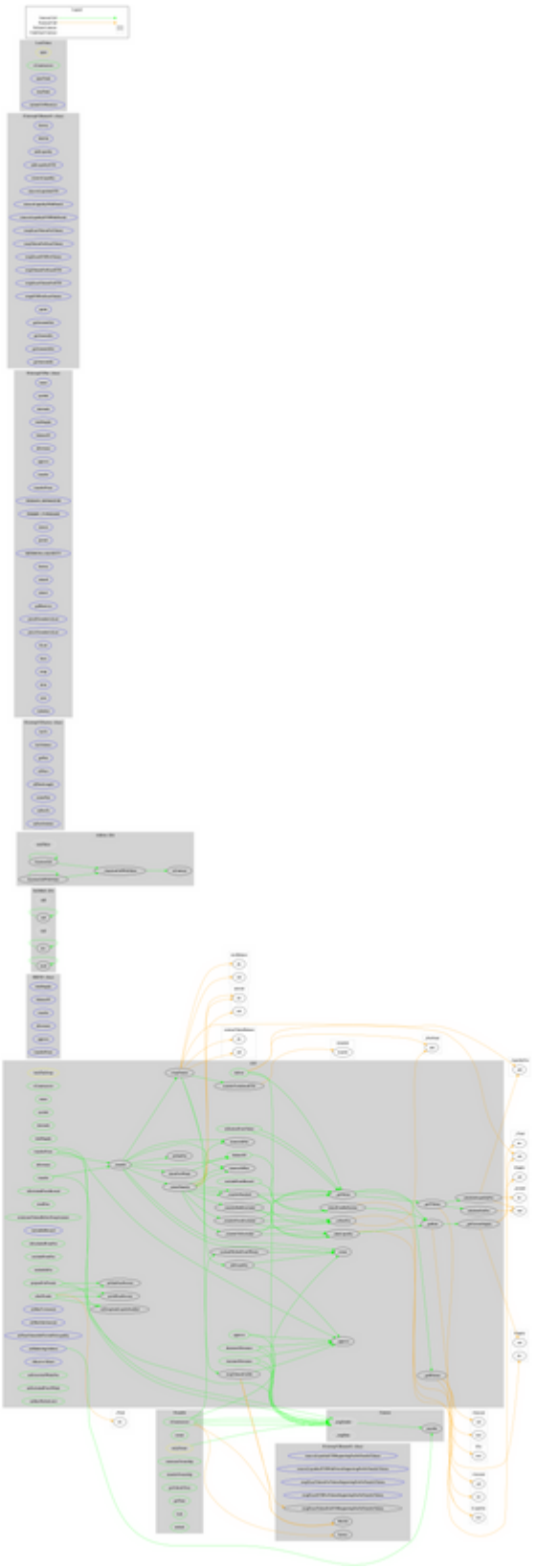
| | | | | |
|---|---|---|---|---|
| | nonces | External | | - |
| | permit | External | ✓ | - |
| | MINIMUM_LIQUIDITY | External | | - |
| | factory | External | | - |
| | token0 | External | | - |
| | token1 | External | | - |
| | getReserves | External | | - |
| | price0CumulativeLast | External | | - |
| | 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 | ✓ | - |
| | | | | |
| **LockToken** | Implementation | Ownable | | |
| | <Constructor> | Public | ✓ | - |
| | openTrade | External | ✓ | onlyOwner |
| | stopTrade | External | ✓ | onlyOwner |
| | includeToWhiteList | External | ✓ | onlyOwner |
| | | | | |
| **CST** | Implementation | Context, IBEP20, LockToken | | |
| | <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 | | - |
| | deliver | Public | ✓ | - |
| | reflectionFromToken | Public | | - |
| | tokenFromReflection | Public | | - |
| | excludeFromReward | Public | ✓ | onlyOwner |
| | includeInReward | External | ✓ | onlyOwner |
| | _approve | Private | ✓ | |
| | _transfer | Private | ✓ | open |
| | swapTokens | Private | ✓ | lockTheSwap |
| | swapTokensForEth | 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 | | |
| | _takeLiquidity | Private | ✓ | |
| | calculateTaxFee | Private | | |
| | calculateLiquidityFee | Private | | |
| | isExcludedFromFee | Public | | - |
| | excludeFromFee | Public | ✓ | onlyOwner |
| | includeInFee | Public | ✓ | onlyOwner |
| | removeAllFee | Private | ✓ | |
| | restoreAllFee | Private | ✓ | |
| | setSaleFee | Private | ✓ | |
| | setAllFeesPercent | Public | ✓ | onlyOwner |
| | setSaleFeesPercent | Public | ✓ | onlyOwner |
| | prepareForPresale | Public | ✓ | onlyOwner |
| | afterPresale | Public | ✓ | onlyOwner |

| | | | | |
|---|---|---|---|---|
| | setMaxTxAmount | External | ✓ | onlyOwner |
| | setMaxSaleAmount | External | ✓ | onlyOwner |
| | setNumTokensSellToAddToLiquidity | External | ✓ | onlyOwner |
| | setMarketingAddress | External | ✓ | onlyOwner |
| | setSwapAndLiquifyEnabled | Public | ✓ | onlyOwner |
| | transferToAddressETH | Private | ✓ | |
| | <Receive Ether> | External | Payable | - |
| | excludeWalletsFromWhales | Private | ✓ | |
| | checkForWhale | Private | ✓ | |
| | setExtraAntiWhaleFee | Public | ✓ | onlyOwner |
| | setExcludedFromWhale | Public | ✓ | onlyOwner |
| | setMaxWalletLimit | Public | ✓ | onlyOwner |

# Contract Flow



# Summary

The Smart Contract analysis of Community Support Token reported one high and one medium risk issue. There are some functions that can be abused by the owner, like manipulating fees and indirectly stopping the transactions. Additionally, there are some informative comments that do not affect the contract security. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

## Update

The Community Support Token has introduced a multi-sig wallet pattern. That means that even if the credentials of one wallet leak, the attacker should obtain all the signing wallets in order to perform an attack. This pattern does not guarantee that the contract variables cannot be changed, but it is a good security guard.

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# About Coinscope

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.

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

The Coinscope.co team

https://www.coinscope.co