



Smart Contract Audit

FOR

MyCarrot

DATED : 04 Dec 23'



AUDIT SUMMARY

Project name - MyCarrot

Date: 04 Dec, 2023

Scope of Audit- Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

Audit Status: Passed

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	0	1	1	0
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0



USED TOOLS

Tools:

1- Manual Review:

A line by line code review has been performed by audit ace team.

2- BSC Test Network: All tests were conducted on the BSC Test network, and each test has a corresponding transaction attached to it. These tests can be found in the "Functional Tests" section of the report.

3- Slither :

The code has undergone static analysis using Slither.

Testnet version:

The tests were performed using the contract deployed on the BSC Testnet, which can be found at the following address:

<https://testnet.bscscan.com/address/0x1e49862acd46c38d376d9da02974b4183e4ccfdc#code>



Token Information

Token Address:

0xd19c4F3075C29a08F44DF86E4e6A6d77Cf6Ae6aA

Name: My Carrot

Symbol: CARROT

Decimals: 18

Network: BscScan

Token Type: BEP-20

Owner:

0x63FB30c47e10e713494255D5a4abf54777D897c6

Deployer:

0x63FB30c47e10e713494255D5a4abf54777D897c6

Token Supply: 100000000000000000000000000000000000000

Checksum: 9bff351e1897814d20411ecffceb9024

Testnet:

<https://testnet.bscscan.com/address/0x1e49862acd46c38d376d9da02974b4183e4ccfdc#code>



TOKEN OVERVIEW

Buy Fee: 0-20%

Sell Fee: 0-20%

Transfer Fee: 0-0%

Fee Privilege: Owner

Ownership: Owned

Minting: None

Max Tx: Yes

Blacklist: No



AUDIT METHODOLOGY

The auditing process will follow a routine as special considerations by Auditace:

- Review of the specifications, sources, and instructions provided to Auditace to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
- Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
- Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Auditace describe.
- Test coverage analysis determines whether the test cases are covering the code and how much code is exercised when we run the test cases.
- Symbolic execution is analysing a program to determine what inputs cause each part of a program to execute.
- Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.

VULNERABILITY CHECKLIST



Return values of low-level calls



Gasless Send



Private modifier



Using block.timestamp



Multiple Sends



Re-entrancy



Using Suicide



Tautology or contradiction



Gas Limit and Loops



Timestamp Dependence



Address hardcoded



Revert/require functions



Exception Disorder



Use of tx.origin



Using inline assembly



Integer overflow/underflow



Divide before multiply



Dangerous strict equalities



Missing Zero Address Validation



Using SHA3



Compiler version not fixed



Using throw

CLASSIFICATION OF RISK

Severity	Description
◆ Critical	These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
◆ High-Risk	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.
◆ Medium-Risk	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.
◆ Low-Risk	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.
◆ Gas Optimization / Suggestion	A vulnerability that has an informational character but is not affecting any of the code.

Findings

Severity	Found
◆ Critical	0
◆ High-Risk	0
◆ Medium-Risk	1
◆ Low-Risk	1
◆ Gas Optimization / Suggestions	0



POINTS TO NOTE

- The owner can renounce the ownership.
- The owner can transfer ownership.
- The owner can change the marketing wallet address.
- The owner can set buy and sell fees of not more than 20%.
- The owner can include/exclude the address from fees.

STATIC ANALYSIS

```

INFO:Detectors:
Reentrancy in MyCarrot._swapAndLiquify(uint256) (MyCarrot.sol#1035-1040):
  External calls:
    - _swapTokensForEth(half) (MyCarrot.sol#1041)
      - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),(block.timestamp + 300)) (MyCarrot.sol#1057-1063)
    - _addLiquidity(otherHalf,newBalance) (MyCarrot.sol#1045)
      - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1072-1079)
  External calls sending eth:
    - _addLiquidity(otherHalf,newBalance) (MyCarrot.sol#1045)
      - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1072-1079)
  Event emitted after the call(s):
    - Approval(owner,spender,amount) (MyCarrot.sol#1048)
      - _addLiquidity(otherHalf,newBalance) (MyCarrot.sol#1045)
    - SwapAndLiquify(half,newBalance,otherHalf) (MyCarrot.sol#1047)
Reentrancy in MyCarrot._transfer(address,address,uint256) (MyCarrot.sol#973-1023):
  External calls:
    - _swapAndLiquify(_numTokensSellToAddToLiquidity) (MyCarrot.sol#983)
      - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1072-1079)
      - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),(block.timestamp + 300)) (MyCarrot.sol#1057-1063)
    - _swapTokensForEth(_numTokensSellToAddToETH) (MyCarrot.sol#986)
      - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),(block.timestamp + 300)) (MyCarrot.sol#1057-1063)
  External calls sending eth:
    - _swapAndLiquify(_numTokensSellToAddToLiquidity) (MyCarrot.sol#983)
      - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1072-1079)
  Event emitted after the call(s):
    - Approval(owner,spender,amount) (MyCarrot.sol#848)
      - _swapTokensForEth(_numTokensSellToAddToETH) (MyCarrot.sol#986)
Reentrancy in MyCarrot._transfer(address,address,uint256) (MyCarrot.sol#973-1023):
  External calls:
    - _swapAndLiquify(_numTokensSellToAddToLiquidity) (MyCarrot.sol#983)
      - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1072-1079)
      - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),(block.timestamp + 300)) (MyCarrot.sol#1057-1063)
    - _swapTokensForEth(_numTokensSellToAddToETH) (MyCarrot.sol#986)
      - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),(block.timestamp + 300)) (MyCarrot.sol#1057-1063)
  External calls sending eth:
    - _swapAndLiquify(_numTokensSellToAddToLiquidity) (MyCarrot.sol#983)
      - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1072-1079)
    - sent = address(marketingWallet).send(address(this).balance) (MyCarrot.sol#988)
  Event emitted after the call(s):
    - Transfer(from,to,amount) (MyCarrot.sol#896)
      - super._transfer(from,to,transferAmount) (MyCarrot.sol#1018)
    - Transfer(from,to,amount) (MyCarrot.sol#896)
      - super._transfer(from,address(this),(marketingShare + liquidityShare)) (MyCarrot.sol#1015)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-3
INFO:Detectors:
ERC20._burn(address,uint256) (MyCarrot.sol#812-824) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

```

```

INFO:Detectors:
Function IUniswapV2Pair.DOMAIN_SEPARATOR() (MyCarrot.sol#68) is not in mixedCase
Function IUniswapV2Pair.PERMIT_TYPEHASH() (MyCarrot.sol#70) is not in mixedCase
Function IUniswapV2Pair.MINIMUM_LIQUIDITY() (MyCarrot.sol#101) is not in mixedCase
Function IUniswapV2Router1.METHOD() (MyCarrot.sol#107) is not in mixedCase
Parameter MyCarrot.changeTaxForLiquidityAndMarketing(uint256,uint256,uint256,..._taxBuyForLiquidity (MyCarrot.sol#1091) is not in mixedCase
Parameter MyCarrot.changeTaxForLiquidityAndMarketing(uint256,uint256,uint256,..._taxBuyForMarketing (MyCarrot.sol#1091) is not in mixedCase
Parameter MyCarrot.changeTaxForLiquidityAndMarketing(uint256,uint256,uint256,..._taxSellForLiquidity (MyCarrot.sol#1091) is not in mixedCase
Parameter MyCarrot.changeTaxForLiquidityAndMarketing(uint256,uint256,uint256,..._taxSellForMarketing (MyCarrot.sol#1091) is not in mixedCase
Parameter MyCarrot.changeMaxTxAmount(uint256)..._maxTxAmount (MyCarrot.sol#1186) is not in mixedCase
Parameter MyCarrot.changeMaxWalletAmount(uint256)..._maxWalletAmount (MyCarrot.sol#1117) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions
INFO:Detectors:
Reentrancy in MyCarrot._transfer(address,address,uint256) (MyCarrot.sol#973-1023):
  External calls:
    - sent = address(marketingWallet).send(address(this).balance) (MyCarrot.sol#988)
  External calls sending eth:
    - _swapAndLiquify(_numTokensSellToAddToLiquidity) (MyCarrot.sol#983)
      - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1072-1079)
    - sent = address(marketingWallet).send(address(this).balance) (MyCarrot.sol#988)
  State variables written after the call(s):
    - super._transfer(from,address(this),(marketingShare + liquidityShare)) (MyCarrot.sol#1015)
      - _balances[from] = fromBalance - amount (MyCarrot.sol#898)
      - _balances[to] += amount (MyCarrot.sol#893)
    - super._transfer(from,to,transferAmount) (MyCarrot.sol#1018)
      - _balances[from] = fromBalance - amount (MyCarrot.sol#898)
      - _balances[to] += amount (MyCarrot.sol#893)
    - _marketingReserves += marketingShare (MyCarrot.sol#1013)
  Event emitted after the call(s):
    - Transfer(from,to,amount) (MyCarrot.sol#896)
      - super._transfer(from,to,transferAmount) (MyCarrot.sol#1018)
    - Transfer(from,to,amount) (MyCarrot.sol#896)
      - super._transfer(from,address(this),(marketingShare + liquidityShare)) (MyCarrot.sol#1015)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-4
INFO:Detectors:
Variable IUniswapV2Router1.addLiquidity(address,address,uint256,uint256,uint256,address,uint256).amountADesired (MyCarrot.sol#152) is too similar to IUniswapV2Router1.addLiquidity(address,address,uint256,uint256,uint256,address,uint256).amountBDesired (MyCarrot.sol#153)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar
INFO:Detectors:
MyCarrot._decimals (MyCarrot.sol#911) should be constant
MyCarrot._name (MyCarrot.sol#999) should be constant
MyCarrot._symbol (MyCarrot.sol#910) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant
INFO:Detectors:
MyCarrot._numTokensSellToAddToETH (MyCarrot.sol#928) should be immutable
MyCarrot._numTokensSellToAddToLiquidity (MyCarrot.sol#919) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither:MyCarrot.sol analyzed (10 contracts with 93 detectors), 40 result(s) found

```



STATIC ANALYSIS

```
INFO:Detectors:
MyCarrot._addLiquidity(uint256,wint256) (MyCarrot.sol#1866-1880) ignores return value by uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1872-1879)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-return
INFO:Detectors:
MyCarrot.changeTaxForLiquidityAndMarketing(uint256,wint256,uint256,uint256) (MyCarrot.sol#1891-1180) should emit an event for:
- taxBuyForLiquidity = _taxBuyForLiquidity (MyCarrot.sol#1898)
- taxBuyForMarketing = _taxBuyForMarketing (MyCarrot.sol#1899)
- taxSellForLiquidity = _taxSellForLiquidity (MyCarrot.sol#1100)
- taxSellForMarketing = _taxSellForMarketing (MyCarrot.sol#1101)
MyCarrot.changeMaxTxAmount(uint256) (MyCarrot.sol#1106-1115) should emit an event for:
- maxTxAmount = _maxTxAmount * 10 ** _decimals (MyCarrot.sol#1112)
MyCarrot.changeMaxWalletAmount(uint256) (MyCarrot.sol#1117-1126) should emit an event for:
- maxWalletAmount = _maxWalletAmount * 10 ** _decimals (MyCarrot.sol#1123)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-events-arithmetic
INFO:Detectors:
MyCarrot.changeMarketingWallet(address)_newWallet (MyCarrot.sol#1882) lacks a zero-check on :
- marketingWallet = newWallet (MyCarrot.sol#1887)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-address-validation
INFO:Detectors:
Reentrancy in MyCarrot._swapAndLiquify(uint256) (MyCarrot.sol#1835-1048):
    External calls:
        - _swapTokensForEth(half) (MyCarrot.sol#1841)
            - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),(block.timestamp + 300)) (MyCarrot.sol#1857-1063)
        - _addLiquidity(otherHalf,newBalance) (MyCarrot.sol#1845)
            - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1872-1879)
    External calls sending eth:
        - _addLiquidity(otherHalf,newBalance) (MyCarrot.sol#1845)
            - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1872-1879)
    State variables written after the call(s):
        - _addLiquidity(otherHalf,newBalance) (MyCarrot.sol#1845)
            - _allowances[owner][spender] = amount (MyCarrot.sol#1847)
        - _addLiquidity(otherHalf,newBalance) (MyCarrot.sol#1845)
            - inSwapAndLiquify = true (MyCarrot.sol#931)
            - inSwapAndLiquify = false (MyCarrot.sol#933)
Reentrancy in MyCarrot._transfer(address,address,uint256) (MyCarrot.sol#1893-1023):
    External calls:
        - _swapAndLiquify(_numTokensSellToAddToLiquidity) (MyCarrot.sol#983)
            - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),(block.timestamp + 300)) (MyCarrot.sol#1857-1063)
        - _swapTokensForETH(_numTokensSellToETH) (MyCarrot.sol#986)
            - uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(tokenAmount,0,path,address(this),(block.timestamp + 300)) (MyCarrot.sol#1857-1063)
    External calls sending eth:
        - _swapAndLiquify(_numTokensSellToAddToLiquidity) (MyCarrot.sol#983)
            - uniswapV2Router.addLiquidityETH(value: ethAmount)(address(this),tokenAmount,0,0,marketingWallet,block.timestamp) (MyCarrot.sol#1872-1879)
    State variables written after the call(s):
        - _swapTokensForETH(_numTokensSellToETH) (MyCarrot.sol#986)
            - _allowances[owner][spender] = amount (MyCarrot.sol#1847)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-2
```

**Result => A static analysis of contract's source code has been performed using slither,
No major issues were found in the output**



FUNCTIONAL TESTING

1- Approve (passed):

<https://testnet.bscscan.com/tx/0x04aff4f19acf80771024348febe887c5c5f54708be7bf9ea170add1a72a01658>

2- Increase Allowance (passed):

<https://testnet.bscscan.com/tx/0xf6d74fac95b75a03ffb7ab1a7595b8353bc82524cc694f22e8f7519b992929dc>

3- Decrease Allowance (passed):

<https://testnet.bscscan.com/tx/0xb7f13bee916abf79d16eeff0649fb46a4a2915b1c0b4cf66ff1ff9ea7091b9435>

4- Change Tax for Liquidity And Marketing (passed):

<https://testnet.bscscan.com/tx/0xc3110b52f8d0911334f2d8ec74cd53e4a62e1686ea908812f1ade0f2faf50a8c>

5- Exclude From Fee (passed):

<https://testnet.bscscan.com/tx/0xe538070079810ef1983d49f24c5f262950d0666c3bb76fc83a6d6b505e88b266>

6- Include In Fee (passed):

<https://testnet.bscscan.com/tx/0x26c313b4895b0c83587172e1560127e4138f554281e1a8db7e5df1732929425f>



MANUAL TESTING

Centralization – Liquidity is added to EOA.

Severity: Medium

function: _addLiquidity

Status: Open

Overview:

Liquidity is added to EOA. It may be drained by the addLiquidityETH.

```
function _addLiquidity(uint256 tokenAmount, uint256 ethAmount)
    private
    lockTheSwap
{
    _approve(address(this), address(uniswapV2Router),
tokenAmount);

    uniswapV2Router.addLiquidityETH{value: ethAmount}(
        address(this),
        tokenAmount,
        0,
        0,
        marketingWallet,
        block.timestamp
    );
}
```

Suggestion:

It is suggested that the address should be a contract address or a dead address.



MANUAL TESTING

Centralization – Missing Events

Severity: Low

subject: Missing Events

Status: Open

Overview:

They serve as a mechanism for emitting and recording data onto the blockchain, making it transparent and easily accessible.

```
function changeMarketingWallet(address newWallet)
    public
    onlyOwner
    returns (bool)
{
    marketingWallet = newWallet;
    return true;
}

function changeTaxForLiquidityAndMarketing(uint256 _taxBuyForLiquidity, uint256 _taxBuyForMarketing, uint256 _taxSellForLiquidity, uint256 _taxSellForMarketing)
    public
    onlyOwner
    returns (bool)
{
    require(_taxBuyForLiquidity+_taxBuyForMarketing) <= 20,
    "ERC20: total tax must not be greater than 20";
    require(_taxSellForLiquidity+_taxSellForMarketing) <= 20,
    "ERC20: total tax must not be greater than 20";
    taxBuyForLiquidity = _taxBuyForLiquidity;
    taxBuyForMarketing = _taxBuyForMarketing;
```



MANUAL TESTING

```
taxSellForLiquidity = _taxSellForLiquidity;
taxSellForMarketing = _taxSellForMarketing;

return true;
}

function changeMaxTxAmount(uint256 _maxTxAmount)
public
onlyOwner
returns (bool)
{
require(_maxTxAmount >= 100_000_000, "ERC20: maxTxAmount
must not be less than 0.1% total supply");
maxTxAmount = _maxTxAmount * 10**_decimals;

return true;
}
function changeMaxWalletAmount(uint256 _maxWalletAmount)
public
onlyOwner
returns (bool)
{
require(_maxWalletAmount >= 100_000_000, "ERC20:
maxWalletAmount must not be less than 0.1% total supply");
maxWalletAmount = _maxWalletAmount * 10**_decimals;

return true;
}
```



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