



Smart Contract Audit

FOR

MetaBot

DATED : 08 October 23'



AUDIT SUMMARY

Project name – MetaBot

Date: 08 October 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	0	0	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/token/0x5348614Ff37DD3A430e0d46A257e02494d70271D>



Token Information

Token Address :

0xfb52370e0FcAc5bfCa44b4e6c09A97Be1875605f

Name: MetaBot

Symbol: MetaBot

Decimals: 18

Network: Binance smart chain

Token Type: BEP20

Owner: 0x2038274Ce8E489E15d22E8B7DeEF79371901e8eC

Deployer:

0x2038274Ce8E489E15d22E8B7DeEF79371901e8eC

Token Supply: 100,000,000

Checksum:

f1c3cb841514c1aadcf11d34d03046b96b491056

Testnet version:

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TOKEN OVERVIEW

buy fee: 0-10%

Sell fee: 0-10%

transfer fee: 0%

Fee Privilege: Owner

Ownership: Owned

Minting: None

Max Tx: No

Blacklist: No

Other Privileges:

- Initial distribution of the tokens
 - Modifying fees
-



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 Limitand 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

0

◆ Low-Risk

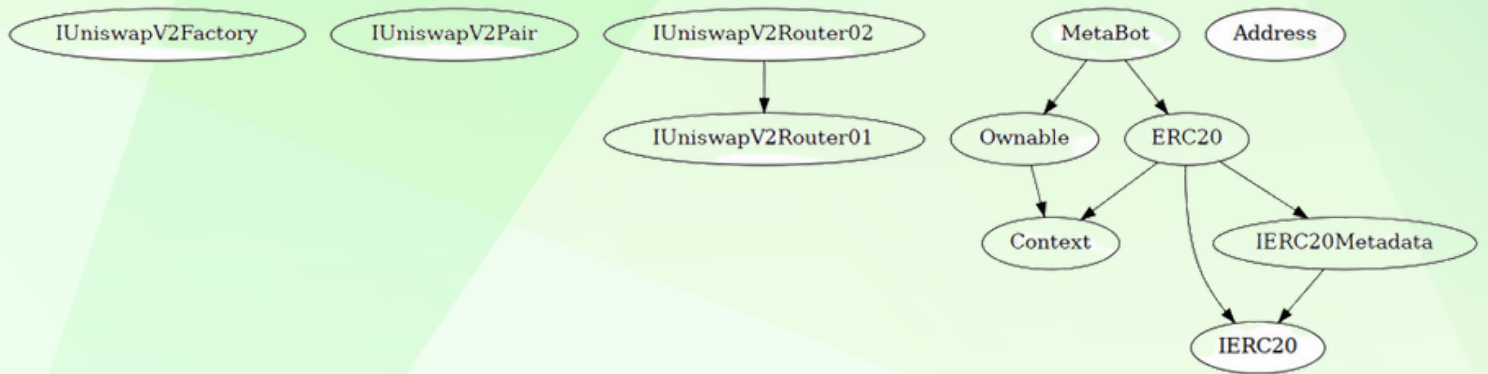
0

◆ Gas Optimization / Suggestions

0



INHERITANCE TREE





POINTS TO NOTE

- **Sum of total buy and sell fees is always less than 10%**
 - **Owner is not able to adjust transfer fees**
 - Owner is not able to blacklist an arbitrary wallet
 - Owner is not able to disable trades
 - Owner is not able to mint new tokens
 - Owner is not able to set maximum wallet and maximum buy/sell/transfer limits
-



STATIC ANALYSIS

```
INFO:Detectors:
Pragma version^0.8.17 (contracts/Token.sol#7) allows old versions
solc-0.8.17 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Low level call in Address.sendValue(address,uint256) (contracts/Token.sol#425-436):
- (success) = recipient.call{value: amount}() (contracts/Token.sol#431)
Low level call in Address.functionCallWithValue(address,bytes,uint256,string) (contracts/Token.sol#514-534):
- (success,returndata) = target.call{value: value}(data) (contracts/Token.sol#524-526)
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#560-573):
- (success,returndata) = target.staticcall(data) (contracts/Token.sol#565)
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#599-612):
- (success,returndata) = target.delegatecall(data) (contracts/Token.sol#604)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
INFO:Detectors:
Function IUniswapV2Pair.DOMAIN_SEPARATOR() (contracts/Token.sol#69) is not in mixedCase
Function IUniswapV2Pair.PERMIT_TYPEHASH() (contracts/Token.sol#71) is not in mixedCase
Function IUniswapV2Pair.MINIMUM_LIQUIDITY() (contracts/Token.sol#102) is not in mixedCase
Function IUniswapV2Router01.WETH() (contracts/Token.sol#142) is not in mixedCase
Event MetaBot.botDevWalletChanged(address) (contracts/Token.sol#938) is not in CapWords
Parameter MetaBot.updateBuyFees(uint256,uint256)._marketingFeeOnBuy (contracts/Token.sol#1029) is not in mixedCase
Parameter MetaBot.updateBuyFees(uint256,uint256)._botDevFeeOnBuy (contracts/Token.sol#1030) is not in mixedCase
Parameter MetaBot.updateSellFees(uint256,uint256)._marketingFeeOnSell (contracts/Token.sol#1046) is not in mixedCase
Parameter MetaBot.updateSellFees(uint256,uint256)._botDevFeeOnSell (contracts/Token.sol#1047) is not in mixedCase
Parameter MetaBot.changeMarketingWallet(address)._marketingWallet (contracts/Token.sol#1063) is not in mixedCase
Parameter MetaBot.changeBotDevWallet(address)._botDevWallet (contracts/Token.sol#1078) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions
INFO:Detectors:
Redundant expression "this (contracts/Token.sol#680)" inContext (contracts/Token.sol#674-683)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements
INFO:Detectors:
Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/Token.sol#147) is too similar to IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/Token.sol#148)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar
INFO:Detectors:
MetaBot.maxFee (contracts/Token.sol#928) should be immutable
MetaBot.uniswapV2Pair (contracts/Token.sol#915) should be immutable
MetaBot.uniswapV2Router (contracts/Token.sol#914) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
INFO:Slither:./contracts/Token.sol analyzed (11 contracts with 88 detectors), 43 result(s) found
```

Result => A static analysis of contract's source code has been performed using slither,

No major issues were found in the output



CONTRACT ASSESMENT

```
| Contract|      Type      |Bases |      |      |
|:-----|:-----|:-----|:-----|:-----|
|  └─ **Function Name** |**Visibility** | **Mutability** |**Modifiers** |
|||||
| **IUniswapV2Factory** | Interface | |||
|  └─ feeTo | External ! | |NO ! |
|  └─ feeToSetter | External ! | |NO ! |
|  └─ getPair | External ! | |NO ! |
|  └─ allPairs | External ! | |NO ! |
|  └─ allPairsLength | External ! | |NO ! |
|  └─ createPair | External ! | ●|NO ! |
|  └─ setFeeTo | External ! | ●|NO ! |
|  └─ setFeeToSetter | External ! | ●|NO ! |
|||||
| **IUniswapV2Pair** | Interface | |||
|  └─ name | External ! | |NO ! |
|  └─ symbol | External ! | |NO ! |
|  └─ decimals | External ! | |NO ! |
|  └─ totalSupply | External ! | |NO ! |
|  └─ balanceOf | External ! | |NO ! |
|  └─ allowance | External ! | |NO ! |
|  └─ approve | External ! | ●|NO ! |
|  └─ transfer | External ! | ●|NO ! |
|  └─ transferFrom | External ! | ●|NO ! |
|  └─ DOMAIN_SEPARATOR | External ! | |NO ! |
|  └─ PERMIT_TYPEHASH | External ! | |NO ! |
|  └─ nonces | External ! | |NO ! |
|  └─ permit | External ! | ●|NO ! |
|  └─ MINIMUM_LIQUIDITY | External ! | |NO ! |
|  └─ factory | External ! | |NO ! |
|  └─ token0 | External ! | |NO ! |
|  └─ token1 | External ! | |NO ! |
|  └─ getReserves | External ! | |NO ! |
|  └─ price0CumulativeLast | External ! ||NO ! |
|  └─ price1CumulativeLast | External ! ||NO ! |
|  └─ kLast | External ! | |NO ! |
|  └─ mint | External ! | ●|NO ! |
|  └─ burn | External ! | ●|NO ! |
```



CONTRACT ASSESMENT

```
|  | swap | External ! | ● | NO ! |
|  | skim | External ! | ● | NO ! |
|  | sync | External ! | ● | NO ! |
|  | initialize | External ! | ● | NO ! |
|||||
| **IUniswapV2Router01** | Interface | |||
|  | factory | External ! | | NO ! |
|  | WETH | External ! | | NO ! |
|  | addLiquidity | External ! | ● | NO ! |
|  | addLiquidityETH | External ! | 💵 | NO ! |
|  | removeLiquidity | External ! | ● | NO ! |
|  | removeLiquidityETH | External ! | ● | NO ! |
|  | removeLiquidityWithPermit | External ! | ● | NO ! |
|  | removeLiquidityETHWithPermit | External ! | ● | NO ! |
|  | swapExactTokensForTokens | External ! | ● | NO ! |
|  | swapTokensForExactTokens | External ! | ● | NO ! |
|  | swapExactETHForTokens | External ! | 💵 | NO ! |
|  | swapTokensForExactETH | External ! | ● | NO ! |
|  | swapExactTokensForETH | External ! | ● | NO ! |
|  | swapETHForExactTokens | External ! | 💵 | NO ! |
|  | quote | External ! | | NO ! |
|  | getAmountOut | External ! | | NO ! |
|  | getAmountIn | External ! | | NO ! |
|  | getAmountsOut | External ! | | NO ! |
|  | getAmountsIn | External ! | | NO ! |
|||||
| **IUniswapV2Router02** | Interface | IUniswapV2Router01 |||
|  | removeLiquidityETHSupportingFeeOnTransferTokens | External ! | ● | NO ! |
|  | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External ! | ● | NO ! |
|  | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ! | ● | NO ! |
|  | swapExactETHForTokensSupportingFeeOnTransferTokens | External ! | 💵 | NO ! |
|  | swapExactTokensForETHSupportingFeeOnTransferTokens | External ! | ● | NO ! |
|||||
| **IERC20** | Interface | |||
|  | totalSupply | External ! | | NO ! |
|  | balanceOf | External ! | | NO ! |
|  | transfer | External ! | ● | NO ! |
|  | allowance | External ! | | NO ! |
|  | approve | External ! | ● | NO ! |
|  | transferFrom | External ! | ● | NO ! |
```



CONTRACT ASSESMENT

|||||

| ****IERC20Metadata**** | Interface | IERC20 |||

| └ | name | External ! | | NO ! |

| └ | symbol | External ! | | NO ! |

| └ | decimals | External ! | | NO ! |

|||||

| ****Address**** | Library | |||

| └ | isContract | Internal 🔒 | | |

| └ | sendValue | Internal 🔒 | ● | |

| └ | functionCall | Internal 🔒 | ● | |

| └ | functionCall | Internal 🔒 | ● | |

| └ | functionCallWithValue | Internal 🔒 | ● | |

| └ | functionCallWithValue | Internal 🔒 | ● | |

| └ | functionStaticCall | Internal 🔒 | | |

| └ | functionStaticCall | Internal 🔒 | | |

| └ | functionDelegateCall | Internal 🔒 | ● | |

| └ | functionDelegateCall | Internal 🔒 | ● | |

| └ | verifyCallResultFromTarget | Internal 🔒 | | |

| └ | verifyCallResult | Internal 🔒 | | |

| └ | _revert | Private 🔒 | | |

|||||

| ****Context**** | Implementation | |||

| └ | _msgSender | Internal 🔒 | | |

| └ | _msgData | Internal 🔒 | | |

|||||

| ****Ownable**** | Implementation | Context |||

| └ | <Constructor> | Public ! | ● | NO ! |

| └ | owner | Public ! | | NO ! |

| └ | renounceOwnership | Public ! | ● | onlyOwner |

| └ | transferOwnership | Public ! | ● | onlyOwner |

|||||

| ****ERC20**** | Implementation | Context, IERC20, IERC20Metadata |||

| └ | <Constructor> | Public ! | ● | NO ! |

| └ | name | Public ! | | NO ! |

| └ | symbol | Public ! | | NO ! |

| └ | decimals | Public ! | | NO ! |

| └ | totalSupply | Public ! | | NO ! |

| └ | balanceOf | Public ! | | NO ! |

| └ | transfer | Public ! | ● | NO ! |

| └ | allowance | Public ! | | NO ! |

| └ | approve | Public ! | ● | NO ! |

| └ | transferFrom | Public ! | ● | NO ! |

| └ | increaseAllowance | Public ! | ● | NO ! |

| └ | decreaseAllowance | Public ! | ● | NO ! |

| └ | _transfer | Internal 🔒 | ● | |

| └ | _mint | Internal 🔒 | ● | |



CONTRACT ASSESMENT

```
|  ↳ | _burn | Internal 🔒 | ● | |
|  ↳ | _approve | Internal 🔒 | ● | |
|  ↳ | _beforeTokenTransfer | Internal 🔒 | ● | |
|  ↳ | _afterTokenTransfer | Internal 🔒 | ● | |
|||||
| **MetaBot** | Implementation | ERC20, Ownable |||
|  ↳ | <Constructor> | Public ! | ● | ERC20 |
|  ↳ | <Receive Ether> | External ! | 💵 | NO ! |
|  ↳ | claimStuckTokens | External ! | ● | onlyOwner |
|  ↳ | excludeFromFees | External ! | ● | onlyOwner |
|  ↳ | isExcludedFromFees | Public ! | | NO ! |
|  ↳ | updateBuyFees | Public ! | ● | onlyOwner |
|  ↳ | updateSellFees | Public ! | ● | onlyOwner |
|  ↳ | changeMarketingWallet | External ! | ● | onlyOwner |
|  ↳ | changebotDevWallet | External ! | ● | onlyOwner |
|  ↳ | _transfer | Internal 🔒 | ● | |
|  ↳ | setSwapTokensAtAmount | External ! | ● | onlyOwner |
|  ↳ | swapAndSendMarketing | Private 🔒 | ● | |
|  ↳ | swapAndSendbotDev | Private 🔒 | ● | |
```

Legend

```
| Symbol| Meaning |
|:-----:|-----|
|  ● | Function can modify state |
|  💵 | Function is payable |
```



FUNCTIONAL TESTING

1- Adding liquidity (**passed**):

<https://testnet.bscscan.com/tx/0x2e92bbf989af690dd8102874ab7d5b98c31a68725fba612f3f249ac8a1a48c27>

2- Buying when excluded (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x1c38bd7d7ba9dc1bd3474ed16e5466262e1dc94ed6696f802516b2e8a1f740ce>

3- Selling when excluded (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x4f4785c3e5382363100a66b9eeab89b2871ac65236a12473abce58a1a884ca5b>

4- Transferring when excluded from fees (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0xa2cd46311da04f36e940af71d6685aae13e3b5360fafc005204048ca38851a6f>

5- Buying when not excluded from fees (tax 0-10%) (**passed**):

<https://testnet.bscscan.com/tx/0x55ae91f68d41212206672a2f3b495c972b88dde89ecb2c9a5e4cf4c933ce7008>

6- Selling when not excluded from fees (tax 0-10%) (**passed**):

<https://testnet.bscscan.com/tx/0xf32880cef5e12913827b317964dd610ca61d71ea42382b008a54d5fa5695b337>

7- Transferring when not excluded from fees (0% tax) (**passed**):

<https://testnet.bscscan.com/tx/0xd771fede0c2c7b5cf22f84a828ba2bc7d10f63b95ee3f3418a4ef542c50cbb75>

8- Internal swap (BNB set to marketing and bot wallet) (**passed**):

<https://testnet.bscscan.com/tx/0xf32880cef5e12913827b317964dd610ca61d71ea42382b008a54d5fa5695b337>



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