



Smart Contract Audit

FOR
TopTrade

DATED : 6 May 23'



AUDIT SUMMARY

Project name – TopTrade

Date: 6 May, 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/0x312bc6d7952f958659541cf4b8ac670213a576c6>



Token Information

Token Name : TopTrade

Token Symbol: TTT

Decimals: 18

Token Supply: 1,000,000,000

Token Address:

0x2cb63fCD1380a8aD0Ff5bA16DdCBDF4935154Da8

Checksum:

80b4b14b6f2ec91de8765d5ba8fe52cf73411863

Owner:

0xF0FB9727f01F3F034eEA7cdA479776D331f60187

Deployer:

0xF0FB9727f01F3F034eEA7cdA479776D331f60187



TOKEN OVERVIEW

Fees:

Buy Fees: 2%

Sell Fees: 2%

Transfer Fees: 0%

Fees Privilege: None

Ownership: Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: changing swap threshold - including
in fees - excluding from 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.

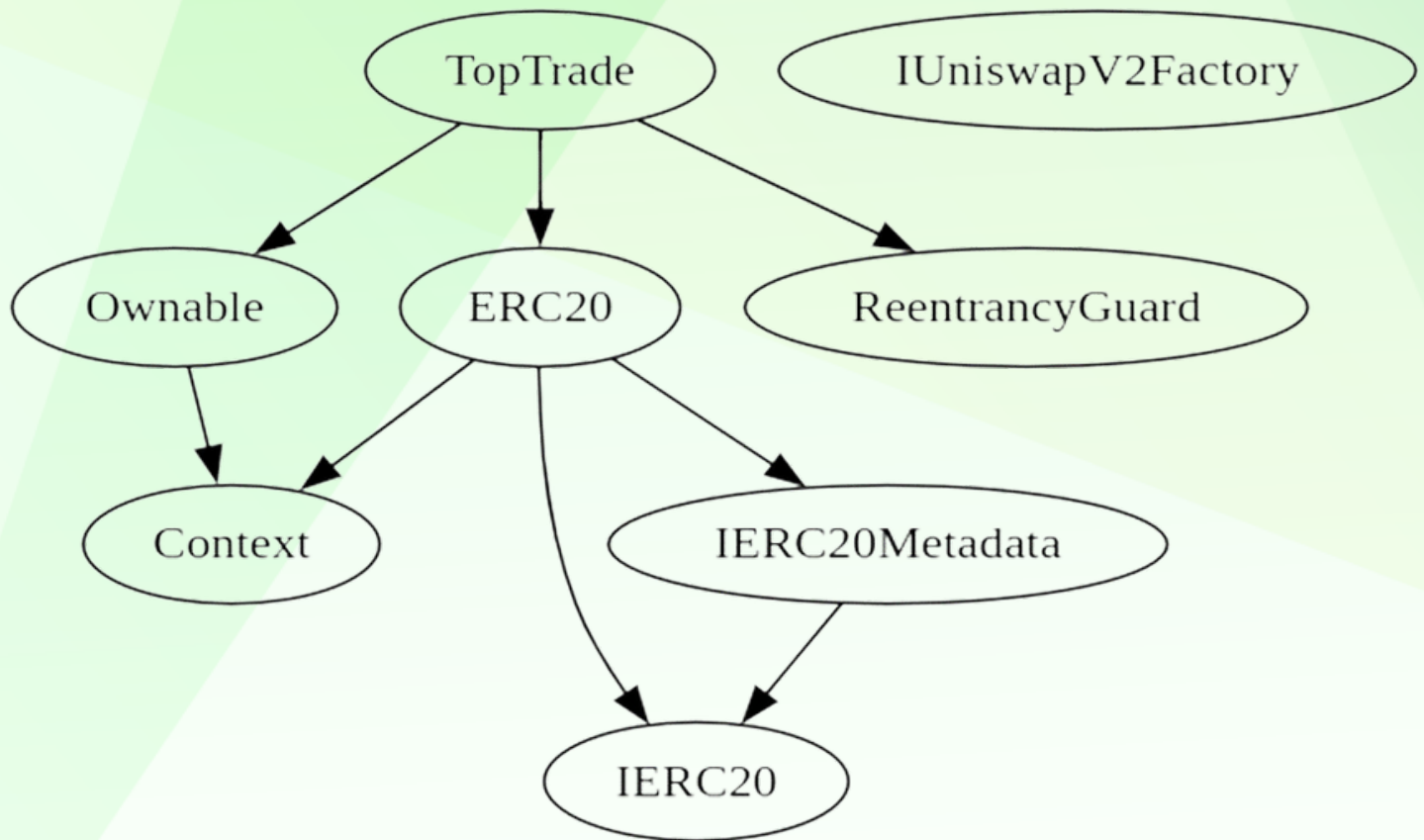
Findings

Severity

Found

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

INHERITANCE TREE



POINTS TO NOTE

- Owner is not able to change buy/sell fee (2% always)
 - Owner is not able to set transfer tax (0% always)
 - Owner is not able to set a max buy/transfer/wallet/sell amount
 - Owner is able to blacklist an arbitrary wallet
 - Owner is able to disable trades
 - Owner is not able to mint new tokens
 - Trades are enabled for holders at any time (no manual enabling is needed)
 - Contract has 2% tax on buy or sells and this tax is used for marketing
 - There is no reflections for hodlers of the token
-



CONTRACT ASSESMENT

Contract	Type	Bases			
:-----: :-----: :-----: :-----: :-----:					
L	**Function Name**	**Visibility**	**Mutability**	**Modifiers**	
Context Implementation					
L	_msgSender	Internal	🔒		
L	_msgData	Internal	🔒		
IUniswapV2Factory Interface					
L	feeTo	External	!		NO !
L	feeToSetter	External	!		NO !
L	getPair	External	!		NO !
L	allPairs	External	!		NO !
L	allPairsLength	External	!		NO !
L	createPair	External	!		NO !
L	setFeeTo	External	!		NO !
L	setFeeToSetter	External	!		NO !
IUniswapV2Pair Interface					
L	name	External	!		NO !
L	symbol	External	!		NO !
L	decimals	External	!		NO !
L	totalSupply	External	!		NO !
L	balanceOf	External	!		NO !
L	allowance	External	!		NO !
L	approve	External	!		NO !
L	transfer	External	!		NO !
L	transferFrom	External	!		NO !
L	DOMAIN_SEPARATOR	External	!		NO !
L	PERMIT_TYPEHASH	External	!		NO !
L	nonces	External	!		NO !
L	permit	External	!		NO !
L	MINIMUM_LIQUIDITY	External	!		NO !
L	factory	External	!		NO !
L	token0	External	!		NO !
L	token1	External	!		NO !
L	getReserves	External	!		NO !
L	price0CumulativeLast	External	!		NO !
L	price1CumulativeLast	External	!		NO !
L	kLast	External	!		NO !
L	mint	External	!		NO !
L	burn	External	!		NO !
L	swap	External	!		NO !
L	skim	External	!		NO !

CONTRACT ASSESMENT

```

└─ 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 ! |
|||||
**IERC20Permit** | Interface | |||
└─ permit | External ! | ● |NO ! |
└─ nonces | External ! | |NO ! |
└─ DOMAIN_SEPARATOR | External ! | |NO ! |
|||||
**Address** | Library | |||
└─ isContract | Internal 🔒 | ||
└─ sendValue | Internal 🔒 | ● ||
└─ functionCall | Internal 🔒 | ● ||
└─ functionCall | Internal 🔒 | ● ||
└─ functionCallWithValue | Internal 🔒 | ● ||
└─ functionCallWithValue | Internal 🔒 | ● ||

```

CONTRACT ASSESMENT

```

└─ functionStaticCall | Internal 🔒 | ||
└─ functionStaticCall | Internal 🔒 | ||
└─ functionDelegateCall | Internal 🔒 | ● ||
└─ functionDelegateCall | Internal 🔒 | ● ||
└─ verifyCallResultFromTarget | Internal 🔒 | ||
└─ verifyCallResult | Internal 🔒 | ||
└─ _revert | Private 🔒 | ||

```

```

|||||
**IERC20** | Interface | |||
└─ totalSupply | External ! | |NO ! |
└─ balanceOf | External ! | |NO ! |
└─ transfer | External ! | ● |NO ! |
└─ allowance | External ! | |NO ! |
└─ approve | External ! | ● |NO ! |
└─ transferFrom | External ! | ● |NO ! |

```

```

|||||
**SafeERC20** | Library | |||
└─ safeTransfer | Internal 🔒 | ● ||
└─ safeTransferFrom | Internal 🔒 | ● ||
└─ safeApprove | Internal 🔒 | ● ||
└─ safeIncreaseAllowance | Internal 🔒 | ● ||
└─ safeDecreaseAllowance | Internal 🔒 | ● ||
└─ safePermit | Internal 🔒 | ● ||
└─ _callOptionalReturn | Private 🔒 | ● ||

```

```

|||||
**IERC20Metadata** | Interface | IERC20 |||
└─ name | External ! | |NO ! |
└─ symbol | External ! | |NO ! |
└─ decimals | External ! | |NO ! |

```

```

|||||
**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 ! |

```

CONTRACT ASSESMENT

```

| L | _transfer | Internal | 🔒 | ● | |
| L | _mint | Internal | 🔒 | ● | |
| L | _burn | Internal | 🔒 | ● | |
| L | _approve | Internal | 🔒 | ● | |
| L | _spendAllowance | Internal | 🔒 | ● | |
| L | _beforeTokenTransfer | Internal | 🔒 | ● | |
| L | _afterTokenTransfer | Internal | 🔒 | ● | |
|||||
| **Ownable** | Implementation | Context |||
| L | <Constructor> | Public | ! | ● | NO ! |
| L | owner | Public | ! | | NO ! |
| L | _checkOwner | Internal | 🔒 | | |
| L | renounceOwnership | Public | ! | ● | onlyOwner |
| L | transferOwnership | Public | ! | ● | onlyOwner |
| L | _transferOwnership | Internal | 🔒 | ● | |
|||||
| **ReentrancyGuard** | Implementation | |||
| L | <Constructor> | Public | ! | ● | NO ! |
| L | _nonReentrantBefore | Private | 🔒 | ● | |
| L | _nonReentrantAfter | Private | 🔒 | ● | |
| L | _reentrancyGuardEntered | Internal | 🔒 | | |
|||||
| **TopTrade** | Implementation | ERC20, Ownable, ReentrancyGuard |||
| L | <Constructor> | Public | ! | ● | ERC20 |
| L | <Receive Ether> | External | ! | 💰 | NO ! |
| L | <Fallback> | External | ! | 💰 | NO ! |
| L | getRouterAddress | Public | ! | | NO ! |
| L | claimStuckTokens | External | ! | ● | onlyOwner |
| L | excludeFromFees | External | ! | ● | onlyOwner |
| L | isExcludedFromFees | Public | ! | | NO ! |
| L | setAutomatedMarketMakerPair | Public | ! | ● | onlyOwner |
| L | isAutomatedMarketMakerPair | Public | ! | | NO ! |
| L | toggleSwapBack | External | ! | ● | onlyOwner |
| L | setSwapTokensAtAmount | External | ! | ● | onlyOwner |
| L | _transfer | Internal | 🔒 | ● | |
| L | _swapBack | Internal | 🔒 | ● | |
| L | sendBNB | Internal | 🔒 | ● | nonReentrant |
| L | manualSwapBack | External | ! | ● | NO ! |

```





CONTRACT ASSESMENT

Legend

| Symbol | Meaning |

|:-----:|-----|

|  | Function can modify state |

|  | Function is payable |



STATIC ANALYSIS

```
Address.sendValue(address,uint256) (contracts/Token.sol#372-383) is never used and should be removed
Address.verifyCallResult(bool,bytes,string) (contracts/Token.sol#512-522) is never used and should be removed
Context.msgData() (contracts/Token.sol#14-16) is never used and should be removed
ERC20.burn(address,uint256) (contracts/Token.sol#823-838) is never used and should be removed
ReentrancyGuard.reentrancyGuardEntered() (contracts/Token.sol#952-954) is never used and should be removed
SafeERC20.safeApprove(ERC20,address,uint256) (contracts/Token.sol#590-603) is never used and should be removed
SafeERC20.safeDecreaseAllowance(ERC20,address,uint256) (contracts/Token.sol#621-642) is never used and should be removed
SafeERC20.safeIncreaseAllowance(ERC20,address,uint256) (contracts/Token.sol#605-619) is never used and should be removed
SafeERC20.safePermit(ERC20Permit,address,address,uint256,uint256,uint8,bytes32,bytes32) (contracts/Token.sol#644-661) is never used and should be removed
SafeERC20.safeTransferFrom(ERC20,address,address,uint256) (contracts/Token.sol#578-588) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

Pragma version^0.8.17 (contracts/Token.sol#7) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.19 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Low level call in Address.sendValue(address,uint256) (contracts/Token.sol#372-383):
- (success) = recipient.call(value: amount)() (contracts/Token.sol#378)
Low level call in Address.functionCallWithValue(address,bytes,uint256,string) (contracts/Token.sol#420-440):
- (success, returndata) = target.call(value: value)(data) (contracts/Token.sol#430-432)
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/Token.sol#454-467):
- (success, returndata) = target.staticcall(data) (contracts/Token.sol#459)
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/Token.sol#481-494):
- (success, returndata) = target.delegatecall(data) (contracts/Token.sol#486)
Low level call in TopTrade.sendBNB(address,uint256) (contracts/Token.sol#1177-1186):
- (success) = address(to).call{value: amount}() (contracts/Token.sol#1183)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Function IUniswapV2Pair.DOMAIN_SEPARATOR() (contracts/Token.sol#83) is not in mixedCase
Function IUniswapV2Pair.PERMIT_TYPEHASH() (contracts/Token.sol#85) is not in mixedCase
Function IUniswapV2Pair.MINIMUM_LIQUIDITY() (contracts/Token.sol#116) is not in mixedCase
Function IUniswapV2Router01.WETH() (contracts/Token.sol#158) is not in mixedCase
Function IERC20Permit.DOMAIN_SEPARATOR() (contracts/Token.sol#364) is not in mixedCase
Parameter TopTrade.sendBNB(address,uint256). to (contracts/Token.sol#1177) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/Token.sol#163) is too similar to IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/Token.sol#164)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

TopTrade.marketingWallet (contracts/Token.sol#965) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant

TopTrade.buyTax (contracts/Token.sol#961) should be immutable
TopTrade.marketingWalletShares (contracts/Token.sol#967) should be immutable
TopTrade.sellTax (contracts/Token.sol#962) should be immutable
TopTrade.swapTokensLimit (contracts/Token.sol#970) should be immutable
TopTrade.taxDenominator (contracts/Token.sol#960) should be immutable
TopTrade.totalTax (contracts/Token.sol#963) should be immutable
TopTrade.uniswapV2Pair (contracts/Token.sol#975) should be immutable
TopTrade.uniswapV2Router (contracts/Token.sol#974) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
```

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

No major issues were found in the output



FUNCTIONAL TESTING

Router (PCS V2):

0xD99D1c33F9fC3444f8101754aBC46c52416550D1

All the functionalities have been tested, no issues were found

1- Adding liquidity (passed):

<https://testnet.bscscan.com/tx/0x8281e5fd1899311ab50c54be9b3f3d0668f8269e1ec72e0327714ba7ab69edf2>

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

<https://testnet.bscscan.com/tx/0x67cdd9a5a33c76633844b8e149e46cea8a7e30080447dd65ce019d16d25b166f>

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

<https://testnet.bscscan.com/tx/0x75a71c911e215945cdc13eaf3dbd74ac560f5a2a80f7983b55eec698ac4abaea>

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

<https://testnet.bscscan.com/tx/0x54639a8682e009799569e1010c6869e655546e875cc9acb30d901d34259e77fe>

5- Buying when not excluded from fees (2% tax) (passed):

<https://testnet.bscscan.com/tx/0x44dc5d58f7c3f96d05e9cc4a1e454616b934dfaf773501b35668d8c949c10fb8>

6- Selling when not excluded from fees (2% tax) (passed):

<https://testnet.bscscan.com/tx/0xf7febc721c628723138a9bcb85e1d7c77359e2890723676089312b8ce9c1cf1c>



FUNCTIONAL TESTING

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

<https://testnet.bscscan.com/tx/0x8a7adaf6f1dcdd646b5303b6bf55328486671d38ae82c346c22a68abd0780dff>

7- Internal swap (marketing wallet received BNB) (passed):

<https://testnet.bscscan.com/address/0x41b10ac1b9dde812d2bfd0bd98904c81e0075785#internaltx>



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