auditace.tech

AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

TROLLBNB

DATED : 03 May 23'

AUDIT SUMMARY

Project name – TROLLBNB

Date: 02 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	3	1	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 done on BSC Test network, each test has its transaction has attached to it.

3- Slither : Static Analysis

Testnet Link: all tests were done using this contract, tests are done on BSC Testnet

https://testnet.bscscan.com/token/0x134872f5Da7f2f0e8c97356f865991bB37b94CB3

Token Information

Token Name : TROLLBNB

Token Symbol: TROLLBNB

Decimals: 9

Token Supply:1000000000000000

Token Address:
0xEf425A181893Fa71DE650c5E8995E34eE56637e8

Checksum:
1edf17eccc5497dee4a0678553803bd74717d58f

Owner:
0x50Eae60B6CD960a62cdc767a3A1Eb3b102CB57C1

Deployer:
0x50Eae60B6CD960a62cdc767a3A1Eb3b102CB57C1

TOKEN OVERVIEW

Fees:

Buy Fees: upto 10 %

Sell Fees: upto 10 %

Transfer Fees: 10%

Fees Privilige: none

Ownership : Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: yes

Blacklist: No

Other Priviliges: modifying swap threshold - toggling internal swap - excluding wallets from fee - including wallets in fee

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 isexercised 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

- [x] Return values of low-level calls
- [x] Private modifier
- [x] Multiple Sends
- [x] Using Suicide
- [x] Gas Limitand Loops
- [x] Address hardcoded
- [x] Exception Disorder
- [x] Using inline assembly
- [x] Divide before multiply
- [x] Missing Zero Address Validation
- [x] Compiler version not fixed
- [x] **Gasless Send**
- [x] Using block.timestamp
- [x] Re-entrancy
- [x] Tautology or contradiction
- [x] Timestamp Dependence
- [x] Revert/require functions
- [x] Use of tx.origin
- [x] Integer overflow/underflow
- [x] Dangerous strict equalities
- [x] Using SHA3
- [x] Using throw

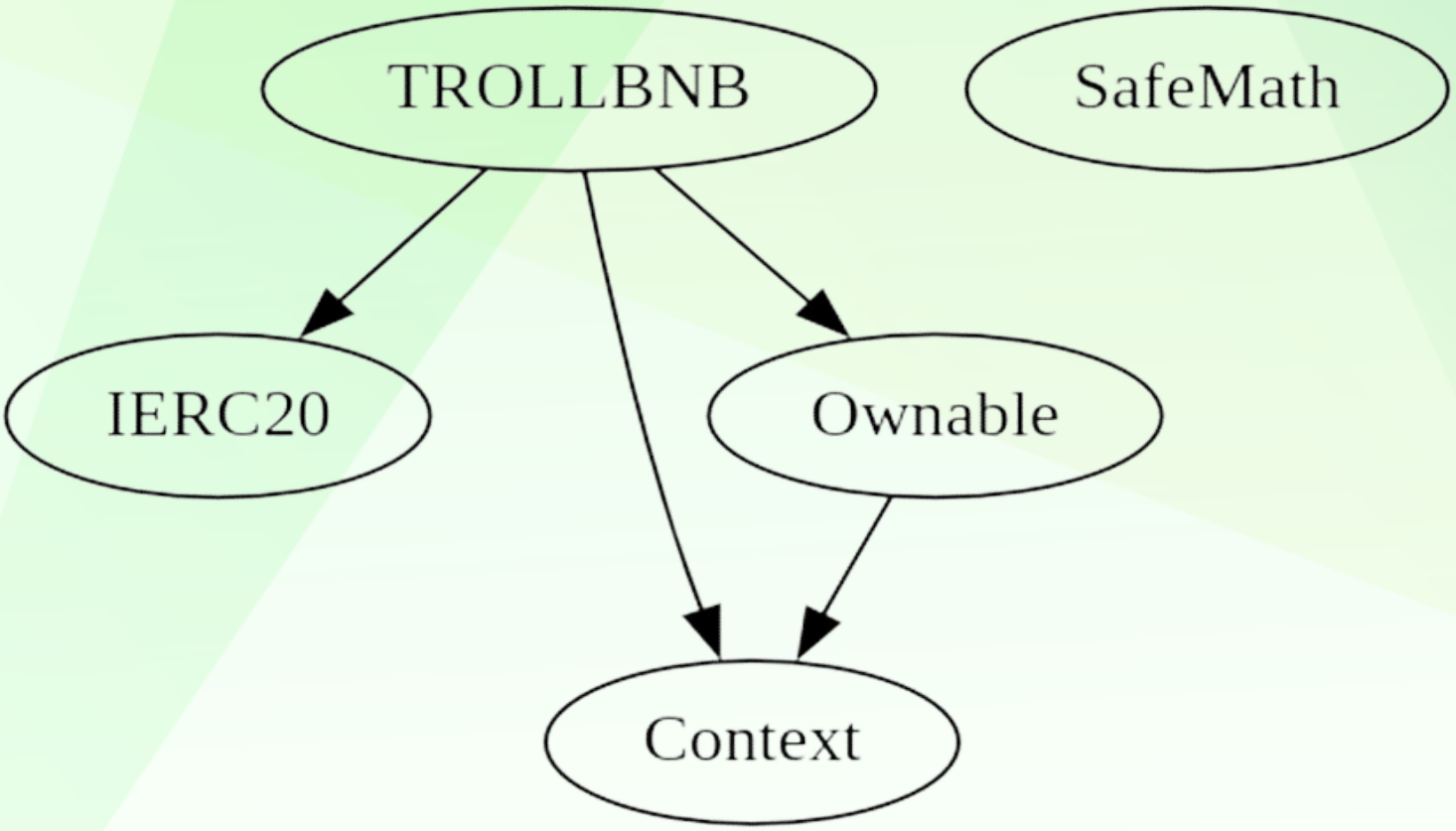
CLASSIFICATION OF RISK

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	3
Medium-Risk	1
Low-Risk	0
Gas Optimization / Suggestions	0

INHERITANCE TREE



POINTS TO NOTE

- Owner is not able to change buy/sell/transfer taxes (10%)
- Owner is not able to set max buy/sell/transfer/hold amount
- Owner is not able to blacklist an arbitrary wallet
- Owner is not able to disable trades
- Owner has to enable trades manually for holders
- Owner is not able to mint new tokens
- Owner is able to set a max wallet/transfer/buy/sell amount.

CONTRACT ASSESMENT

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
IERC20	Interface			
└	totalSupply	External ❗		NO❗
└	balanceOf	External ❗		NO❗
└	transfer	External ❗	🛑	NO❗
└	allowance	External ❗		NO❗
└	approve	External ❗	🛑	NO❗
└	transferFrom	External ❗	🛑	NO❗
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>	Public ❗	🛑	NO❗
└	owner	Public ❗		NO❗
└	renounceOwnership	Public ❗	🛑	onlyOwner
└	transferOwnership	Public ❗	🛑	onlyOwner
IUniswapV2Factory	Interface			

CONTRACT ASSESMENT

└	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❗
└	swap	External ❗	🛑		NO❗
└	skim	External ❗	🛑		NO❗
└	sync	External ❗	🛑		NO❗
└	initialize	External ❗	🛑		NO❗
IUniswapV2Router01	Interface			
└	factory	External ❗			NO❗
└	WETH	External ❗			NO❗

CONTRACT ASSESMENT

└	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❗
TROLLBNB	Implementation	Context, IERC20, Ownable		
└	<Constructor>	Public ❗	🛑	NO❗
└	name	External ❗		NO❗
└	symbol	External ❗		NO❗
└	decimals	External ❗		NO❗
└	totalSupply	External ❗		NO❗
└	isExcludedFromMaxTx	External ❗		NO❗
└	balanceOf	Public ❗		NO❗
└	transfer	External ❗	🛑	NO❗
└	allowance	External ❗		NO❗
└	approve	External ❗	🛑	NO❗
└	transferFrom	External ❗	🛑	NO❗
└	increaseAllowance	External ❗	🛑	NO❗
└	decreaseAllowance	External ❗	🛑	NO❗
└	isExcludedFromReward	External ❗		NO❗
└	totalFees	External ❗		NO❗

CONTRACT ASSESMENT

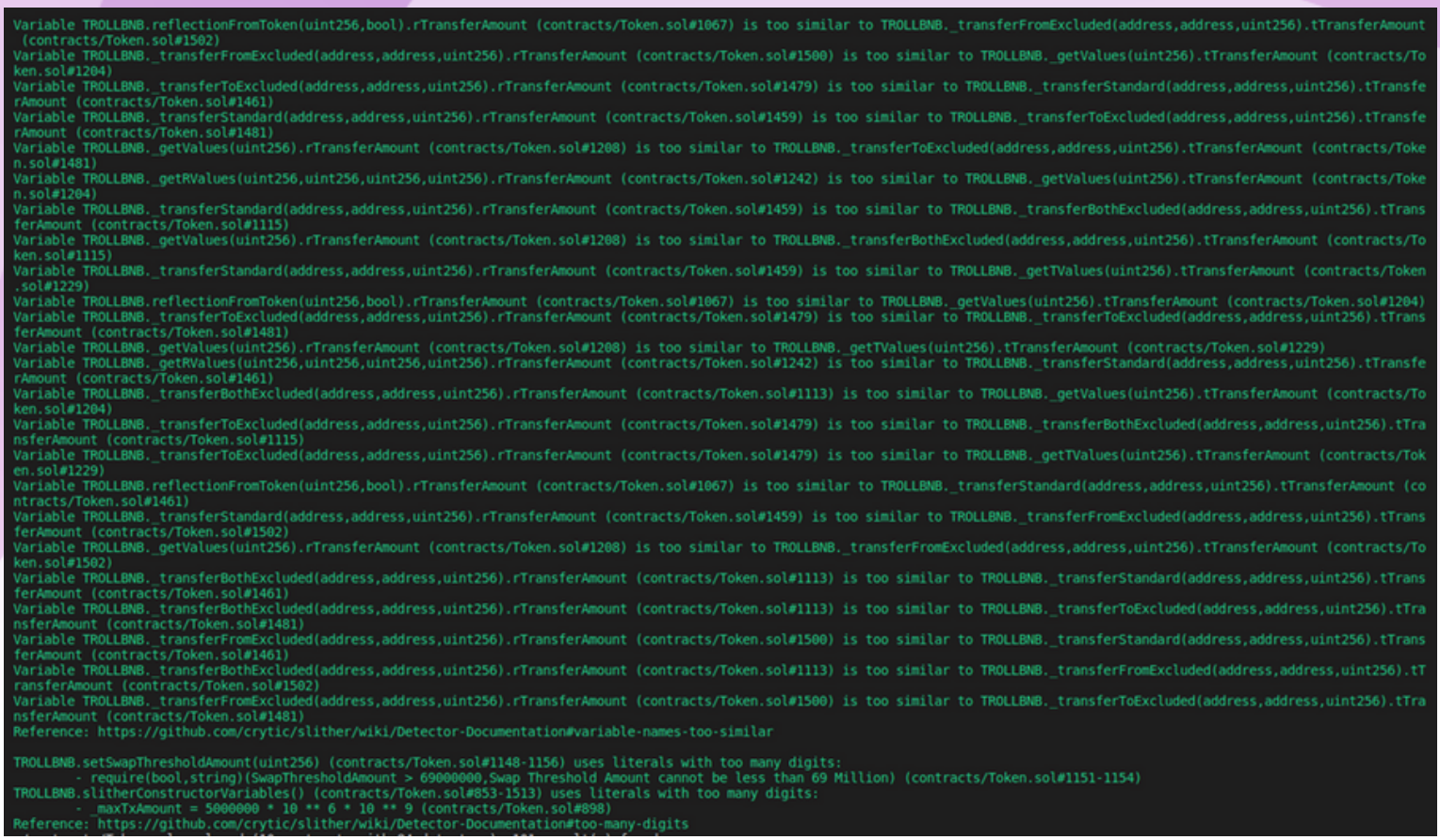
└	excludeFromMaxTx	External ❗	🛑	onlyOwner
└	deliver	External ❗	🛑	NO❗
└	reflectionFromToken	External ❗		NO❗
└	tokenFromReflection	Public ❗		NO❗
└	excludeFromReward	External ❗	🛑	onlyOwner
└	includeInReward	External ❗	🛑	onlyOwner
└	_transferBothExcluded	Private 🔐	🛑	
└	excludeFromFee	External ❗	🛑	onlyOwner
└	includeInFee	External ❗	🛑	onlyOwner
└	setMarketingWallet	External ❗	🛑	onlyOwner
└	setDevWallet	External ❗	🛑	onlyOwner
└	setBurningAddress	External ❗	🛑	onlyOwner
└	setSwapThresholdAmount	External ❗	🛑	onlyOwner
└	allowtrading	External ❗	🛑	onlyOwner
└	setMigrationWallet	External ❗	🛑	onlyOwner
└	setSwapAndLiquifyEnabled	External ❗	🛑	onlyOwner
└	setMaxTxPercent	External ❗	🛑	onlyOwner
└	manualSwap	External ❗	🛑	NO❗
└	<Receive Ether>	External ❗	💵	NO❗
└	_reflectFee	Private 🔐	🛑	
└	_getValues	Private 🔐		
└	_getTValues	Private 🔐		
└	_getRValues	Private 🔐		
└	_getRate	Private 🔐		
└	_getCurrentSupply	Private 🔐		
└	_takeLiquidity	Private 🔐	🛑	
└	calculateTaxFee	Private 🔐		
└	calculateLiquidityFee	Private 🔐		
└	removeAllFee	Private 🔐	🛑	
└	restoreAllFee	Private 🔐	🛑	
└	isExcludedFromFee	External ❗		NO❗
└	_approve	Private 🔐	🛑	
└	_transfer	Private 🔐	🛑	
└	swapAndLiquify	Private 🔐	🛑	lockTheSwap
└	swapTokensForEth	Private 🔐	🛑	
└	addLiquidity	Private 🔐	🛑	
└	_tokenTransfer	Private 🔐	🛑	
└	_transferStandard	Private 🔐	🛑	
└	_transferToExcluded	Private 🔐	🛑	
└	_transferFromExcluded	Private 🔐	🛑	

CONTRACT ASSESMENT

Legend

Symbol	Meaning
	Function can modify state
	Function is payable

STATIC ANALYSIS



```
Variable TROLLBNB.reflectionFromToken(uint256,bool).rTransferAmount (contracts/Token.sol#1067) is too similar to TROLLBNB._transferFromExcluded(address,address,uint256).tTransferAmount
 (contracts/Token.sol#1502)
Variable TROLLBNB._transferFromExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1500) is too similar to TROLLBNB._getValues(uint256).tTransferAmount (contracts/To
ken.sol#1204)
Variable TROLLBNB._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1479) is too similar to TROLLBNB._transferStandard(address,address,uint256).tTransfe
rAmount (contracts/Token.sol#1461)
Variable TROLLBNB._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#1459) is too similar to TROLLBNB._transferToExcluded(address,address,uint256).tTransfe
rAmount (contracts/Token.sol#1481)
Variable TROLLBNB._getValues(uint256).rTransferAmount (contracts/Token.sol#1208) is too similar to TROLLBNB._transferToExcluded(address,address,uint256).tTransferAmount (contracts/Toke
n.sol#1481)
Variable TROLLBNB._getRValues(uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#1242) is too similar to TROLLBNB._getValues(uint256).tTransferAmount (contracts/Toke
n.sol#1204)
Variable TROLLBNB._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#1459) is too similar to TROLLBNB._transferBothExcluded(address,address,uint256).tTrans
ferAmount (contracts/Token.sol#1115)
Variable TROLLBNB._getValues(uint256).rTransferAmount (contracts/Token.sol#1208) is too similar to TROLLBNB._transferBothExcluded(address,address,uint256).tTransferAmount (contracts/To
ken.sol#1115)
Variable TROLLBNB._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#1459) is too similar to TROLLBNB._getTValues(uint256).tTransferAmount (contracts/Token
.sol#1229)
Variable TROLLBNB.reflectionFromToken(uint256,bool).rTransferAmount (contracts/Token.sol#1067) is too similar to TROLLBNB._getValues(uint256).tTransferAmount (contracts/Token.sol#1204)
Variable TROLLBNB._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1479) is too similar to TROLLBNB._transferToExcluded(address,address,uint256).tTrans
ferAmount (contracts/Token.sol#1481)
Variable TROLLBNB._getValues(uint256).rTransferAmount (contracts/Token.sol#1208) is too similar to TROLLBNB._getTValues(uint256).tTransferAmount (contracts/Token.sol#1229)
Variable TROLLBNB._getRValues(uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#1242) is too similar to TROLLBNB._transferStandard(address,address,uint256).tTransfe
rAmount (contracts/Token.sol#1461)
Variable TROLLBNB._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1113) is too similar to TROLLBNB._getValues(uint256).tTransferAmount (contracts/To
ken.sol#1204)
Variable TROLLBNB._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1479) is too similar to TROLLBNB._transferBothExcluded(address,address,uint256).tTra
nsferAmount (contracts/Token.sol#1115)
Variable TROLLBNB._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1479) is too similar to TROLLBNB._getTValues(uint256).tTransferAmount (contracts/Tok
en.sol#1229)
Variable TROLLBNB.reflectionFromToken(uint256,bool).rTransferAmount (contracts/Token.sol#1067) is too similar to TROLLBNB._transferStandard(address,address,uint256).tTransferAmount (co
ntracts/Token.sol#1461)
Variable TROLLBNB._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#1459) is too similar to TROLLBNB._transferFromExcluded(address,address,uint256).tTrans
ferAmount (contracts/Token.sol#1502)
Variable TROLLBNB._getValues(uint256).rTransferAmount (contracts/Token.sol#1208) is too similar to TROLLBNB._transferFromExcluded(address,address,uint256).tTransferAmount (contracts/To
ken.sol#1502)
Variable TROLLBNB._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1113) is too similar to TROLLBNB._transferStandard(address,address,uint256).tTrans
ferAmount (contracts/Token.sol#1461)
Variable TROLLBNB._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1113) is too similar to TROLLBNB._transferToExcluded(address,address,uint256).tTra
nsferAmount (contracts/Token.sol#1481)
Variable TROLLBNB._transferFromExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1500) is too similar to TROLLBNB._transferStandard(address,address,uint256).tTrans
ferAmount (contracts/Token.sol#1461)
Variable TROLLBNB._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1113) is too similar to TROLLBNB._transferFromExcluded(address,address,uint256).tT
ransferAmount (contracts/Token.sol#1502)
Variable TROLLBNB._transferFromExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#1500) is too similar to TROLLBNB._transferToExcluded(address,address,uint256).tTra
nsferAmount (contracts/Token.sol#1481)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

TROLLBNB.setSwapThresholdAmount(uint256) (contracts/Token.sol#1148-1156) uses literals with too many digits:
        - require(bool,string)(SwapThresholdAmount > 69000000,Swap Threshold Amount cannot be less than 69 Million) (contracts/Token.sol#1151-1154)
TROLLBNB.slitherConstructorVariables() (contracts/Token.sol#853-1513) uses literals with too many digits:
        - _maxTxAmount = 5000000 * 10 ** 6 * 10 ** 9 (contracts/Token.sol#898)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits
```

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/0x58aa682df13fae685b392da55b759f07e4a25611f4db3fb00959a1a8906617d8

2- Buying when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0x148353c20b75561707774c8eafff8223ade0b37dd2847e04eeb71e9445140070

3- Selling when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0x1ff70dba76c0019e93635f330203d935fd8e9b1fdf203da2596d4a6d0d4b1f88

4- Transferring when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0x15227b475814dbe967f4a120c8fd672a50c1b7a6d141a4ab17761309fa2498e6

5- Buying when not excluded (10% tax) (passed):
https://testnet.bscscan.com/tx/0x7289223f4d3d96819fae35a8cb82ba91ec0306d6fa92f440970749ab1bb3e4e6

6- Selling when not excluded (10% tax) (passed):
https://testnet.bscscan.com/tx/0x8b4c768ec2aba846e50e7d8488d1335c74e0fd8d059d8c9c87085eacdc11d476

FUNCTIONAL TESTING

7- Transferring when not excluded (10% tax) (passed):
https://testnet.bscscan.com/tx/0x169d73becd01ff7f68d3a7a9fd4acb4a144bd4462bc12ad737b7cd90e90e62b3

8- Internal swap (auto-liquidity, fee wallets receiving bnb) (passed):
https://testnet.bscscan.com/tx/0x8b4c768ec2aba846e50e7d8488d1335c74e0fd8d059d8c9c87085eacdc11d476

MANUAL TESTING

Centralization - Owner Must Enable Trades

Severity: High / Informational

Function: allowtrading

Status: Resolved (Trading is open)

Overview:

The owner is required to enable trading for investors. If trading remains disabled, token holders will not have the ability to buy, sell, or transfer their tokens.

```
function allowtrading() external onlyOwner {
    canTrade = true;
}
```

Recommendation:

While the presence of this function is considered a feature rather than a flaw, it is crucial to highlight the centralization risk it inherently poses. To address this issue and ensure the enablement of trades, one possible solution would be to transfer the contract's ownership to a trusted third party, such as a Pinksale Safu developer. This would help mitigate the centralization risk associated with this function.

MANUAL TESTING

Centralization – Max tx excluded wallets

Severity: High

Status: Not Resolved

Overview:

The current implementation of the contract is not using _excludedFromMaxTx to check whether a wallet is excluded from max tx or not, instead its only checking if sender and receivers are both owner wallet (which is a wrong condition)

```
if (from != owner() && to != owner())
  require(
    amount <= _maxTxAmount,
    "Transfer amount exceeds the maxTxAmount."
  );
```

Recommendation:

Check if wallet is excluded from max tx

```
if (!_excludedFromMaxTx[from] && !_excludedFromMaxTx[to])
  require(
    amount <= _maxTxAmount,
    "Transfer amount exceeds the maxTxAmount."
  );
```

MANUAL TESTING

Logical – Tokens may become unclaimeable after presale until trades are enabled

Severity: High

Status: Resolved (Trading is open)

Overview:

The current implementation of the contract requires the sender of the tokens to either be the owner or the migrationWallet, if trades are not enabled yet. This means, after presale since sender is presale address, users might not be able to claim their tokens until owner enabel trades

```
if (!canTrade) {
    require(sender == owner() || sender == migrationWallet); // only owner allowed to
trade or add liquidity
}
```

Recommendation:

If trades are not enabled yet, make sure that either sender or receiver are excluded from the condition to be able to transfer tokens.

MANUAL TESTING

Logical – Owner receiving LP tokens

Severity: Medium

Function: addLiquidity

Status: Not Resolved

Overview:

Owner is receiving LP tokens from auto liquidity. This accumulated tokens can be used to remove a portion of tokens from the liquidity pool.

```
function addLiquidity(uint256 tokenAmount, uint256 ethAmount) private {
    // approve token transfer to cover all possible scenarios
    _approve(address(this), address(uniswapV2Router), tokenAmount);

    // add the liquidity
    uniswapV2Router.addLiquidityETH{value: ethAmount}(
        address(this),
        tokenAmount,
        0, // slippage is unavoidable
        0, // slippage is unavoidable
        owner(),
        block.timestamp
    );
}
```

Recommendation:

There are several options to mitigate this issue

- Lock LP tokens
- Burn LP tokens

DISCLAIMER

All the content provided in this document is for general information only and should not be used as financial advice or a reason to buy any investment. Team provides no guarantees against the sale of team tokens or the removal of liquidity by the project audited in this document. Always Do your own research and protect yourselves from being scammed. The Auditace team has audited this project for general information and only expresses their opinion based on similar projects and checks from popular diagnostic tools. Under no circumstances did Auditace receive a payment to manipulate those results or change the awarding badge that we will be adding in our website. Always Do your own research and protect yourselves from scams. This document should not be presented as a reason to buy or not buy any particular token. The Auditace team disclaims any liability for the resulting losses.

ABOUT AUDITACE

We specializes in providing thorough and reliable audits for Web3 projects. With a team of experienced professionals, we use cutting-edge technology and rigorous methodologies to evaluate the security and integrity of blockchain systems. We are committed to helping our clients ensure the safety and transparency of their digital assets and transactions.

https://auditace.tech/

https://t.me/Audit_Ace

https://twitter.com/auditace_

https://github.com/Audit-Ace