AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

Milday GPT

DATED : 14 May 23'

AUDIT SUMMARY

Project name – Milady GPT

Date: 14 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	1	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/0xB5366b9945ce2452D8E40d38792cc7b1e307C686

Token Information

Token Name : Milady GPT

Token Symbol: MILADY

Decimals: 9

Token Supply:1,000,000,000,000,000

Token Address:
0xB0583746831508D6c7F436d3f0a4A4C063745b6f

Checksum:
000ec7738d447b0cc7fe7f366fef6f53581689a8

Owner:
0x8Bcce52Ae1eD3fe43Cc0c1C0f881775C95846DdF

TOKEN OVERVIEW

Fees:

Buy Fees: upto 12 %

Sell Fees: upto 12 %

Transfer Fees: 0%

Fees Privilige: owner

Ownership : owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Priviliges: changing swap threshold - changing fees - modifying swap settings

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

- ✅ 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

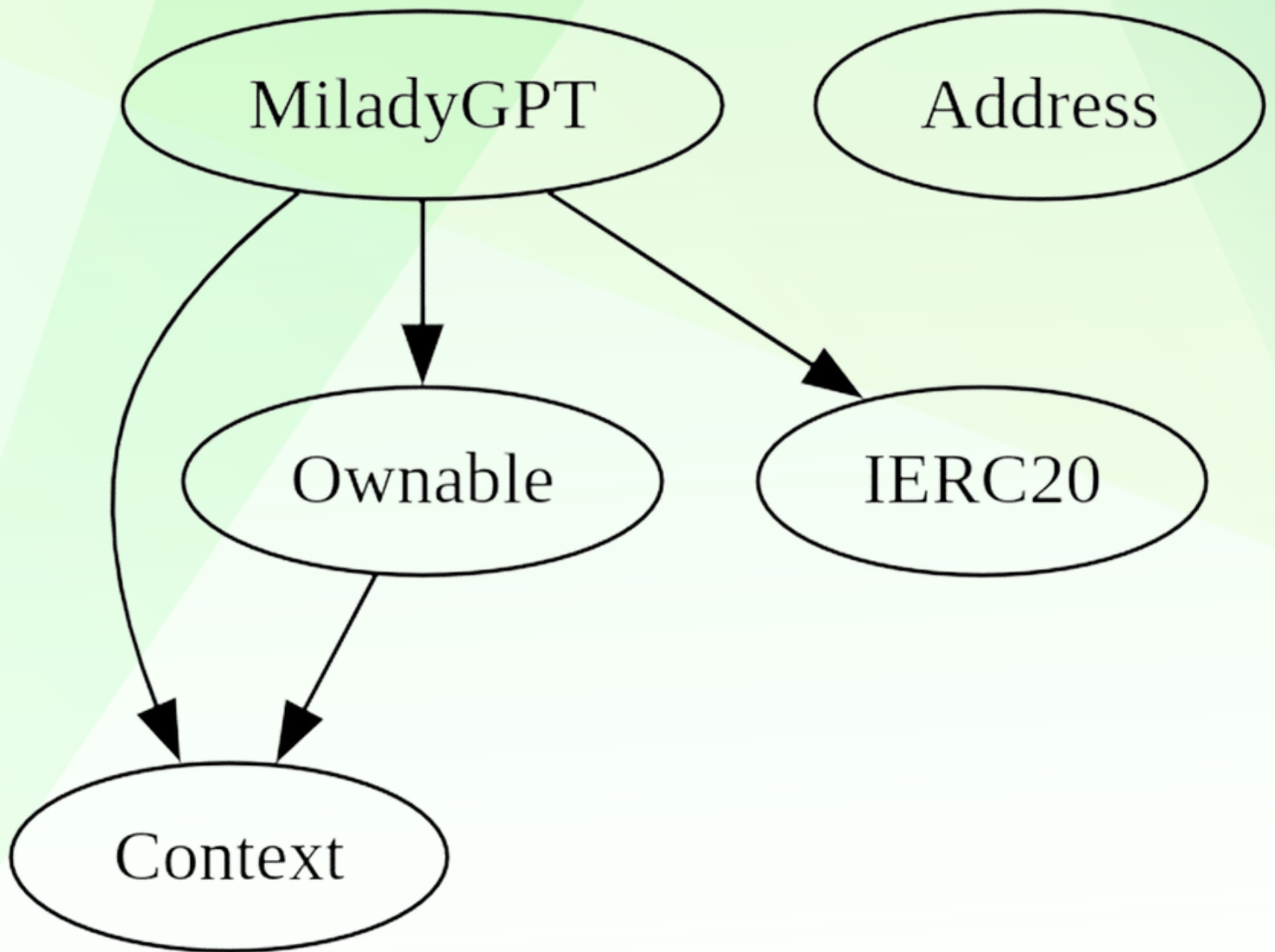| Severity	Found
◆ **Critical**	0
◆ **High-Risk**	0
◆ **Medium-Risk**	0
◆ **Low-Risk**	1
◆ **Gas Optimization / Suggestions**	0

INHERITANCE TREE

POINTS TO NOTE

- owner is not able to set buy/sell fees more than 12%
- owner is not able to set transfer fees (0%)
- owner is not able to blacklist an arbitrary wallet
- owner is not able to set limit for buy/sell/transfer/holding amounts
- owner is not able to mint new tokens
- owner is not able to disable trades
- owner can exclude/include an address from fees
- owner can set staking address
- owner can lock/unlock tokens for staking
- owner can update buy/sell fees
- owner can set swap tokens at amount
- owner can enable/disable swap
- owner can claim stuck tokens
- owner can exclude/include an address from rewards
- owner can transfer ownership
- owner can renounce ownership

CONTRACT ASSESMENT

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
Context	Implementation			
└	_msgSender	Internal 🔒		
└	_msgData	Internal 🔒		
Ownable	Implementation	Context		
└	<Constructor>	Public ❗	🛑	NO❗
└	owner	Public ❗		NO❗
└	renounceOwnership	Public ❗	🛑	onlyOwner
└	transferOwnership	Public ❗	🛑	onlyOwner
IERC20	Interface			
└	totalSupply	External ❗		NO❗
└	balanceOf	External ❗		NO❗
└	transfer	External ❗	🛑	NO❗
└	allowance	External ❗		NO❗
└	approve	External ❗	🛑	NO❗
└	transferFrom	External ❗	🛑	NO❗
Address	Library			
└	isContract	Internal 🔒		
└	sendValue	Internal 🔒	🛑	
└	functionCall	Internal 🔒	🛑	
└	functionCall	Internal 🔒	🛑	
└	functionCallWithValue	Internal 🔒	🛑	
└	functionCallWithValue	Internal 🔒	🛑	
└	_functionCallWithValue	Private 🔐	🛑	
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			

CONTRACT ASSESMENT

└	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🔘
└	burn	External 🔘	⬤	NO🔘
└	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🔘

CONTRACT ASSESMENT

└	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🛡
MiladyGPT	Implementation	Context, IERC20, Ownable		
└	<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🛡
└	isExcludedFromReward	Public 🛡		NO🛡
└	totalReflectionDistributed	Public 🛡		NO🛡
└	deliver	Public 🛡	⬛	NO🛡
└	reflectionFromToken	Public 🛡		NO🛡
└	tokenFromReflection	Public 🛡		NO🛡
└	excludeFromReward	Public 🛡	⬛	onlyOwner
└	includeInReward	External 🛡	⬛	onlyOwner
└	<Receive Ether>	External 🛡	💶	NO🛡
└	claimStuckTokens	External 🛡	⬛	NO🛡
└	setStakingAddress	External 🛡	⬛	onlyOwner
└	lockToken	Public 🛡	⬛	NO🛡
└	unlockToken	Public 🛡	⬛	NO🛡
└	updateFeeBuy	Public 🛡	⬛	onlyOwner
└	updateFeeSell	Public 🛡	⬛	onlyOwner

CONTRACT ASSESMENT

└	_reflectFee	Private 🔓	⬛		
└	_getValues	Private 🔓			
└	_getTValues	Private 🔓			
└	_getRValues	Private 🔓			
└	_getRate	Private 🔓			
└	_getCurrentSupply	Private 🔓			
└	_takeLiquidity	Private 🔓	⬛		
└	_takeMarketing	Private 🔓	⬛		
└	calculateTaxFee	Private 🔓			
└	calculateLiquidityFee	Private 🔓			
└	calculateMarketingFee	Private 🔓			
└	removeAllFee	Private 🔓	⬛		
└	setBuyFee	Private 🔓	⬛		
└	setSellFee	Private 🔓	⬛		
└	isExcludedFromFee	Public ❗		NO❗	
└	_approve	Private 🔓	⬛		
└	_transfer	Private 🔓	⬛		
└	swapAndLiquify	Private 🔓	⬛		
└	swapAndSendMarketing	Private 🔓	⬛		
└	setSwapTokensAtAmount	External ❗	⬛	onlyOwner	
└	setSwapEnabled	External ❗	⬛	onlyOwner	
└	_tokenTransfer	Private 🔓	⬛		
└	_transferStandard	Private 🔓	⬛		
└	_transferToExcluded	Private 🔓	⬛		
└	_transferFromExcluded	Private 🔓	⬛		
└	_transferBothExcluded	Private 🔓	⬛		
└	excludeFromFees	External ❗	⬛	onlyOwner	
└	isContract	Internal 🔒			

Legend

Symbol	Meaning
⬛	Function can modify state
💱	Function is payable

STATIC ANALYSIS

```
Variable MiladyGPT._transferFromExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#940) is too similar to MiladyGPT._getTValues(uint256).tTransferAmount (contracts/
Token.sol#687)
Variable MiladyGPT._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#951) is too similar to MiladyGPT._getValues(uint256).tTransferAmount (contracts/T
oken.sol#678)
Variable MiladyGPT._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#951) is too similar to MiladyGPT._transferFromExcluded(address,address,uint256).t
TransferAmount (contracts/Token.sol#940)
Variable MiladyGPT._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#929) is too similar to MiladyGPT._transferBothExcluded(address,address,uint256).tTr
ansferAmount (contracts/Token.sol#951)
Variable MiladyGPT.reflectionFromToken(uint256,bool).rTransferAmount (contracts/Token.sol#576) is too similar to MiladyGPT._transferFromExcluded(address,address,uint256).tTransferAmoun
t (contracts/Token.sol#940)
Variable MiladyGPT._transferFromExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#940) is too similar to MiladyGPT._transferToExcluded(address,address,uint256).tTr
ansferAmount (contracts/Token.sol#929)
Variable MiladyGPT._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#929) is too similar to MiladyGPT._getValues(uint256).tTransferAmount (contracts/Tok
en.sol#678)
Variable MiladyGPT._getValues(uint256).rTransferAmount (contracts/Token.sol#679) is too similar to MiladyGPT._transferToExcluded(address,address,uint256).tTransferAmount (contracts/Tok
en.sol#929)
Variable MiladyGPT._getRValues(uint256,uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#696) is too similar to MiladyGPT._transferToExcluded(address,address,uint25
6).tTransferAmount (contracts/Token.sol#929)
Variable MiladyGPT._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#929) is too similar to MiladyGPT._transferStandard(address,address,uint256).tTransf
erAmount (contracts/Token.sol#919)
Variable MiladyGPT.reflectionFromToken(uint256,bool).rTransferAmount (contracts/Token.sol#576) is too similar to MiladyGPT._transferBothExcluded(address,address,uint256).tTransferAmoun
t (contracts/Token.sol#951)
Variable MiladyGPT._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#919) is too similar to MiladyGPT._transferToExcluded(address,address,uint256).tTransf
erAmount (contracts/Token.sol#929)
Variable MiladyGPT._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#929) is too similar to MiladyGPT._transferToExcluded(address,address,uint256).tTran
sferAmount (contracts/Token.sol#929)
Variable MiladyGPT._getRValues(uint256,uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#696) is too similar to MiladyGPT._transferFromExcluded(address,address,uint
256).tTransferAmount (contracts/Token.sol#940)
Variable MiladyGPT._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#919) is too similar to MiladyGPT._transferFromExcluded(address,address,uint256).tTran
sferAmount (contracts/Token.sol#940)
Variable MiladyGPT._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#929) is too similar to MiladyGPT._getTValues(uint256).tTransferAmount (contracts/To
ken.sol#687)
Variable MiladyGPT._transferBothExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#951) is too similar to MiladyGPT._transferToExcluded(address,address,uint256).tTr
ansferAmount (contracts/Token.sol#929)
Variable MiladyGPT._transferToExcluded(address,address,uint256).rTransferAmount (contracts/Token.sol#929) is too similar to MiladyGPT._transferFromExcluded(address,address,uint256).tTr
ansferAmount (contracts/Token.sol#940)
Variable MiladyGPT._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#919) is too similar to MiladyGPT._transferBothExcluded(address,address,uint256).tTran
sferAmount (contracts/Token.sol#951)
Variable MiladyGPT.reflectionFromToken(uint256,bool).rTransferAmount (contracts/Token.sol#576) is too similar to MiladyGPT._transferToExcluded(address,address,uint256).tTransferAmount
(contracts/Token.sol#929)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

MiladyGPT.DEAD (contracts/Token.sol#412) should be constant
MiladyGPT._decimals (contracts/Token.sol#386) should be constant
MiladyGPT._name (contracts/Token.sol#384) should be constant
MiladyGPT._symbol (contracts/Token.sol#385) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant

MiladyGPT.DEV (contracts/Token.sol#413) should be immutable
MiladyGPT._tTotal (contracts/Token.sol#389) should be immutable
MiladyGPT.mk (contracts/Token.sol#409) should be immutable
MiladyGPT.mkTwo (contracts/Token.sol#410) should be immutable
MiladyGPT.totalBuyFees (contracts/Token.sol#406) should be immutable
MiladyGPT.totalSellFees (contracts/Token.sol#407) should be immutable
MiladyGPT.uniswapV2Pair (contracts/Token.sol#416) should be immutable
MiladyGPT.uniswapV2Router (contracts/Token.sol#415) 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/0xd3330960eac0542a7a14eb28f9
0fcb036d39b9365ab01adc5beb82beb5446fa4

2- Buying when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0xe5c4116886b50b6c5a5db20754
8099fe1d30acbcfd781a891f7d1ca0831d9c0a

3- Selling when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0x0519eaed77a74559d0477f2226
6c71cfdf87d6b2f9f7026c965b3e17a4252136

4- Transferring when excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0x92aa62d2f21bf35c099e387d44
05b9959c7ee1c64bfb190a73cf61f8b5de3bdc

5- Buying when not excluded (0% tax) (passed):
https://testnet.bscscan.com/tx/0xbdac56f2bc19c0a837a445ac7ca
8c693423f53c48982bc89581a4f83249b3244

6- Selling when not excluded (upto 12% tax) (passed):
https://testnet.bscscan.com/tx/0x62740621c344507d0444fff63ea
101e68b91c7660431029754ae369cb96c23aa

FUNCTIONAL TESTING

7- Transferring when not excluded (upto 12% tax) (passed):
https://testnet.bscscan.com/tx/0x0e69d959be5356353c8f318b03
be3c1b40eeaead8a71ec764840b3781bdc74f0

8- Auto liquidity, Marketing fee (passed):
https://testnet.bscscan.com/tx/0xd1b2bf21dd2af8d751b7aeb54119
d304ddde02b86fd053c98174dcc4640de8b3

MANUAL TESTING

Logical – Large swap threshold can increase slippage

Severity: Low

function: setSwapTokensAtAmount

Status: Not Resolved

Overview:

Owner is able to set swapTokensAtAmount to a large number, this can increase slippage up to 49% if contract balance is more than swapTokensAtAmount

```
function setSwapTokensAtAmount(uint256 newAmount) external onlyOwner() {
    require(newAmount > totalSupply() / 1e5, "SwapTokensAtAmount must be greater than
        0.001% of total supply");
    swapTokensAtAmount = newAmount;
    emit SwapTokensAtAmountUpdated(newAmount);
}
```

Suggestion

To mitigate this Logical issue, make sure that swapTokensAtAmount is always less than 1% of supply

```
function setSwapTokensAtAmount(uint256 newAmount) external onlyOwner() {
    require(newAmount > totalSupply() / 1e5, "SwapTokensAtAmount must be greater than
0.001% of total supply");
    require(newAmount < totalSupply() / 1e2, "SwapTokensAtAmount must be greater than
0.001% of total supply");
    swapTokensAtAmount = newAmount;
    emit SwapTokensAtAmountUpdated(newAmount);
}
```

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ABOUT AUDITACE

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