



# Smart Contract Audit

FOR  
**MOVIBIT**  
DATED : 12 May 23'



# AUDIT SUMMARY

**Project name - MOVIBIT**

**Date:** 12 May, 2023

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

**Audit Status:** Passed with critical risk

## Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	1	0	1	2	0
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0



# USED TOOLS

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## 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/0x10E19de3285a7913aEEdDc402d92aBe7D9548FE4>

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# Token Information

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**Token Name :** MOVIBIT

**Token Symbol:** MVBT

**Decimals:** 5

**Token Supply:** 280,000,000

**Token Address:**

0x5d6Fe0FB6d8f44C1b41151D1Afff3b3ae68C8326

**Checksum:**

7b25aa02430e71f6b104fc5e6bf9418f3a8edbf8

**Owner:**

0x7E68dC4993007e7Cc1221e28fd83d964444eE93A

**Deployer:**

0x7E68dC4993007e7Cc1221e28fd83d964444eE93A

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# TOKEN OVERVIEW

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**Fees:**

Buy Fees: up to 15%

Sell Fees: up to 15%

Transfer Fees: up to 15%

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**Fees Privilege:** Owner

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**Ownership:** Owned

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**Minting:** No mint function

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**Max Tx Amount/ Max Wallet Amount:** No

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**Blacklist:** No

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**Other Privileges:** changing fee - including and excluding form fee - changing distribution settings (min tokens to be eligible, cool down between claims etc)

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# AUDIT METHODOLOGY

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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

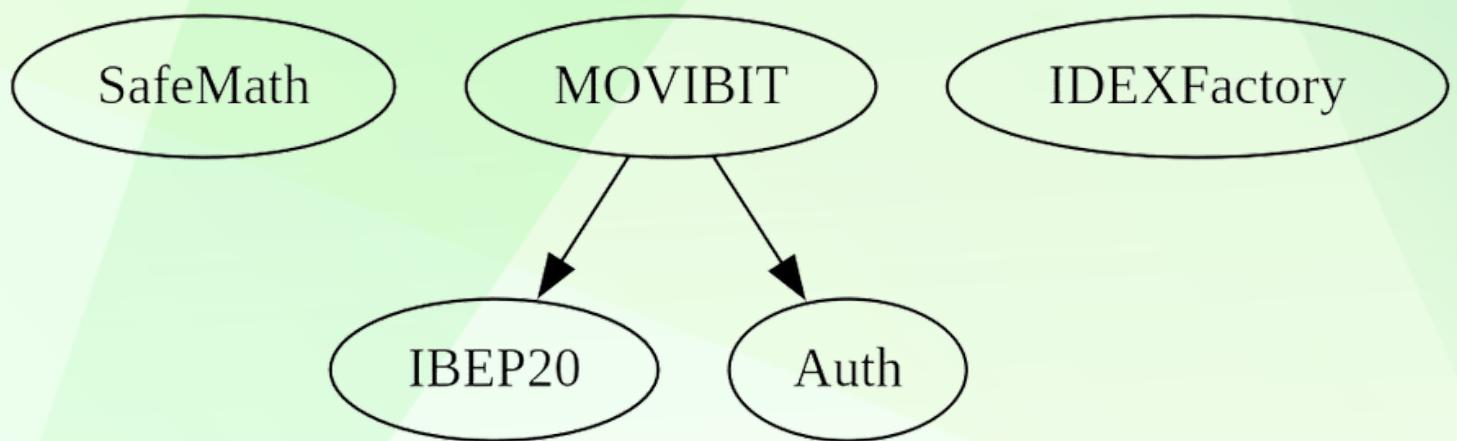
Severity	Description
◆ Critical	These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
◆ High-Risk	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a 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	1
◆ High-Risk	0
◆ Medium-Risk	1
◆ Low-Risk	2
◆ Gas Optimization / Suggestions	0

# INHERITANCE TREE

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## POINTS TO NOTE

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- Owner is able to set 15% fee for buy/sell/transfer each
- Owner is not able to blacklist an arbitrary address.
- Owner is not able to disable trades
- Owner is not able to set max buy/sell/transfer/hold amount
- Owner is not able to mint new tokens

# CONTRACT ASSESSMENT

Contract	Type	Bases				
	L	**Function Name**	**Visibility**	**Mutability**	**Modifiers**	
		**SafeMath**	Library			
	L	add	Internal 			
	L	sub	Internal 			
	L	sub	Internal 			
	L	mul	Internal 			
	L	div	Internal 			
	L	div	Internal 			
		**IBEP20**	Interface			
	L	totalSupply	External !	NO !		
	L	decimals	External !	NO !		
	L	symbol	External !	NO !		
	L	name	External !	NO !		
	L	getOwner	External !	NO !		
	L	balanceOf	External !	NO !		
	L	transfer	External !	   NO !		
	L	allowance	External !	NO !		
	L	approve	External !	   NO !		
	L	transferFrom	External !	   NO !		
		**Auth**	Implementation			
	L	<Constructor>	Public !	   NO !		
	L	authorize	Public !	   authorized		
	L	unauthorize	Public !	   authorized		
	L	isOwner	Public !	NO !		
	L	isAuthorized	Public !	NO !		
	L	transferOwnership	Public !	   onlyOwner		
		**IDEXFactory**	Interface			
	L	createPair	External !	   NO !		
		**IDEXRouter**	Interface			
	L	factory	External !	NO !		
	L	WETH	External !	NO !		
	L	addLiquidity	External !	   NO !		
	L	addLiquidityETH	External !	   NO !		
	L	swapExactTokensForTokensSupportingFeeOnTransferTokens	External !	   NO !		
	L	swapExactETHForTokensSupportingFeeOnTransferTokens	External !	   NO !		
	L	swapExactTokensForETHSupportingFeeOnTransferTokens	External !	   NO !		

# CONTRACT ASSESSMENT

	**MOVIBIT**   Implementation   IBEP20, Auth
L   <Constructor>   Public !   ●   Auth	
L   <Receive Ether>   External !   💸   NO !	
L   totalSupply   External !     NO !	
L   decimals   External !     NO !	
L   symbol   External !     NO !	
L   name   External !     NO !	
L   getOwner   External !     NO !	
L   balanceOf   Public !     NO !	
L   allowance   External !     NO !	
L   approve   Public !   ●   NO !	
L   approveMax   External !   ●   NO !	
L   transfer   External !   ●   NO !	
L   transferFrom   External !   ●   NO !	
L   burn   Public !   ●   NO !	
L   _transferFrom   Internal 🔒   ●	
L   _basicTransfer   Internal 🔒   ●	
L   shouldTakeFee   Internal 🔒	
L   takeFee   Internal 🔒   ●	
L   shouldSwapBack   Internal 🔒	
L   saveStuckTokens   External !     ●   authorized	
L   saveStuckBNB   External !     ●   authorized	
L   isFreeFees   Public !     NO !	
L   swapBack   Internal 🔒   ●   swapping	
L   setIsFeeExempt   External !     ●   authorized	
L   setFeesExchange   External !     ●   authorized	
L   setFeesTransfer   External !     ●   authorized	
L   setSwapBackSettings   External !     ●   authorized	
L   multiTransfer   External !     ●   onlyOwner	

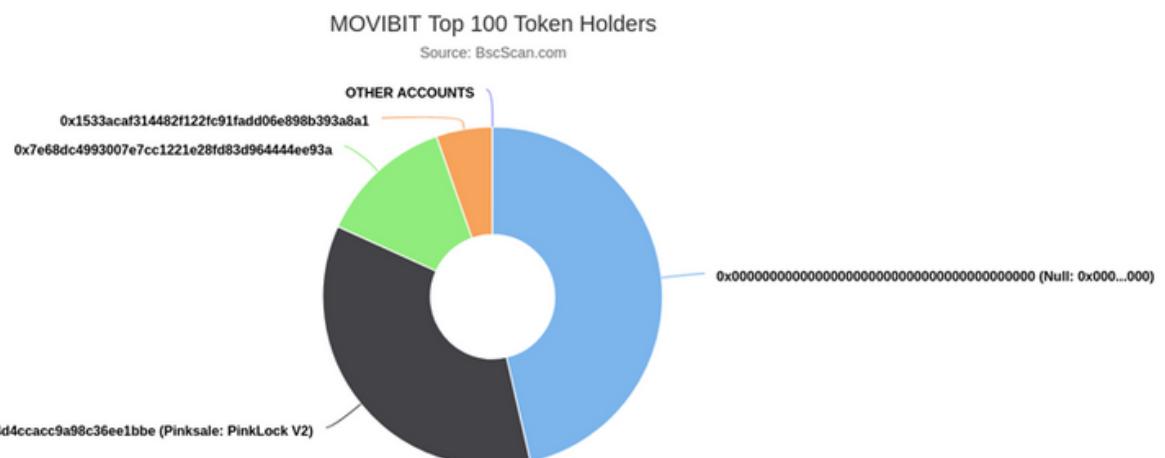
## Legend

Symbol   Meaning
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●   Function can modify state
💸   Function is payable

# TOKENOMICS AT TIME OF AUDIT

💡 The top 100 holders collectively own 100.00% (280,000,000.00 Tokens) of MOVIBIT

💡 Token Total Supply: 280,000,000.00 Token | Total Token Holders: 4





# STATIC ANALYSIS

```
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#function-initializing-state

Pragma version^0.8.17 (contracts/Token.sol#23) 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 MOVIBIT.swapBack() (contracts/Token.sol#489-544):
  - (tmpSuccess = address(marketingFeeReceiver).call{gas: 30000,value: amountBNBMarketing}()) (contracts/Token.sol#525-528)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Function IDEXRouter.WETH() (contracts/Token.sol#177) is not in mixedCase
Parameter MOVIBIT.saveStuckTokens(address,uint256,address)._quant (contracts/Token.sol#474) is not in mixedCase
Parameter MOVIBIT.saveStuckTokens(address,uint256,address)._tokenrec (contracts/Token.sol#475) is not in mixedCase
Parameter MOVIBIT.setFeesExchange(uint256,uint256,uint256,uint256,uint256,uint256).burnFeeBuy (contracts/Token.sol#551) is not in mixedCase
Parameter MOVIBIT.setFeesExchange(uint256,uint256,uint256,uint256,uint256,uint256).liquidityFeeBuy (contracts/Token.sol#552) is not in mixedCase
Parameter MOVIBIT.setFeesExchange(uint256,uint256,uint256,uint256,uint256,uint256).marketingFeeBuy (contracts/Token.sol#553) is not in mixedCase
Parameter MOVIBIT.setFeesExchange(uint256,uint256,uint256,uint256,uint256,uint256).marketingFeeSell (contracts/Token.sol#554) is not in mixedCase
Parameter MOVIBIT.setFeesExchange(uint256,uint256,uint256,uint256,uint256,uint256).burnFeeSell (contracts/Token.sol#555) is not in mixedCase
Parameter MOVIBIT.setFeesExchange(uint256,uint256,uint256,uint256,uint256,uint256).liquidityFeeSell (contracts/Token.sol#556) is not in mixedCase
Parameter MOVIBIT.setFeesExchange(uint256,uint256,uint256,uint256,uint256,uint256).marketingFeeSell (contracts/Token.sol#557) is not in mixedCase
Parameter MOVIBIT.setFeesTransfer(uint256,uint256,uint256).burnFeeTransfer (contracts/Token.sol#583) is not in mixedCase
Parameter MOVIBIT.setFeesTransfer(uint256,uint256,uint256).liquidityFeeTransfer (contracts/Token.sol#584) is not in mixedCase
Parameter MOVIBIT.setFeesTransfer(uint256,uint256,uint256).marketingFeeTransfer (contracts/Token.sol#585) is not in mixedCase
Parameter MOVIBIT.setSwapBackSettings(bool,uint256).enabled (contracts/Token.sol#601) is not in mixedCase
Parameter MOVIBIT.setSwapBackSettings(bool,uint256).amount (contracts/Token.sol#602) is not in mixedCase
Variable MOVIBIT.WBNB (contracts/Token.sol#229) is not in mixedCase
Variable MOVIBIT.DEAD (contracts/Token.sol#230) is not in mixedCase
Variable MOVIBIT.ZERO (contracts/Token.sol#231) is not in mixedCase
Constant MOVIBIT._name (contracts/Token.sol#234) is not in UPPER_CASE_WITH_UNDERSCORES
Constant MOVIBIT._symbol (contracts/Token.sol#235) is not in UPPER_CASE_WITH_UNDERSCORES
Constant MOVIBIT._decimals (contracts/Token.sol#236) is not in UPPER_CASE_WITH_UNDERSCORES
Variable MOVIBIT._totalSupply (contracts/Token.sol#238) is not in mixedCase
Variable MOVIBIT._balances (contracts/Token.sol#240) is not in mixedCase
Variable MOVIBIT._allowances (contracts/Token.sol#241) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Variable IDEXRouter.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/Token.sol#182) is too similar to IDEXRouter.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/Token.sol#183)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

Auth.authorizationsCount (contracts/Token.sol#120) is never used in MOVIBIT (contracts/Token.sol#226-630)
MOVIBIT.DEAD (contracts/Token.sol#230) is never used in MOVIBIT (contracts/Token.sol#226-630)
MOVIBIT.ZERO (contracts/Token.sol#231) is never used in MOVIBIT (contracts/Token.sol#226-630)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-state-variable

Auth.authorizationsCount (contracts/Token.sol#120) should be constant
MOVIBIT.DEAD (contracts/Token.sol#230) should be constant
MOVIBIT.WBNB (contracts/Token.sol#229) should be constant
MOVIBIT.ZERO (contracts/Token.sol#231) should be constant
MOVIBIT.routerAddress (contracts/Token.sol#232) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant

Auth.creator (contracts/Token.sol#118) should be immutable
MOVIBIT.autoLiquidityReceiver (contracts/Token.sol#264) should be immutable
MOVIBIT.marketingFeeReceiver (contracts/Token.sol#265) should be immutable
MOVIBIT.pair (contracts/Token.sol#268) should be immutable
MOVIBIT.router (contracts/Token.sol#267) 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/0xf9f426ee1f2e9e217fc953c5d64523d8d2c8b1650e32e4af7670d3779c2eeafdf>

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

<https://testnet.bscscan.com/tx/0x719e5c181e4785cda129f88b11f091c8c29e8a44457678cff6ad193918961970>

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

<https://testnet.bscscan.com/tx/0x3c7ba17db0c4135385d1567cfdda8c95689681c6fec73d4a16ac8636d0333ba2>

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

<https://testnet.bscscan.com/tx/0xbab4b5d8904f0b34eb95478fa681cabdf425f703c7f85fac522e70fb4a6b7e58>

### 5- Buying when not excluded from fees (up to 15% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x2a663adf4ad014f9e66ecffa56317af02880aadac05003c233bf3467c6fe0b7c>

### 6- Selling when not excluded from fees (up to 15% tax) (**passed**):

<https://testnet.bscscan.com/tx/0x3acd2f0272b1085b3a1e47b8be62f0a47f43eebb1244599cd685483bc41c3d5>



# FUNCTIONAL TESTING

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**7- Transferring when not excluded from fees (up to 15% tax) (passed):**

<https://testnet.bscscan.com/tx/0x8a98c2b020cb43e24304f379ec94ba f0b22515800ad8cd7e37587d1ad54df981>

**7- Internal swap (burning - auto liquidity - marketing fee) (passed):**

<https://testnet.bscscan.com/tx/0x3acd2f0272b1085b3a1e47b8be62f0a 47f43eebbb1244599cd685483bc41c3d5>



# MANUAL TESTING

## Logical – 0 swap threshold can disable trades

Severity: **Critical**

**function:** setSwapBackSettings

**Status:** Not Resolved

### Overview:

if swapThreshold is set to 0, internal swap would be failed due to a division by zero error. (at swapBack function)

```
function setSwapBackSettings(  
    bool _enabled,  
    uint256 _amount  
) external authorized {  
    swapEnabled = _enabled;  
    swapThreshold = _amount;  
}
```

### Suggestion

To mitigate this Logical issue, make sure that swapTokensAtAmount is always greater than 0

```
function setSwapBackSettings(  
    bool _enabled,  
    uint256 _amount  
) external authorized {  
    swapEnabled = _enabled;  
    swapThreshold = _amount;  
    require(swapThreshold > totalSupply / 1000000);  
}
```



# MANUAL TESTING

## Centralization – LP tokens going to an EOA

**Severity:** Medium

**function:** swapBack

**Status:** Not Resolved

### Overview:

LP tokens generated from auto-liquidity are sent to an EOA account, this accumulated tokens may be used by a malicious owner to remove a portion of tokens from the pool

```
if (amountToLiquify > 0) {  
    router.addLiquidityETH{value: amountBNBLiquidity}(  
        address(this),  
        amountToLiquify,  
        0,  
        0,  
        autoLiquidityReceiver,  
        block.timestamp  
    );  
    emit AutoLiquify(amountBNBLiquidity, amountToLiquify);  
}
```

### Suggestion

To mitigate this Centralization issue:

- Burn the new LP tokens

or

- Lock the new LP tokens



# MANUAL TESTING

## Logical – Outdated compiler version

**Severity:** Low

**Status:** not resolved

**Overview:**

Compiler version is 0.7.4, this compiler version is outdated and doesn't support internal handling of overflow/underflows any may introduce other bugs

**Recommendation:**

Change the compiler version to >= 0.8.0



# MANUAL TESTING

## Centralization – Excessive fees

**Severity:** Low

**Status:** not resolved

### Overview:

Fees can be up to 15% for each type of tax (buy/sell/transfer). This is 5% more than what is declared in pinksale safu criteria.

```
function setFeesExchange(
    uint256 _burnFeeBuy,
    uint256 _liquidityFeeBuy,
    uint256 _marketingFeeBuy,
    uint256 _burnFeeSell,
    uint256 _liquidityFeeSell,
    uint256 _marketingFeeSell,
    uint256 _feeDenominator
) external authorized {
    burnFeeBuy = _burnFeeBuy;
    liquidityFeeBuy = _liquidityFeeBuy;
    marketingFeeBuy = _marketingFeeBuy;
    totalFeeBuy = _burnFeeBuy.add(_liquidityFeeBuy).add(_marketingFeeBuy);

    burnFeeSell = _burnFeeSell;
    liquidityFeeSell = _liquidityFeeSell;
    marketingFeeSell = _marketingFeeSell;
    totalFeeSell = _burnFeeSell.add(_liquidityFeeSell).add(
        _marketingFeeSell
    );

    feeDenominator = _feeDenominator;
    require(
        totalFeeBuy <= feeDenominator.div(100).mul(15),
        "Fees cannot be more than 15%"
    );
    require(
        totalFeeSell <= feeDenominator.div(100).mul(15),
        "Fees cannot be more than 15%"
    );
}
```

### Recommendation:

Ensure that sum of total buy and total sell fees is less than 25%



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