



Smart Contract Audit

FOR
JOKER PEPE

DATED : 27 May 23'

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/address/0xbc6cde05b595b27a7827897cfb67c0143a4de79f>



Token Information

Token Name : JOKER PEPE

Token Symbol: JOP

Decimals: 9

Token Supply: 10,000,000,000,000

Token Address:

0x8c550F10A2f26313c76A22C5c90aBd298054aAD9

Checksum:

f803552931fc9b646677b37fdd16ec74396fdc29

Owner:

0x3f1006d2ee3691546EA4451a650B09E4565ec469

Deployer:

0x3f1006d2ee3691546EA4451a650B09E4565ec469



TOKEN OVERVIEW

Fees:

Buy Fees: 0-18%

Sell Fees: 0-18%

Transfer Fees: 0%

Fees Privilege: Owner

Ownership: 0x3f1006d2ee3691546EA4451a650B09E4565ec469

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: Fee modification

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 |
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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

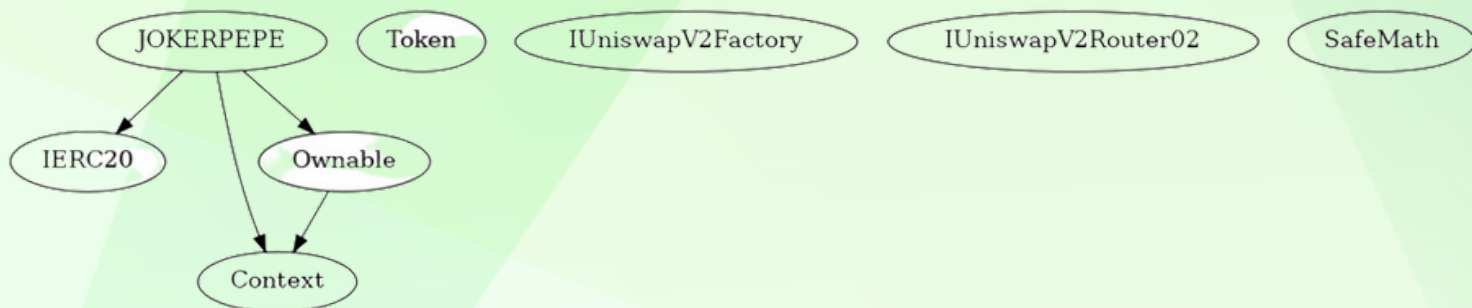
Severity

Found

◆ Critical	0
◆ High-Risk	0
◆ Medium-Risk	1
◆ Low-Risk	0
◆ Gas Optimization / Suggestions	2



INHERITANCE TREE





POINTS TO NOTE

- Owner is able to change fees in range 0-18% for buy and sells (0% transfer tax)
 - Owner is not able to blacklist an arbitrary address.
 - Owner is not able to disable trades
 - Owner is not able to limit buy/sell/transfer/wallet amounts
 - Owner is not able to mint new token
-



STATIC ANALYSIS

```
Reentrancy in JOKERPEPE.transferFrom(address,address,uint256) (contracts/Token.sol#276-291):
  External calls:
    - _transfer(sender,recipient,amount) (contracts/Token.sol#281)
      - developmentAddress.transfer(amount.div(2)) (contracts/Token.sol#371)
      - marketingAddress.transfer(amount.div(2)) (contracts/Token.sol#372)
  State variables written after the call(s):
    - _approve(sender,_msgSender(),_allowances[sender][_msgSender()].sub(amount,ERC20: transfer amount exceeds allowance)) (contracts/Token.sol#282-289)
      - _allowances[owner][spender] = amount (contracts/Token.sol#307)
  Event emitted after the call(s):
    - Approval(owner,spender,amount) (contracts/Token.sol#308)
      - _approve(sender,_msgSender(),_allowances[sender][_msgSender()].sub(amount,ERC20: transfer amount exceeds allowance)) (contracts/Token.sol#282-289)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-4

Variable JOKERPEPE._getRValues(uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#488) is too similar to JOKERPEPE._getTValues(uint256,uint256,uint256).tTransferAmount (contracts/Token.sol#475)
Variable JOKERPEPE._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#420) is too similar to JOKERPEPE._transferStandard(address,address,uint256).tTransferAmount (contracts/Token.sol#422)
Variable JOKERPEPE._getRValues(uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#488) is too similar to JOKERPEPE._getValues(uint256).tTransferAmount (contracts/Token.sol#453)
Variable JOKERPEPE._getRValues(uint256,uint256,uint256,uint256).rTransferAmount (contracts/Token.sol#488) is too similar to JOKERPEPE._transferStandard(address,address,uint256).tTransferAmount (contracts/Token.sol#422)
Variable JOKERPEPE._getValues(uint256).rTransferAmount (contracts/Token.sol#459) is too similar to JOKERPEPE._transferStandard(address,address,uint256).tTransferAmount (contracts/Token.sol#422)
Variable JOKERPEPE._getValues(uint256).rTransferAmount (contracts/Token.sol#459) is too similar to JOKERPEPE._getValues(uint256).tTransferAmount (contracts/Token.sol#453)
Variable JOKERPEPE._getValues(uint256).rTransferAmount (contracts/Token.sol#459) is too similar to JOKERPEPE._getTValues(uint256,uint256,uint256).tTransferAmount (contracts/Token.sol#475)
Variable JOKERPEPE._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#420) is too similar to JOKERPEPE._getTValues(uint256,uint256,uint256).tTransferAmount (contracts/Token.sol#475)
Variable JOKERPEPE._transferStandard(address,address,uint256).rTransferAmount (contracts/Token.sol#420) is too similar to JOKERPEPE._getValues(uint256).tTransferAmount (contracts/Token.sol#453)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

JOKERPEPE.slitherConstructorConstantVariables() (contracts/Token.sol#161-569) uses literals with too many digits:
  - tTotal = 1000000000000000 * 10 ** 9 (contracts/Token.sol#169)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits

JOKERPEPE._toOwned (contracts/Token.sol#164) is never used in JOKERPEPE (contracts/Token.sol#161-569)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-state-variable

JOKERPEPE.uniswapV2Pair (contracts/Token.sol#192) should be immutable
JOKERPEPE.uniswapV2Router (contracts/Token.sol#191) 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



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 !	
Token Interface					
└──	transferFrom	External	!	NO !	
└──	transfer	External	!	NO !	
IUniswapV2Factory Interface					
└──	createPair	External	!	NO !	
IUniswapV2Router02 Interface					
└──	swapExactTokensForETHSupportingFeeOnTransferTokens	External	!	NO !	
└──	factory	External	!	NO !	
└──	WETH	External	!	NO !	
└──	addLiquidityETH	External	!	NO !	
Context Implementation					
└──	_msgSender	Internal	🔒		
SafeMath Library					
└──	add	Internal	🔒		
└──	sub	Internal	🔒		
└──	sub	Internal	🔒		
└──	mul	Internal	🔒		
└──	div	Internal	🔒		
└──	div	Internal	🔒		
Ownable Implementation Context					
└──	<Constructor>	Public	!	NO !	
└──	owner	Public	!	NO !	
└──	renounceOwnership	Public	!	onlyOwner	
└──	transferOwnership	Public	!	onlyOwner	
JOKERPEPE Implementation Context, IERC20, Ownable					
└──	<Constructor>	Public	!	NO !	

CONTRACT ASSESMENT

	└	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	!
	└	tokenFromReflection		Private	🔒				
	└	_approve		Private	🔒		●		
	└	_transfer		Private	🔒		●		
	└	swapTokensForEth		Private	🔒		●	lockTheSwap	
	└	sendETHToFee		Private	🔒		●		
	└	_tokenTransfer		Private	🔒		●		
	└	rescueForeignTokens		Public	!		●	onlyDev	
	└	setNewDevAddress		Public	!		●	onlyDev	
	└	setNewMarketingAddress		Public	!		●	onlyDev	
	└	_transferStandard		Private	🔒		●		
	└	_takeTeam		Private	🔒		●		
	└	_reflectFee		Private	🔒		●		
	└	<Receive Ether>		External	!		💵	NO	!
	└	_getValues		Private	🔒				
	└	_getTValues		Private	🔒				
	└	_getRValues		Private	🔒				
	└	_getRate		Private	🔒				
	└	_getCurrentSupply		Private	🔒				
	└	manualswap		External	!		●	NO	!
	└	manualsend		External	!		●	NO	!
	└	setFee		Public	!		●	onlyDev	
	└	toggleSwap		Public	!		●	onlyDev	
	└	excludeMultipleAccountsFromFees		Public	!		●	onlyOwner	

Legend

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



FUNCTIONAL TESTING

1- Adding liquidity (passed):

<https://testnet.bscscan.com/tx/0x08648068a8aa60eccee0ad905f23b0c4c1573b111bd0431b01572b7be3c2980e>

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

<https://testnet.bscscan.com/tx/0xe0d4089a11b3eee9caad5d6335de3b74196931b75de932237eb4ef50da288b7b>

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

<https://testnet.bscscan.com/tx/0xf0eadd638048fd1f70ba88e1bdf3ce6091a0d03fb061563864567e975f6e1816>

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

<https://testnet.bscscan.com/tx/0xe2a918249d4a9ef7aedd24a80edc4e32531841e2e905e4f67ea55d719f636535>

5- Buying from a regular wallet (0-18% tax) (passed):

<https://testnet.bscscan.com/tx/0x959be087d1169e21b867f231871024fefb2477e2a3cdadf85cf5d76ad153d6b7>

6- Selling from a regular wallet (0-18% tax) (passed):

<https://testnet.bscscan.com/tx/0xe3f07235135d4e600c037150089976c64d2bea594180db7caeeecacd9049cfe3>



FUNCTIONAL TESTING

7- Transferring from a regular wallet (0% tax) (passed):

<https://testnet.bscscan.com/tx/0x8c710d0371bee6d61c1e6ca500d54c4a16ccfca8801ab47c8bf687a005ca15b7>

7- Internal swap (marketing and development wallets received BNB) (passed):

<https://testnet.bscscan.com/address/0x3f1006d2ee3691546EA4451a650B09E4565ec469#internaltx>

MANUAL TESTING

Issue Category: Centralization – Excessive Fee

Severity: Medium

Function: setFee

Status: Not Resolved

Overview: The function setFee allows the owner to set the transaction fees for buying and selling. This buying and selling fee can be in range 0-18% for each type of tax (buy or sell)

Code:

solidity

```
function setFee(
    uint256 redisFeeOnBuy,
    uint256 redisFeeOnSell,
    uint256 taxFeeOnBuy,
    uint256 taxFeeOnSell
) public onlyDev {
    require(redisFeeOnBuy < 9);
    require(redisFeeOnSell < 9);
    require(taxFeeOnBuy < 9);
    require(taxFeeOnSell < 9);
    _redisFeeOnBuy = redisFeeOnBuy;
    _redisFeeOnSell = redisFeeOnSell;
    _taxFeeOnBuy = taxFeeOnBuy;
    _taxFeeOnSell = taxFeeOnSell;
}
```

Suggestion: Limit the maximum fee that can be set to prevent the owner from setting an excessively high fee. This can be done by modifying the require statements to a reasonable percentage.

Buy Total Fee <= 10

Sell Total Fee <= 10

Tranfser Total Fee <= 10

MANUAL TESTING

Issue Category: Efficiency - High Slippage Risk

Severity: Minor

Function: _transfer

Status: Not Resolved

Overview: In the _transfer function, it appears that the contract will try to swap all tokens in its balance for ETH whenever a transfer occurs that does not involve the owner. This can potentially lead to a situation where, if a large amount of tokens are accumulated in the contract, a huge amount of tokens will be swapped at once, leading to a high slippage. Its expected that during launch of the token, a huge amount of token get accumulated in the contract depending on the buy volume which leads to a high slippage in sell transactions (8-49%).

Code:

solidity

```
function _transfer(address from, address to, uint256 amount) private {
    require(from != address(0), "ERC20: transfer from the zero address");
    require(to != address(0), "ERC20: transfer to the zero address");
    require(amount > 0, "Transfer amount must be greater than zero");

    _redisFee = 0;
    _taxFee = 0;

    if (from != owner() && to != owner()) {
        uint256 contractTokenBalance = balanceOf(address(this));
        if (
            !inSwap &&
            from != uniswapV2Pair &&
            swapEnabled &&
            contractTokenBalance > 0
        ){
            swapTokensForEth(contractTokenBalance);
            uint256 contractETHBalance = address(this).balance;
            if (contractETHBalance > 0) {
                sendETHToFee(address(this).balance);
            }
        }
    }
}
```

Suggestion: To mitigate the risk of high slippage, you might consider setting a swap threshold, i.e., a maximum amount of tokens that can be swapped at any single transaction. This can help prevent the contract from swapping a massive amount of tokens at once, thus preventing an excessive impact on the token's price.

MANUAL TESTING

Issue Category: Centralization – Unrestricted Withdrawal

Severity: Informational

Function: rescueForeignTokens

Status: Not Applicable

Overview: The owner has unrestricted access to withdraw any tokens from the contract. This poses a risk as it allows the owner to withdraw native tokens from the contract

Code:

```
function rescueForeignTokens(  
    address _tokenAddr,  
    address _to,  
    uint _amount  
) public onlyDev {  
    emit tokensRescued(_tokenAddr, _to, _amount);  
    Token(_tokenAddr).transfer(_to, _amount);  
}
```

Suggestion: Implement checks and balances on the owner's ability to withdraw tokens from the contract. This could be achieved by establishing multisig control, time locks, or by setting a withdrawal limit.



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