

Smart Contract Audit

FOR

DOGECAT

DATED: 9 June 23'



HIGH RISK FINDING

Centralization – Trades must be enabled

Severity: High

function: enableTrading

Status: Resolved (Contract is owned by safu developer)

Overview:

The smart contract owner must enable trades for holders. If trading remain disabled, no one would be able to buy/sell/transfer tokens.

```
function enableTrading() external onlyOwner {
  require(!isTradeEnabled, "Trading already enabled");
  isTradeEnabled = true;
  listingTime = block.timestamp;
}
```

Suggestion

To mitigate this centralization issue, we propose the following options:

- Renounce Ownership: Consider relinquishing control of the smart contract by renouncing ownership. This would remove the ability for a single entity to manipulate the router, reducing centralization risks.
- Multi-signature Wallet: Transfer ownership to a multi-signature wallet. This would require multiple approvals for any changes to the mainRouter, adding an additional layer of security and reducing the centralization risk.
- Transfer ownership to a trusted and valid 3rd party in order to guarantee enabling of the trades



AUDIT SUMMARY

Project name - DOGECAT

Date: 9 June, 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	1	0	0	1
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/0x6179E34f232B27 359F10EBC7d699aAc60Bf48f56



Token Information

Token Name: DogeCatChat

Token Symbol: DOGECAT

Decimals: 9

Token Supply: 420, 420, 420, 420

Token Address:

0xfF32827f9E8B138f80f41A7C34a130bd85C9B4dB

Checksum:

b0534ddce337345588aa005e78ff6b65a1887a13

Owner:

0x1Df925D52a7dade6411Cf669fa796F1e62bBc509 (at time of writing the audit)

Deployer:

0x1Df925D52a7dade6411Cf669fa796F1e62bBc509



TOKEN OVERVIEW

Fees:

Buy Fees: 0-10%

Sell Fees: 0-10%

Transfer Fees: 0-10%

Fees Privilege: Owner

Ownership:

0x1Df925D52a7dade6411Cf669fa796F1e62bBc509

Minting: None

Max Tx Amount/ Max Wallet Amount: Yes

Blacklist: No

Other Privileges: - initial distribution of tokens

- including or excluding from fees
- changing swap threshold
- changing fees
- enabling trades



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-byline 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





CLASSIFICATION OF RISK

Severity

- 🔷 Critical
- High-Risk
- Medium-Risk
- Low-Risk
- Gas Optimization
 /Suggestion

Description

These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.

A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.

A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.

A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.

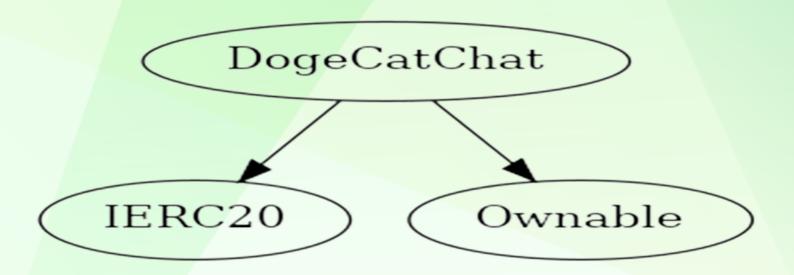
A vulnerability that has an informational character but is not affecting any of the code.

Findings

Severity	Found
♦ Critical	0
♦ High-Risk	1
♦ Medium-Risk	0
♦ Low-Risk	0
Gas Optimization /Suggestions	1



INHERITANCE TREE





POINTS TO NOTE

- owner is able to change fees in range of 0-10% for buy/sell/transfer transactions.
- owner is not able to change buy/sell/transfer fees until
 7 days after launch
- transfser fees are disabled at time of writing the audit report
- 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 must enable trades manually



CONTRACT ASSESMENT

```
| Contract |
               Type
                            Bases
<mark>|;-----:|;-----:|;------:</mark>--:|;------:|;-----:|;-----:|;-----:|;
       | **Function Name** | **Visibility** | **Mutability** | **Modifiers** |
\Pi\Pi\Pi\Pi\Pi
**DogeCatChat* | Implementation | IERC20, Ownable | | |
| L | <Constructor> | Public | | | NO | |
| L | <Receive Ether> | External | | I | NO | |
| L | totalSupply | External | | NO | |
| L | symbol | Public | | NO | |
| L | decimals | Public | | NO | |
| L | balanceOf | Public ! | NO! |
| L | allowance | External | | NO | |
| L | approve | Public ! | ( NO! |
| L | approve | Internal fi | \infty | 1
| L | approveMax | External | | | NO | |
| L | transferFrom | External | | | NO | |
| L | transferFrom | Internal 🙃 | 🔘 | |
| └ | takeFee | Internal 🔓 | 🌑 | |
| L | basicTransfer | Internal 📅 | 🔘 | |
| L | shouldTakeFee | Internal 🛅 | | |
| L | shouldDoContractSwap | Internal 🕤 | | |
| L | isFeeExcluded | Public | | NO | |
| L | doContractSwap | Internal 🚹 | 🌑 | swapping |
| L | swapTokensForEth | Private 📆 | 🔘 | |
| L | setIsFeeExempt | External | | OnlyOwner |
| L | setDoContractSwap | External | | | | onlyOwner |
L | changeMarketingWallet | External | | OnlyOwner |
| L | changeBuyFees | External | | | | onlyOwner |
| L | changeSellFees | External | | ( ) | onlyOwner |
| L | enableTrading | External | | | | onlyOwner |
| L | setAuthorizedWallets | External | | | OnlyOwner |
| L | rescueBNB | External | | | | onlyOwner |
L | changeGetFeesOnTransfer | External | | OnlyOwner |
| L | changePair | External | | | | onlyOwner |
```



CONTRACT ASSESMENT

Legend



STATIC ANALYSIS

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

No major issues were found in the output



1- Adding liquidity (passed):

https://testnet.bscscan.com/tx/0x539abd7782169bb10309446eee9f2e 204d66000bb3d3cf55c25117788bccba34

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

https://testnet.bscscan.com/tx/0xe1e441687455a172571fce8f7da4f4a c5c92ffef454d5eb8bf0fdc4ba2220745

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

https://testnet.bscscan.com/tx/0x3cc8d3fa91ad83e4d28088f150eef8f 9d106b6427f7477856700e76248d232ae

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

https://testnet.bscscan.com/tx/0x5935a1138d0817f97b5a5bee41b4c68 1bce707e1bb6c69d854be9969390269f9

5- Buying when not excluded from fees (0-10% tax) (passed):

https://testnet.bscscan.com/tx/0x00738315363b5b749834704a3d887 229d3561b1e3ce354021a01078e811d6e9e

6- Selling when not excluded from fees (0-10% tax) (passed):

https://testnet.bscscan.com/tx/0xade98c1d8bab0f676def5d659bd24fbe7aa0223aae748d3683ad66eee9b560a8



7- Transferring when not excluded from fees (get fee on transfer disabled) (0% tax) (passed):

https://testnet.bscscan.com/tx/0xa63f870477a153724e1d9b371f7c6f5 a2476a63b4b48edb203931967a8a8f632

8- Transferring when not excluded from fees (get fee on transfer enabled) (0-10% tax) (passed):

https://testnet.bscscan.com/tx/0x0ed9e07b0e286c5fc69a3a99668a96 4dbc5113f6c0616dc1879f15611e8528f8

- 9- Internal swap (passed):
- Tax converted to BNB and sent to marketing wallet https://testnet.bscscan.com/tx/0xade98c1d8bab0f676def5d659bd24fbe7aa0223aae748d3683ad66eee9b560a8



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Suggestion – Stuck Tokens

Severity: Informational

Status: Open Overview:

Contract can receive ERC20 tokens. However, there are currently no functions available to withdraw these stuck tokens. This could result in assets being permanently locked within the contract.

Suggestion

Recommendation: To resolve this issue, implement withdrawal functions for both ETH and ERC20 tokens. This will allow the contract owner to recover any assets mistakenly sent to the contract address. Here is an example of how such functions might look:

```
// For ERC20 Tokens
function withdrawTokens(address _tokenContract) external onlyOwner {
    require(_tokenContract != address(this), "can not withdraw native tokens");
    ERC20 token = ERC20(_tokenContract);
    uint256 balance = token.balanceOf(address(this));
    token.transfer(owner, balance);
    emit WithdrawalTokens(owner, balance);
}

// For ETH
function withdrawETH(uint256 amount) external onlyOwner {
    require(amount <= address(this).balance, "Not enough ETH balance");
    payable(owner).transfer(amount);
    emit WithdrawalETH(owner, amount);
}</pre>
```

In these functions, onlyOwner is a modifier to ensure only the contract owner can execute these functions, preventing unauthorized withdrawals. The WithdrawalTokens and WithdrawalETH events are emitted after the successful transfer of tokens or ETH to provide transparency and trackability.



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