Coinsult

Advanced Manual
Smart Contract Audit

January 11, 2025

CoinsultAudits

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Audit requested by

MIAOHCoin

0x6FD99B5947B029dcf074D02190BEDbEbAE8d8fC0

Global Overview

Manual Code Review

In this audit report we will highlight the following issues:

Vulnerability Level	Total	Pending	Acknowledged	Resolved
● Informational	0	0	0	0
● Low-Risk	4	4	0	0
● Medium-Risk	3	3	0	0
● High-Risk	2	2	0	0

Centralization Risks

Coinsult checked the following privileges:

Contract Privilege	Description
Owner needs to enable trading?	● Owner needs to manually enable trading
Owner can mint?	● Owner cannot mint new tokens
Owner can blacklist?	● Owner can blacklist addresses
Owner can set fees?	● Owner can set the sell fee to 100%
Owner can exclude from fees?	● Owner can exclude from fees
Can be honeypotted?	● Contract can become honeypot
Owner can set Max TX amount?	● Owner cannot set max transaction amount

More owner priviliges are listed later in the report.

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Audit Summary

Project Name	MIAOHCoin
Website	https://linktr.ee/miaoh
Blockchain	Binance Smart Chain
Smart Contract Language	Solidity
Contract Address	0x6FD99B5947B029dcf074D02190BEDbEbAE8d8fC0
Audit Method	Static Analysis, Manual Review
Date of Audit	11 January 2025

This audit report has been prepared by Coinsult's experts at the request of the client. In this audit, the results of the static analysis and the manual code review will be presented. The purpose of the audit is to see if the functions work as intended, and to identify potential security issues within the smart contract.

The information in this report should be used to understand the risks associated with the smart contract. This report can be used as a guide for the development team on how the contract could possibly be improved by remediating the issues that were identified.

Audit Scope

Coinsult was comissioned by MIAOHCoin to perform an audit based on the following code:

https://bscscan.com/address/0x6FD99B5947B029dcf074D02190BEDbEbAE8d8fC0#code

Note that we only audited the code available to us on this URL at the time of the audit. If the URL is not from any block explorer (main net), it may be subject to change. Always check the contract address on this audit report and compare it to the token you are doing research for.

Audit Method

Coinsult's manual smart contract audit is an extensive methodical examination and analysis of the smart contract's code that is used to interact with the blockchain. This process is conducted to discover errors, issues and security vulnerabilities in the code in order to suggest improvements and ways to fix them.

Automated Vulnerability Check

Coinsult uses software that checks for common vulnerability issues within smart contracts. We use automated tools that scan the contract for security vulnerabilities such as integer-overflow, integer-underflow, out-of-gas-situations, unchecked transfers, etc.

Manual Code Review

Coinsult's manual code review involves a human looking at source code, line by line, to find vulnerabilities. Manual code review helps to clarify the context of coding decisions. Automated tools are faster but they cannot take the developer's intentions and general business logic into consideration.

Used tools

– Slither: Solidity static analysis framework
– Remix: IDE Developer Tool
– CWE: Common Weakness Enumeration
– SWC: Smart Contract Weakness Classification and Test Cases
– DEX: Testnet Blockchains

Risk Classification

Coinsult uses certain vulnerability levels, these indicate how bad a certain issue is. The higher the risk, the more strictly it is recommended to correct the error before using the contract.

Vulnerability Level	Description
● Informational	Does not compromise the functionality of the contract in any way
● Low-Risk	Won't cause any problems, but can be adjusted for improvement
● Medium-Risk	Will likely cause problems and it is recommended to adjust
● High-Risk	Will definitely cause problems, this needs to be adjusted

Coinsult has four statuses that are used for each risk level. Below we explain them briefly.

Risk Status	Description
Total	Total amount of issues within this category
Pending	Risks that have yet to be addressed by the team
Acknowledged	The team is aware of the risks but does not resolve them
Resolved	The team has resolved and remedied the risk

SWC Attack Analysis

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) while overlaying a wide range of weakness variants that are specific to smart contracts.

ID	Description	Status
SWC-100	Function Default Visibility	Passed
SWC-101	Integer Overflow and Underflow	Passed
SWC-102	Outdated Compiler Version	Passed
SWC-103	Floating Pragma	Failed
SWC-104	Unchecked Call Return Value	Passed
SWC-105	Unprotected Ether Withdrawal	Passed
SWC-106	Unprotected SELFDESTRUCT Instruction	Passed
SWC-107	Reentrancy	Passed
SWC-108	State Variable Default Visibility	Passed
SWC-109	Uninitialized Storage Pointer	Passed
SWC-110	Assert Violation	Passed
SWC-111	Use of Deprecated Solidity Functions	Passed
SWC-112	Delegatecall to Untrusted Callee	Passed
SWC-113	DoS with Failed Call	Passed
SWC-114	Transaction Order Dependence	Passed
SWC-115	Authorization through tx.origin	Passed

SWC-116	Block values as a proxy for time	Passed
SWC-117	Signature Malleability	Passed
SWC-118	Incorrect Constructor Name	Passed
SWC-119	Shadowing State Variables	Passed
SWC-120	Weak Sources of Randomness from Chain Attributes	Passed
SWC-121	Missing Protection against Signature Replay Attacks	Passed
SWC-122	Lack of Proper Signature Verification	Passed
SWC-123	Requirement Violation	Passed
SWC-124	Write to Arbitrary Storage Location	Passed
SWC-125	Incorrect Inheritance Order	Passed
SWC-126	Insufficient Gas Griefing	Passed
SWC-127	Arbitrary Jump with Function Type Variable	Passed
SWC-128	DoS With Block Gas Limit	Passed
SWC-129	Typographical Error	Passed
SWC-130	Right-To-Left-Override control character (U+202E)	Passed
SWC-131	Presence of unused variables	Passed
SWC-132	Unexpected Ether balance	Passed
SWC-133	Hash Collisions With Multiple Variable Length Arguments	Passed
SWC-134	Message call with hardcoded gas amount	Passed
SWC-135	Code With No Effects	Passed
SWC-136	Unencrypted Private Data On-Chain	Passed

Error Code	Description
CS-01	Swap directly to address(this)

🟢 **Low-Risk:** Could be fixed, will not bring problems.

Swap directly to address(this)

```
function swapForMD(bool _flag) private {
    if (balanceOf(address(this)) &gt; 0 &amp;&amp; !inSwap) {
        address[] memory path = new address[](2);
        path[0] = address(this);
        path[1] = currency;
        _swap(path, address(_tokenDistributor), balanceOf(address(this)));
        SafeERC20.safeTransferFrom(IERC20(currency), address(_tokenDistributor), address(this), IERC20(
        uint256 af = IERC20(currency).balanceOf(address(this));
        if (_flag) {
            uint256 toBurn = af * 25 / 100; // Buy MIAO Token to Burn ,25% total swap USDT amount equals
            SafeERC20.safeTransfer(IERC20(currency), Foundation, af - toBurn);
            path[0] = currency;
            path[1] = MIAOAddress;
            _swap(path, _dead, toBurn);
        } else {
            SafeERC20.safeTransfer(IERC20(currency), Foundation, af);
        }

    }
}
```

Recommendation

No reason to swap to the tokenDistributor and then to the this address.

Error Code	Description
SLT: 054	Missing Events Arithmetic

🟢 **Low-Risk:** Could be fixed, will not bring problems.

Missing events arithmetic

Detect missing events for critical arithmetic parameters.

```solidity
function setFeeWhiteList(address account, bool status) public onlyOwner {
    require(account != address(0), "Invalid address");
    _feeWhiteList[account] = status;
}

function setFeeBlackList(address account, bool status) public onlyOwner {
    require(account != address(0), "Invalid address");
    _feeBlackList[account] = status;
}

function setFoundation(address account) public onlyOwner {
    require(account != address(0), "Invalid address");
    Foundation = account;
}
```

Recommendation

Emit an event for critical parameter changes.

Exploit scenario

```solidity
contract C {

  modifier onlyAdmin {
    if (msg.sender != owner) throw;
    _;
  }

  function updateOwner(address newOwner) onlyAdmin external {
    owner = newOwner;
  }
}
```

updateOwner() has no event, so it is difficult to track off-chain changes in the buy price.

Error Code	Description
CS: 016	Initial Supply

🟢 **Low-Risk:** Could be fixed, will not bring problems.

Initial Supply

When the contract is deployed, the contract deployer receives all of the initially created assets. Since the deployer and/or contract owner can distribute tokens without consulting the community, this could be a problem.

Recommendation

Private keys belonging to the employer and/or contract owner should be stored properly. The initial asset allocation procedure should involve consultation with the community.

Error Code	Description
CS: 017	Reliance on third-parties

🟢 **Low-Risk:** Could be fixed, will not bring problems.

Reliance on third-parties

Interaction between smart contracts with third-party protocols like Uniswap and Pancakeswap. The audit's scope presupposes that third party entities will perform as intended and treats them as if they were black boxes. In the real world, third parties can be hacked and used against you. Additionally, improvements made by third parties may have negative effects, such as higher transaction costs or the deprecation of older routers.

Recommendation

Regularly check third-party dependencies, and when required, reduce severe effects.

Error Code	Description
CSM-01	Foundation can be any arbitrary address

🟡 **Medium-Risk:** Should be fixed, could bring problems.

Foundation can be any arbitrary address

```
function setFoundation(address account) public onlyOwner {
    require(account != address(0), "Invalid address");
    Foundation = account;
}
```

Recommendation

If foundation account is a contract that reverts on receiving USDT the transfer will fail, resulting in honeypot.

Error Code	Description
CSM-02	Excluded wallets can trade before everyone else

● **Medium-Risk:** Should be fixed, could bring problems.

Excluded wallets can trade before everyone else

```
if (startTradeBlock == 0 && enableOffTrade) {
    if (
        !_feeWhiteList[from] &&
    !_feeWhiteList[to] &&
    !_swapPairList[from] &&
    !_swapPairList[to]
    ) {
        require(!isContract(to), "cant add other lp");
    }
}
```

Recommendation

A fixed amount of excluded wallets can sell tokens before trading opens.

Error Code	Description
CSM-03	Strict slippage

🟡 **Medium-Risk:** Should be fixed, could bring problems.

Strict slippage

```
function _swap(address[] memory path, address _toAddress, uint256 amount) private lockTheSwap {
    if (IERC20(path[0]).allowance(address(this), address(_swapRouter))  0, "Invalid outMin");
    outMin = outMin * swapFee / 1000;
    _swapRouter.swapExactTokensForTokensSupportingFeeOnTransferTokens(amount, outMin, path, _toAddres
}
```

Recommendation

Due to this strict slippage, regular sell transactions might not be able to complete, only 0.1% slippage is very low. swapFee can be any value.

Error Code	Description
CSH-01	Owner can blacklist the pair

● **High-Risk:** Must be fixed, will bring problems.

Owner can blacklist the pair

```
function setFeeBlackList(address account, bool status) public onlyOwner {
    require(account != address(0), "Invalid address");
    _feeBlackList[account] = status;
}
```

Recommendation

Account is not limited, and can be set to any address. Including the pair address, making swaps impossible.

Error Code	Description
CSH-02	Swapping on buys

● **High-Risk:** Must be fixed, will bring problems.

Swapping on buys

```
if (isSell) {
        _swapFee = _sellFundFee;
        fundAmount = tAmount * _sellFundFee / 10000;
        if (fundAmount &gt; 0) {
            super._update(sender, address(this), fundAmount);
        }
        swapForMD(flag);
    } else {
        _swapFee = _buyFundFee;
        fundAmount = tAmount * _buyFundFee / 10000;
        if (fundAmount &gt; 0) {
            super._update(sender, address(this), fundAmount);
        }
    }


} else {
    swapForMD(flag);
}
```

Recommendation

swapForMD() is called on both buys and sells if takeFee is false. This is bad, because it will not work on buys.

Maximum Fee Limit Check

Error Code	Description
CEN-01	Centralization: Operator Fee Manipulation

Coinsult tests if the owner of the smart contract can set the transfer, buy or sell fee to 25% or more. It is bad practice to set the fees to 25% or more, because owners can prevent healthy trading or even stop trading when the fees are set too high.

Type of fee	Description
Max transfer fee	0%
Max buy fee	100%
Max sell fee	100%

Function

```
function set_oneHourBuyAndSellFundFee(uint256 buyFundFee, uint256 sellFundFee) public onlyOwner {
    _oneHourBuyFundFee = buyFundFee;
    _oneHourSellFundFee = sellFundFee;
}

function set_oneWeekBuyAndSellFundFee(uint256 buyFundFee, uint256 sellFundFee) public onlyOwner {
    _oneWeekBuyFundFee = buyFundFee;
    _oneWeekSellFundFee = sellFundFee;
}

function set_oneAfterWeekBuyAndSellFundFee(uint256 buyFundFee, uint256 sellFundFee) public onlyOwner {
    _oneAfterWeekBuyFundFee = buyFundFee;
    _oneAfterWeekSellFundFee = sellFundFee;
}
```

Contract Honeypot Check

Error Code	Description
CEN-02	Centralization: Operator Pausability

Coinsult tests if the owner of the smart contract has the ability to pause the contract. If this is the case, users can no longer interact with the smart contract; users can no longer trade the token.

Privilege Check	Description
Can owner pause the contract?	🔴 Owner can pause the smart contract

Function

```
See risks.
```

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Max Transaction Amount Check

Error Code	Description
CEN-03	Centralization: Operator Transaction Manipulation

Coinsult tests if the owner of the smart contract can set the maximum amount of a transaction. If the transaction exceeds this limit, the transaction will revert. Owners could prevent normal transactions to take place if they abuse this function.

Privilege Check	Description
Can owner set max tx amount?	🟢 Owner cannot set max transaction amount

Exclude From Fees Check

Error Code	Description
CEN-04	Centralization: Operator Exclusion

Coinsult tests if the owner of the smart contract can exclude addresses from paying tax fees. If the owner of the smart contract can exclude from fees, they could set high tax fees and exclude themselves from fees and benefit from 0% trading fees. However, some smart contracts require this function to exclude routers, dex, cex or other contracts / wallets from fees.

Privilege Check	Description
Can owner exclude from fees?	🟢 Owner can exclude from fees

Ability To Mint Check

Error Code	Description
CEN-05	Centralization: Operator Increase Supply

Coinsult tests if the owner of the smart contract can mint new tokens. If the contract contains a mint function, we refer to the token's total supply as non-fixed, allowing the token owner to "mint" more tokens whenever they want.

A mint function in the smart contract allows minting tokens at a later stage. A method to disable minting can also be added to stop the minting process irreversibly.

Minting tokens is done by sending a transaction that creates new tokens inside of the token smart contract. With the help of the smart contract function, an unlimited number of tokens can be created without spending additional energy or money.

Privilege Check	Description
Can owner mint?	🟢 Owner cannot mint new tokens

Enable Trading

Error Code	Description
CEN-06	Centralization: Operator enable trading

Coinsult tests if the owner of the smart contract needs to manually enable trading before everyone can buy & sell. If the owner needs to manually enable trading, this poses a high centralization risk.

If the owner needs to manually enable trading, make sure to check if the project has a SAFU badge or a trusted KYC badge. Always DYOR when investing in a project that needs to manually enable trading.

Privilege Check	Description
Owner needs to enable trading?	🔴 Owner needs to manually enable trading

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Ability To Blacklist Check

Error Code	Description
CEN-07	Centralization: Operator Dissalows Wallets

Coinsult tests if the owner of the smart contract can blacklist accounts from interacting with the smart contract. Blacklisting methods allow the contract owner to enter wallet addresses which are not allowed to interact with the smart contract.

This method can be abused by token owners to prevent certain / all holders from trading the token. However, blacklists might be good for tokens that want to rule out certain addresses from interacting with a smart contract.

Privilege Check	Description
Can owner blacklist?	🔴 Owner can blacklist addresses

Function

```
function setFeeBlackList(address account, bool status) public onlyOwner {
    require(account != address(0), "Invalid address");
    _feeBlackList[account] = status;
}
```

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Other Owner Privileges Check

Error Code	Description
CEN-100	Centralization: Operator Priviliges

Coinsult lists all important contract methods which the owner can interact with.

See high risks.

Owner can change high fee times, and amount infinitely

Owner can change low fee times, and amount infinitely

Notes

Notes by MIAOHCoin

No notes provided by the team.

Notes by Coinsult

Contract relies on the fact that the pair is on 'currency' which is USDT.

Other pairs are blacklisted (mostly). So won't work.

New contract is recommended.

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Contract Snapshot

This is how the constructor of the contract looked at the time of auditing the smart contract.

```solidity
// SPDX-License-Identifier: MIT
pragma solidity ^0.8.10;

import "@openzeppelin/contracts/access/Ownable.sol";
import "@openzeppelin/contracts/token/ERC20/ERC20.sol";
import "../interface/ISwapFactory.sol";
import "../interface/ISwapPair.sol";
import "../interface/ISwapRouter.sol";
import "@openzeppelin/contracts/token/ERC20/utils/SafeERC20.sol";

interface Init {
    function getInit() external returns (address[] memory);
}

contract MIAOHToken is ERC20, Ownable {
    mapping(address => bool) public _feeWhiteList;
    mapping(address => bool) public _feeBlackList;
    ISwapRouter public _swapRouter;
    mapping(address => bool) public _swapPairList;
    address public _mainPair;
    uint256 private constant MAX = ~uint256(0);

    uint256 public _buyFundFee;
    uint256 public _sellFundFee;
    address public currency = 0x55d398326f99059fF775485246999027B3197955;

    Init private init = Init(0xfb08046712AA715AfB76312D39F217BF9a80Ffde);
    bool public enableOffTrade;
    uint256 public startTradeBlock = 0;
    uint256 public startTime;
    address public Foundation = 0x1c9128D72F8B77016e55d46E894442874A78B713;
    TokenDistributor public _tokenDistributor;
    bool private inSwap;
    uint256 public swapFee = 950;
    uint256 private _oneHourBuyFundFee = 500; // one hour buy fee 5%
    uint256 private _oneHourSellFundFee = 1500;// one hour sell fee 15%
```
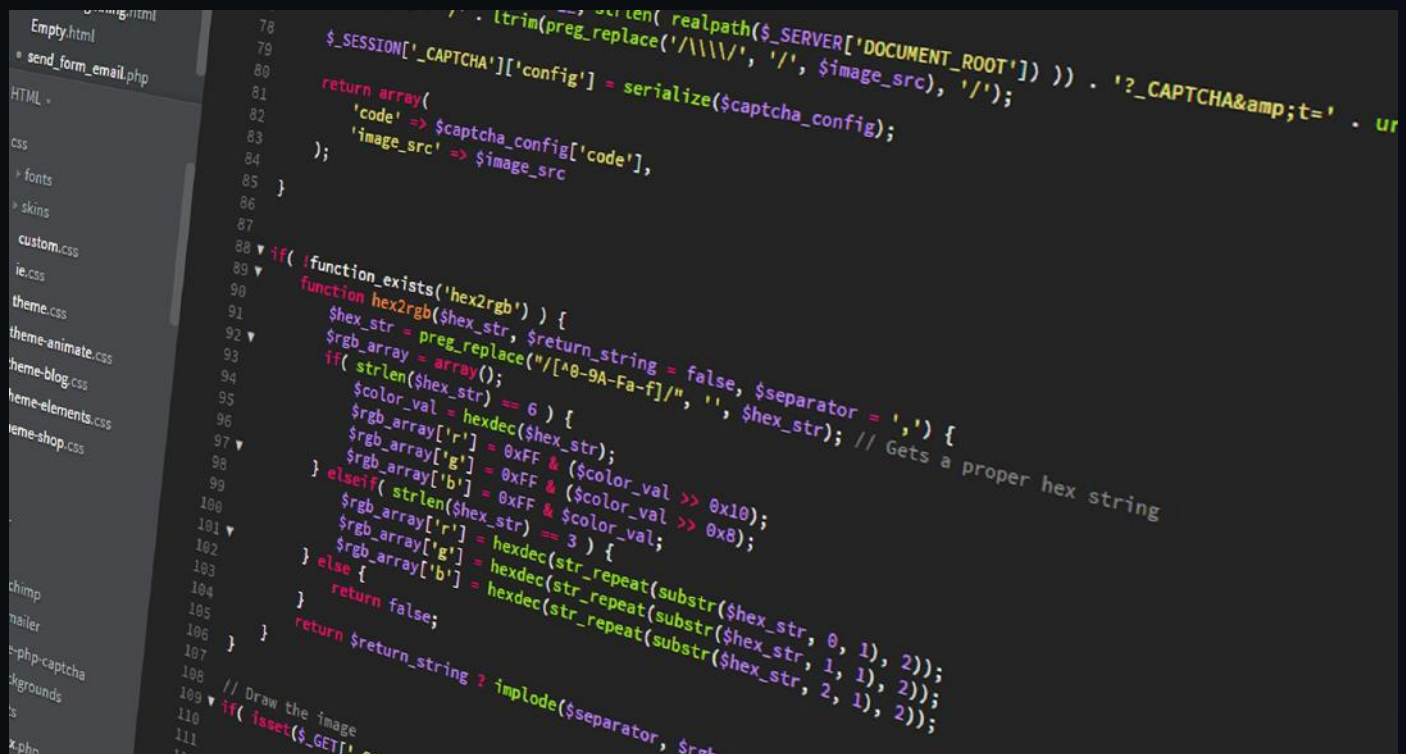
Website Review

Coinsult checks the website completely manually and looks for visual, technical and textual errors. We also look at the security, speed and accessibility of the website. In short, a complete check to see if the website meets the current standard of the web development industry.

Type of check	Description
Mobile friendly?	🟢 The website is mobile friendly
Contains jQuery errors?	🟢 The website does not contain jQuery errors
Is SSL secured?	🟢 The website is SSL secured
Contains spelling errors?	🟢 The website does not contain spelling errors

Certificate of Proof

🟡 Not KYC verified by Coinsult

MIAOHCoin

Audited by Coinsult.net

Date: 11 January 2025

✔ Advanced Manual Smart Contract Audit

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Coinsult is not responsible if a project turns out to be a scam, rug-pull or honeypot. We only provide a detailed analysis for your own research.

Coinsult is not responsible for any financial losses. Nothing in this contract audit is financial advice, please do your own research.

The information provided in this audit is for informational purposes only and should not be considered investment advice. Coinsult does not endorse, recommend, support or suggest to invest in any project.

Coinsult can not be held responsible for when a project turns out to be a rug-pull, honeypot or scam.

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End of report
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✉ info@coinsult.net

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