

Audit report of IOK3Y

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Prepared for: MR CEO.

Prepared On: - 12/11/2022

Connect with auditor: - <https://t.me/SolidityContractAuditor>

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THIS AUDIT REPORT WILL CONTAIN CONFIDENTIAL INFORMATION ABOUT THE SMART CONTRACT AND INTELLECTUAL PROPERTY OF THE CUSTOMER AS WELL AS INFORMATION ABOUT POTENTIAL VULNERABILITIES OF THEIR EXPLOITATION.

THE INFORMATION FROM THIS AUDIT REPORT CAN BE USED INTERNALLY BY THE CUSTOMER OR IT CAN BE DISCLOSED PUBLICLY AFTER ALL VULNERABILITIES ARE FIXED - UPON THE DECISION OF THE CUSTOMER.

1. Disclaimer

The smart contracts given for audit have been analyzed in accordance with the best industry practices at the date of this report, in relation to cybersecurity vulnerabilities and issues in smart contract source code, the details of which are disclosed in this report, (Source Code); the Source Code compilation, deployment, and functionality (performing the intended functions). Because the total numbers of test cases are unlimited, the audit makes no statements or warranties on the security of the code.

It also cannot be considered as a sufficient assessment regarding the utility and safety of the code, bug-free status, or any other statements of the contract. While we have done our best in conducting the analysis and producing this report, it is important to note that you should not rely on this report only - we recommend proceeding with several independent audits and a public bug bounty program to ensure the security of smart contracts.

Smart contracts are deployed and executed on a blockchain platform. The platform, its programming language, and other software related to the smart contract can have their own vulnerabilities that can lead to hacks. Thus, the audit can't guarantee explicit security of the audited smart contracts.

2. Introduction

Kishan Patel (Consultant) was contacted by MR CEO (Customer) to conduct a Smart Contracts Code Review and Security Analysis. This report presents the findings of the security assessment of Customer`s smart contracts and its code review conducted between 12/11/2022 – 13/11/2022.

The project has 1 file. It contains approx 300 lines of Solidity code. All the functions and state variables are well commented on using the natspec documentation, but that does not create any vulnerability.

3. Project information

Token Name	IOK3Y
Token Symbol	IOK3Y
Platform	Binance Smart Chain (BSC)
Order Started Date	12/11/2022
Order Completed Date	13/11/2022

4. List of attacks checked

- Over and under flows
- Short address attack
- Visibility & Delegate call
- Reentrancy / TheDAO hack
- Forcing BUSD to a contract
- Timestamp Dependence
- Gas Limit and Loops
- DoS with (Unexpected) Throw
- DoS with Block Gas Limit
- Transaction-Ordering Dependence
- Byte array vulnerabilities
- Style guide violation
- Transfer forwards all gas
- ERC20 API violation
- Malicious libraries
- Compiler version not fixed
- Unchecked external call - Unchecked math
- Unsafe type inference

5. Severity Definitions

Risk	Level Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to tokens loss etc.
Medium	Medium-level vulnerabilities are important to fix; however, they can't lead to tokens lose
Low	Low-level vulnerabilities are mostly related to outdated, unused etc. code snippets, that can't have significant impact on execution

6. Good things in code

- **Good required condition in functions:-**

- Here you are checking that contract balance is bigger or equal to amount value and transfer to recipient address is successfully done.

```
54
55     function sendValue(address payable recipient, uint256 amount) internal {
56         require(
57             address(this).balance >= amount,
58             "Address: insufficient balance"
59         );
60         (bool success, ) = recipient.call{value: amount}("");
61         require(
62             success,
63             "Address: unable to send value, recipient may have reverted"
64         );
65     }
66 }
```

- Here you are checking that contract balance is bigger or equal to value and target address is contract address or not.

```
96     function functionCallWithValue(
97         address target,
98         bytes memory data,
99         uint256 value,
100         string memory errorMessage
101     ) internal returns (bytes memory) {
102         require(
103             address(this).balance >= value,
104             "Address: insufficient balance for call"
105         );
106         require(isContract(target), "Address: call to non-contract");
107         (bool success, ) = target.call{value: value}(data);
108         require(success, errorMessage);
109     }
110 }
```


- Here you are checking that value is 0 or not and allowance of this contract in token contract from spender address is 0 or not.

```

204     function safeApprove(
205         IERC20 token,
206         address spender,
207         uint256 value
208     ) internal {
209         require(
210             (value == 0) || (token.allowance(address(this), spender) > 0),
211             "SafeERC20: approve from non-zero to non-zero allowance"
212         );

```

- Here you are checking that oldAllowance is bigger or equal to value.

```

235     function safeDecreaseAllowance(
236         IERC20 token,
237         address spender,
238         uint256 value
239     ) internal {
240         unchecked {
241             uint256 oldAllowance = token.allowance(address(this), spender);
242             require(
243                 oldAllowance >= value,
244                 "SafeERC20: decreased allowance below zero"
245             );

```

- Here you are checking that bStart value is true or false.

```

351     function deposit(uint256 amt, address referrer) public noReentrancy {
352         require(bStart, "Not started yet.");
353
354         uint256 userDeposit = (amt * 90) / 100;

```

- Here you are checking that maxPayout – totalWithdrawn from user is bigger than 0.

```

391
392     function claim() public noReentrant {
393         User storage user = Users[msg.sender];
394         uint256 rn = block.timestamp;
395         uint256 rewards = user.totalDeposits * 25 / 1000;
396
397         require(
398             user.maxPayout - user.totalWithdrawn > 0,
399             "You cannot claim anymore if your max payout has been r
400         );
401     }
402 }
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- Here you are checking that refBonus of user is bigger than 0.

```

454
455     function withdrawRef() public noReentrant {
456         User storage user = Users[msg.sender];
457
458         require(
459             user.refBonus > 0,
460             "You don't have any referrals to claim!"
461         );
462     }
463 }
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- Here you are checking that bStart value is false or not.

```

469
470     function start() public onlyOwner {
471         require(bStart == false, "Started already");
472         bStart = true;
473     }
474 }
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```

7. Critical vulnerabilities in code

- No Critical vulnerabilities found

8. Medium vulnerabilities in code

- No Medium vulnerabilities found

9. Low vulnerabilities in code

9.1. Suggestions to add code validations:-

=> You have implemented required validation in contract.

=> There are some place where you can improve validation and security of your code.

=> These are all just suggestion it is not bug.

Function: - Can't change owner

```
292 contract Ownable is Context {
293     address private _owner;
294
295     /**
296
```

- o You have Ownable library but there is no functionality with which you can change owner of contract.
- o If you want to change owner of contract in future then you are not able to do it.

Function: - Can't feeWallet address

```
323
324     address constant feeWallet = 0x24f405B5B640f22136C39cfe4f37D30c9
325     IERC20 public BUSD;
326     bool bStart;
```

- o You have feeWallet where all fees will go but there is no way in contract with which you can change this address after deployment.
- o If in future you want to change this feeWallet then you are not able to do it from current implementation.

10. Summary

- **Number of problems in the smart contract as per severity level**

Critical	Medium	Low
0	0	2

According to the assessment, the smart contract code is well secured. The code is written with all validation and all security is implemented. Code is performing well and there is no way to steal funds from this contract.

- **Good Point:** Code performance and quality are good. All kind of necessary validation added into smart contract and all validations are working as expected.
- **Suggestions:** Please try to implement suggested code validations.