Guard

Smart contracts security assessment

Final report

Tariff: Top

DIB Yield

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Contents

Introduction

The report has been prepared for **DIB Yield**.

The code is available at DIB-yield/smart-contracts Github repository and was audited after the commit a3531b2.

Update. The recheck was done after the commit caf0504.

Update 2. The code with slight modifications was deployed to Arbitrum network. No new issues were introduced. See deployed addresses in the contracts section.

Name	DIB Yield
Audit date	2023-04-01 - 2023-04-05
Language	Solidity
Platform	Arbitrum Network

Contracts checked

Name	Address
DibYieldMasterChef	0xaA33750b1ba4faf425f494e9c48fAe4958b35c2D
DibYieldToken	0x99a8A7a45f1435aa6bfE099320a0EbDeC2BEAc03

Procedure

We perform our audit according to the following procedure:

Automated analysis

- Scanning the project's smart contracts with several publicly available automated Solidity analysis tools
- Manual verification (reject or confirm) all the issues found by the tools

Manual audit

- Manually analyze smart contracts for security vulnerabilities
- Smart contracts' logic check

Known vulnerabilities checked

Title	Check result
Unencrypted Private Data On-Chain	passed
Code With No Effects	passed
Message call with hardcoded gas amount	passed
Typographical Error	passed
DoS With Block Gas Limit	passed
Presence of unused variables	passed
Incorrect Inheritance Order	passed
Requirement Violation	passed
Weak Sources of Randomness from Chain Attributes	passed
Shadowing State Variables	passed
Incorrect Constructor Name	passed
Block values as a proxy for time	passed
Authorization through tx.origin	passed
DoS with Failed Call	passed
Delegatecall to Untrusted Callee	passed
Use of Deprecated Solidity Functions	passed
Assert Violation	passed
State Variable Default Visibility	passed

Reentrancy	passed
Unprotected SELFDESTRUCT Instruction	passed
Unprotected Ether Withdrawal	passed
Unchecked Call Return Value	passed
Floating Pragma	passed
Outdated Compiler Version	passed
Integer Overflow and Underflow	passed
Function Default Visibility	passed

Classification of issue severity

High severity	High severity issues can cause a significant or full loss of funds, change of contract ownership, major interference with contract logic. Such issues require immediate attention.
Medium severity	Medium severity issues do not pose an immediate risk, but can be detrimental to the client's reputation if exploited. Medium severity issues may lead to a contract failure and can be fixed by modifying the contract state or redeployment. Such issues require attention.
Low severity	Low severity issues do not cause significant destruction to the contract's functionality. Such issues are recommended to be taken into consideration.

Issues

High severity issues

No issues were found

Medium severity issues

1. No lock check in the emergencyWithdraw function (DibYieldMasterChef)

Status: Fixed

The user can lock deposited tokens for a specified amount of time for a deposit discount, but the lock can be circumvented with the emergencyWithdraw function as it does not check for the unlock time.

```
function emergencyWithdraw(uint256 _pid) external nonReentrant {
    PoolInfo storage pool = poolInfo[_pid];
    UserInfo storage user = userInfo[_pid][msg.sender];
    uint256 amount = user.amount;
    user.amount = 0;
    user.rewardDebt = 0;
    pool.totalStaked = pool.totalStaked.sub(amount);
    pool.stakeToken.safeTransfer(address(msg.sender), amount);
    emit EmergencyWithdraw(msg.sender, _pid, amount);
}
```

Recommendation: Add a requirement check `require(user.unlockTime <= block.timestamp, "not yet");` in the `emergencyWithdraw()` function.

Update: The required check was added in the update.

Low severity issues

1. Gas optimization (DibYieldMasterChef)

Status: Fixed

1. The Solidity 8 has built-in overflow checks and usage of SafeMath library is unnecessary.

2. Mapping `poolExistance` is not used anywhere in the code.

Recommendation: Remove the SafeMath library and not used mapping.

Team response: The SafeMath was left in the code to minimize risk of errors removing it from the original code.

Conclusion

DIB Yield DibYieldMasterChef, DibYieldToken contracts were audited. 1 medium, 1 low severity issues were found.

1 medium, 1 low severity issues have been fixed in the update.

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