



METATRUST

Draft
Security Assessment for
**Hack-20220928-BXH
(10K-FLP)**

July 23, 2023






Executive Summary

Overview			
Project Name	Hack-20220928-BXH (10K-FLP)		
Codebase URL	-		
Scan Engine	AI Analyzer		
Scan Time	2023/07/23 16:02:21		
Commit Id	-		

Total			
Critical Issues	0		
High risk Issues	1		
Medium risk Issues	0		
Low risk Issues	0		
Informational Issues	0		

Critical Issues		The issue can cause large economic losses, large-scale data disorder, loss of control of authority management, failure of key functions, or indirectly affect the correct operation of other smart contracts interacting with it.
High Risk Issues		The issue puts a large number of users' sensitive information at risk or is reasonably likely to lead to catastrophic impacts on clients' reputations or serious financial implications for clients and users.
Medium Risk Issues		The issue puts a subset of users' sensitive information at risk, would be detrimental to the client's reputation if exploited, or is reasonably likely to lead to moderate financial impact.
Low Risk Issues		The risk is relatively small and could not be exploited on a recurring basis, or is a risk that the client has indicated is low-impact in view of the client's business circumstances.
Informational Issue		The issue does not pose an immediate risk but is relevant to security best practices or Defence in Depth.



	Critical Issues	0%	0
	High risk Issues	100%	1
	Medium risk Issues	0%	0
	Low risk Issues	0%	0
	Informational Issues	0%	0

Summary of Findings

MetaScan security assessment was performed on **July 23, 2023 16:02:21** on project **Hack-20220928-BXH (10K-FLP)** with the repository **Hack_20220928_BXH** on branch **default branch**. The assessment was carried out by scanning the project's codebase using the scan engine **AI Analyzer**. There are in total **1** vulnerabilities / security risks discovered during the scanning session, among which **0** critical vulnerabilities, **1** high risk vulnerabilities, **0** medium risk vulnerabilities, **0** low risk vulnerabilities, **0** informational issues.

ID	Description	Severity
MSA-001	MWE-200: Insecure LP Token Value Calculation	High risk



Findings

Critical (0)

No Critical vulnerabilities found here

High risk (1)

1. MWE-200: Insecure LP Token Value Calculation

 High risk Security Analyzer

Liquidity token value/price can be manipulated to cause flashloan attacks.

File(s) Affected

TokenStakingPoolDelegate.sol #1602-1614

```
1602     function getITokenBonusAmount( uint256 _pid, uint256 _amountInToken ) public view returns (uint256)
1603     {
1604         PoolInfo storage pool = poolInfo[_pid];
1605         (uint112 _reserve0, uint112 _reserve1, ) = IUniswapV2Pair(pool.swapPairAddress).getReserves()
1606         uint256 amountTokenOut = 0;
1607         uint256 _fee = 0;
1608         if(IUniswapV2Pair(pool.swapPairAddress).token0() == address(iToken)){
1609             amountTokenOut = getAmountOut( _amountInToken , _reserve0, _reserve1, _fee);
1610         } else {
1611             amountTokenOut = getAmountOut( _amountInToken , _reserve1, _reserve0, _fee);
1612         }
1613         return amountTokenOut;
1614     }
```

TokenStakingPoolDelegate.sol #1962-1992

```
1962     function depositIToken(uint256 _pid, uint256 _amount, address _user) private {
1963         PoolInfo storage pool = poolInfo[_pid];
1964         UserInfo storage user = userInfo[_pid][_user];
1965         updatePool(_pid);
1966         if (user.amount > 0) {
1967             uint256 pendingAmount = user.amount.mul(pool.accITokenPerShare).div(1e12).sub(user.rewardDebt);
1968             if (pendingAmount > 0) {
1969                 if( pool.enableBonus == false ){
1970                     safeITokenTransfer(_user, pendingAmount);
1971                 }
1972                 else{
1973                     pendingAmount = getITokenBonusAmount(_pid, pendingAmount);
1974                     safeBonusTransfer(_pid, _user, pendingAmount);
1975                 }
1976             }
1977             user.rewardReceived = user.rewardReceived.add( pendingAmount );
1978             user.lastReceived = block.timestamp;
1979         }
1980     }
1981 }
1982 if (_amount > 0) {
1983     pool.lpToken.safeTransferFrom(_user, address(this), _amount);
1984     user.amount = user.amount.add(_amount);
1985     pool.totalAmount = pool.totalAmount.add(_amount);
1986 }
1987 user.rewardDebt = user.amount.mul(pool.accITokenPerShare).div(1e12);
1988
1989 userDepositInfo[_pid][_user].push( DepositOrder({orderTime: block.timestamp, amount: _amount}) );
1990
1991 emit Deposit(_user, _pid, _amount);
1992 }
```

Recommendation

Do not use AMM pool or custom liquidity calculation to calculate LP token value/price.

Medium risk (0)

No Medium risk vulnerabilities found here

Low risk (0)

No Low risk vulnerabilities found here

Informational (0)

No Informational vulnerabilities found here

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