



METATRUST

Draft
Security Assessment for
**100-LogicBug-Prepo
(10K-FD)**






July 23, 2023

Executive Summary

Overview			
Project Name	100-LogicBug-Prepo (10K-FD)		
Codebase URL	https://github.com/metatrust-demo/LogicBug-Prepo		
Scan Engine	AI Analyzer		
Scan Time	2023/07/23 20:52:51		
Commit Id	1916b17		

Total			
Critical 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	1	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	0	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	0	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 Issues	0	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 20:52:51** on project **100-LogicBug-Prepo (10K-FD)** with the repository **<https://github.com/metatrust-demo/LogicBug-Prepo>** 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-204: Unsafe First Deposit	High risk



Findings

Critical (0)

No Critical vulnerabilities found here

High risk (1)

1. MWE-204: Unsafe First Deposit

 High risk Security Analyzer

First depositor can break minting of shares or drain the liquidity of all users.

File(s) Affected

contracts/core/Collateral.sol #52-93

```
52     function deposit(uint256 _amount)
53     external
54     override
55     nonReentrant
56     returns (uint256)
57     {
58         require(_depositsAllowed, "Deposits not allowed");
59         _baseToken.safeTransferFrom(msg.sender, address(this), _amount);
60         // Calculate fees and shares to mint including latent contract funds
61         uint256 _amountToDeposit = _baseToken.balanceOf(address(this));
62         // Record deposit before fee is taken
63         if (address(_depositHook) != address(0)) {
64             _depositHook.hook(msg.sender, _amount, _amountToDeposit);
65         }
66         /**
67          * Add 1 to avoid rounding to zero, only process deposit if user is
68          * depositing an amount large enough to pay a fee.
69          */
70         uint256 _fee = (_amountToDeposit * _mintingFee) / FEE_DENOMINATOR + 1;
71         require(_amountToDeposit > _fee, "Deposit amount too small");
72         _baseToken.safeTransfer(_treasury, _fee);
73         _amountToDeposit -= _fee;
74
75         uint256 _valueBefore = _strategyController.totalValue();
76         _baseToken.approve(address(_strategyController), _amountToDeposit);
77         _strategyController.deposit(_amountToDeposit);
78         uint256 _valueAfter = _strategyController.totalValue();
79         _amountToDeposit = _valueAfter - _valueBefore;
80
81         uint256 _shares = 0;
82         if (totalSupply() == 0) {
83             _shares = _amountToDeposit;
84         } else {
85             /**
86              * # of shares owed = amount deposited / cost per share, cost per
87              * share = total supply / total value.
88              */
89             _shares = (_amountToDeposit * totalSupply()) / (_valueBefore);
90         }
91         _mint(msg.sender, _shares);
92         return _shares;
93     }
```

Recommendation

When totalSupply() == 0, send the first min liquidity LP tokens to the zero address to enable share dilution.

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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