TechRate
June, 2022

SMART CONTRACTS SECURITY AUDIT REPORT

Audit Details

Audited project

BlueLotusDao DEX

Deployer address

0xab0179cd91a2d2c369f4488a43ff6ca110b8eea9

Client contacts:

Genesys Network Team

Blockchain

Binance Smart Chain

Project website:

https://www.bluelotusdao.org/

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

Background

TechRate was commissioned by BlueLotusDao DEX to perform an audit of smart contracts on commit:

- https://bscscan.com/address/0x6A397FCe59CB8282d1D05E58eF23534934607eF1#code
- https://bscscan.com/address/0x70D319F74090d3BB6bfEA496Bea73692C59B1AD1#code
- https://bscscan.com/address/0x6839C58A52eE091b1e8246A617907809c4d0a762#code
- https://bscscan.com/address/0x495295a4928674b32fc05d5d59959878abd3df20#code
- https://bscscan.com/address/0xe76Ae05c56EcC8182C34ACD88729A266D81ab54b#code
- https://bscscan.com/address/0x3A50a3400a22cae07420a6ce203Ca2eCe5f7654e#code

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Issues Checking Status

	Issue description	Checking status
1.	**Compiler errors.**	Passed
2.	**Race conditions and Reentrancy. Cross-function race conditions.**	Passed
3.	**Possible delays in data delivery.**	Passed
4.	**Oracle calls.**	Passed
5.	**Front running.**	Passed
6.	**Timestamp dependence.**	Passed
7.	**Integer Overflow and Underflow.**	Passed
8.	**DoS with Revert.**	Passed
9.	**DoS with block gas limit.**	Low issues
10.	**Methods execution permissions.**	Passed
11.	**Economy model of the contract.**	Passed
12.	**The impact of the exchange rate on the logic.**	Passed
13.	**Private user data leaks.**	Passed
14.	**Malicious Event log.**	Passed
15.	**Scoping and Declarations.**	Passed
16.	**Uninitialized storage pointers.**	Passed
17.	**Arithmetic accuracy.**	Passed
18.	**Design Logic.**	Low issues
19.	**Cross-function race conditions.**	Passed
20.	**Safe Open Zeppelin contracts implementation and usage.**	Passed
21.	**Fallback function security.**	Passed

Security Issues

High Severity Issues

No high severity issues found.

Medium Severity Issues

No medium severity issues found.

Low Severity Issues

1. Out of gas

Issue:

- add(uint256 _allocPoint, ...), set(uint256 _pid, ...), updateGsysRate(), burnGsys() and updateEmissionRate() could invoke massUpdatePools() function, that can fail due to block gas limit if the pool size is too big.

Recommendation:
Check that the pool array length is not too big.

2. add() function issue

Issue:

- nonDuplicated modifier will work for all lp tokens except _gsys, because there is no adding it in contract constructor. Be careful about updatePool() function.
- MasterChefV2() doesn't have nonDuplicated modifier, be careful about updatePool() function.

Recommendation:
Don't add _gsys to pool.

Notes:

- Gsyspool does not have emergency withdraw function.
- Gsyspool contract may take withdrawal fee.
- It is better to check the deposited amount using the MasterChefV2 method - as the difference between the initial balance of the contract and the balance after the transfer of tokens.

Owner privileges (In the period when the owner is not renounced)

Gsyspool:

- Owner can change admin, treasury and operator addresses.
- Owner can call init() function.
- Operator and Owner can unlock address when lock time is finished.

MasterChefV2:

- Owner can call init() function.
- Owner can call burnGsys() function (send Gsys token to burn admin address).
- Owner can update Gsys rate.
- Owner can change burnAdmin address.
- Owner can whitelist addresses.
- Owner can change boostContract address.
- boostContract can change boost multiplier.

MasterChef:

- Owner can change BONUS_MULTIPLIER.
- Owner can change gsysPerBlock.
- Owner can change startBlock.

GsysBar:

- Owner can mint and burn tokens before transferring ownership to MasterChef.
- Owner can call safe transfer from the contract before transferring ownership to MasterChef.

GenesysFactory:

- feeToSetter address can change feeTo address.
- feeToSetter address can change feeToSetter address.

Conclusion

Smart contracts contain low severity issues! The further transfers and operations with the funds raise are not related to this particular contract. 10% of reward also minted to dev address. Smart contracts contain interfaces that is not audited due to out of scope, some functions may work different ways.

TechRate note:
Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.