DiamondDAO

Smart Contract Security Audit

Date 28/Feb/2022

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.

Purpose

This document details ApeAudits' findings and recommended solutions. This audit was performed on February 28, 2022. We audited an undeployed contract. If anything changes after deployment, we will update our report.

ERC721 Name	DiamondDAO
ERC721 Symbol	DD

Findings

NO.	Audit Items	Audit Subclass	Audit Subclass Result
1	Overflow Audit	N/A	Passed
2	Race Conditions Audit	N/A	Passed
3	Authority Control Audit	Permission Vulnerability Audit Excessive Auditing Authority	Passed Passed
4	Safe Design Audit	Zeppelin Module Safe Compiler Version Hard-coded Version Fallback Function Safeuse Show Coding Security Function Return Value Security Call Function Security	Passed Passed Passed Passed Passed Passed Passed
5	Denial of Service Audit	N/A	Passed
6	Gas Optimization Audit	N/A	Passed
7	Design Logic Audit	N/A	Passed
8	Malicious Event Log Audit	N/A	Passed
9	"False Deposit" Vulnerability Audit	N/A	Passed
10	Uninitialized Storage Pointers Audit	N/A	Passed
11	Arithmetic Accuracy Deviation Audit	N/A	Passed

High Severity Issues

- None.

Medium Severity Issues

- **Issue:**
  Solidity version could be < 0.8.0 and SafeMath is not used instead. It is unlikely with this contract, but numerical overflow is possible when not using Solidity >= 0.8.0 or SafeMath.

  Recommendation:
  Use Solidity >= 0.8.0.

- **Issue:**
  The array `WW` is iterated through to check whitelist, which increases gas cost based on array size.

  Recommendation:
  Use a mapping instead.

- **Issue:**
  The `mint(uint256)` function does not refund ETH paid in excess of the price. Users will have to exercise caution not to overpay.

  Recommendation:
  Refund excess ETH.

Low Severity Issues

- None.

Conclusion

Three potential moderate severity issues found. They are all easy to fix, however.

Appendix

Because the call graph for this contract is too large to read comfortably in a document, all additional information from our audit can be found at https://github.com/ApeAudits1/DiamondDao-extras