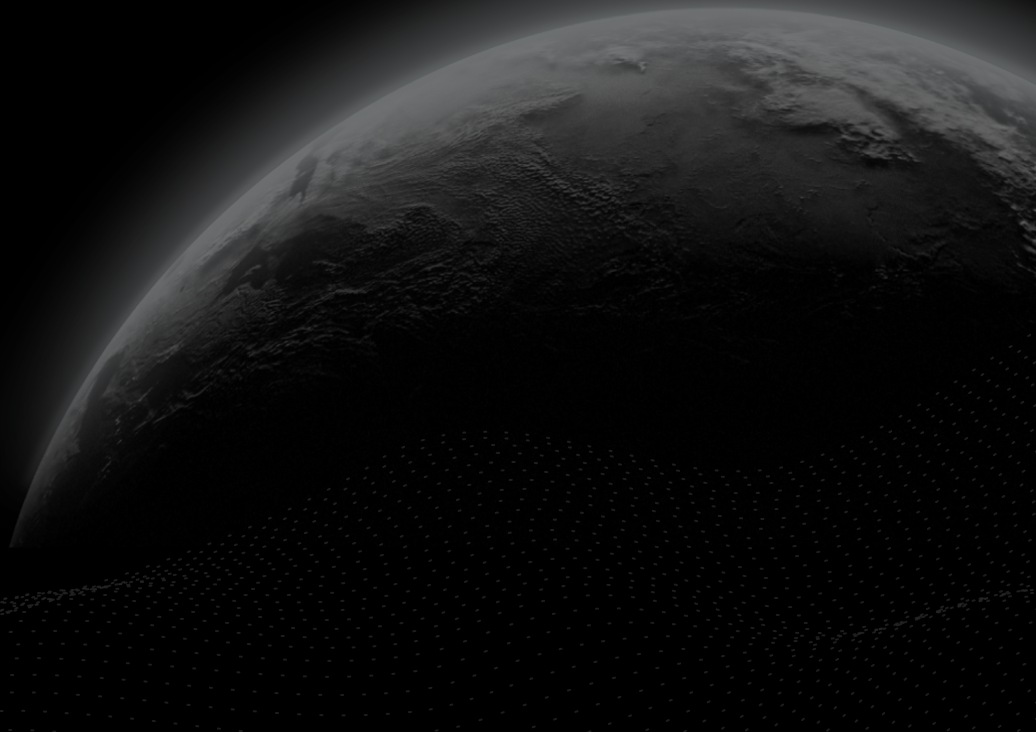




Security Assessment

# Bears Rumble

CertiK Assessed on Jun 28th, 2024





CertiK Assessed on Jun 28th, 2024

## Bears Rumble

The security assessment was prepared by CertiK, the leader in Web3.0 security.

### Executive Summary

TYPES ERC-20	ECOSYSTEM EVM Compatible	METHODS Manual Review, Static Analysis
LANGUAGE Solidity	TIMELINE Delivered on 06/28/2024	KEY COMPONENTS N/A

#### CODEBASE

<https://github.com/Bears-Rumble/smart-contracts/blob/0c7a2c78a82a041e5e9ff9c03ba9d0a74ae6725d/contracts/BearRumble.sol>

[View All in Codebase Page](#)

### Highlighted Centralization Risks

⚠ Initial multi-sig address token share is 100%

### Vulnerability Summary



<span style="color: red;">■</span> 0 Critical		Critical risks are those that impact the safe functioning of a platform and must be addressed before launch. Users should not invest in any project with outstanding critical risks.
<span style="color: orange;">■</span> 1 Major	1 Mitigated	Major risks can include centralization issues and logical errors. Under specific circumstances, these major risks can lead to loss of funds and/or control of the project.
<span style="color: gold;">■</span> 0 Medium		Medium risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform.
<span style="color: lightgrey;">■</span> 0 Minor		Minor risks can be any of the above, but on a smaller scale. They generally do not compromise the overall integrity of the project, but they may be less efficient than other solutions.
<span style="color: darkblue;">■</span> 0 Informational		Informational errors are often recommendations to improve the style of the code or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code.

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## **| Disclaimer**


# CODEBASE | BEARS RUMBLE

## Repository

<https://github.com/Bears-Rumble/smart-contracts/blob/0c7a2c78a82a041e5e9ff9c03ba9d0a74ae6725d/contracts/BearRumble.sol>

# AUDIT SCOPE | BEARS RUMBLE

1 file audited ● 1 file without findings

ID	Repo	File	SHA256 Checksum
● BRR	Bears-Rumble/smart-contracts	 BearRumble.sol	12f681b2e7f1539ce1659b8b33713f4586177a fa2fe46da6270b33e1c17c33c8

## APPROACH & METHODS | BEARS RUMBLE

This report has been prepared for Bears Rumble to discover issues and vulnerabilities in the source code of the Bears Rumble project as well as any contract dependencies that were not part of an officially recognized library. A comprehensive examination has been performed, utilizing Manual Review and Static Analysis techniques.

The auditing process pays special attention to the following considerations:

- Testing the smart contracts against both common and uncommon attack vectors.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Ensuring contract logic meets the specifications and intentions of the client.
- Cross referencing contract structure and implementation against similar smart contracts produced by industry leaders.
- Thorough line-by-line manual review of the entire codebase by industry experts.

The security assessment resulted in findings that ranged from critical to informational. We recommend addressing these findings to ensure a high level of security standards and industry practices. We suggest recommendations that could better serve the project from the security perspective:

- Testing the smart contracts against both common and uncommon attack vectors;
- Enhance general coding practices for better structures of source codes;
- Add enough unit tests to cover the possible use cases;
- Provide more comments per each function for readability, especially contracts that are verified in public;
- Provide more transparency on privileged activities once the protocol is live.

# FINDINGS | BEARS RUMBLE

**1**

Total Findings

**0**

Critical

**1**

Major

**0**

Medium

**0**

Minor

**0**

Informational

This report has been prepared to discover issues and vulnerabilities for Bears Rumble. Through this audit, we have uncovered 1 issues ranging from different severity levels. Utilizing the techniques of Manual Review & Static Analysis to complement rigorous manual code reviews, we discovered the following findings:

ID	Title	Category	Severity	Status
BRR-01	Initial Token Distribution	Centralization	Major	● Mitigated

## BRR-01 | INITIAL TOKEN DISTRIBUTION

Category	Severity	Location	Status
Centralization	● Major	BearRumble.sol: 8	● Mitigated

### Description

All of the BR tokens are sent to the contract deployer. This is a centralization risk because the deployer can distribute tokens without obtaining the consensus of the community. Any compromise to these addresses may allow a hacker to steal and sell tokens on the market, resulting in severe damage to the project.

### Recommendation

It is recommended that the team be transparent regarding the initial token distribution process. The token distribution plan should be published in a public location that the community can access. The team should make efforts to restrict access to the private keys of the deployer account or EOAs. A multi-signature (2/3, 3/5) wallet can be used to prevent a single point of failure due to a private key compromise. Additionally, the team can lock up a portion of tokens, release them with a vesting schedule for long-term success, and deanonymize the project team with a third-party KYC provider to create greater accountability.

### Alleviation

[Bears Rumble Team, 06/21/2024]: Token distribution plan: [ICO Bears Rumble](#).

All tokens deployed on Ethereum address [0x377756bD580cd76B0DF15b8BbD93E05Ce55577D4](#) are currently owned by the multisig wallet.

- Gnosis Safe (on Ethereum): [0x4dbe81A6b5bA80A0639efc66257BDfb802a5CfEB](#)
- The 3/5 multisig addresses:
  1. Signer: eth:0x78d7cd9dd9988ea33BAa9a8fAa6bAf0b4D6385f4
  2. Signer: eth:0x7dcF18e3A24728351D8b18645430d349766B228E
  3. Signer: eth:0xCD87c05F02d75Ef14c22d44597Fa40E0EF5cb37D
  4. Signer: eth:0x418561110bEADd92C7A72BF209D5733E9be276dF
  5. Signer: eth:0x1850c0eC40c13D0a42Dcaa68d1285EF92D457671

[CertiK, 06/21/2024]: While this strategy has indeed reduced the risk, it's crucial to note that it has not completely eliminated it. CertiK strongly encourages the project team to periodically revisit the private key security management of all above-listed addresses.



## APPENDIX | BEARS RUMBLE

### Finding Categories

Categories	Description
Centralization	Centralization findings detail the design choices of designating privileged roles or other centralized controls over the code.

### Checksum Calculation Method

The "Checksum" field in the "Audit Scope" section is calculated as the SHA-256 (Secure Hash Algorithm 2 with digest size of 256 bits) digest of the content of each file hosted in the listed source repository under the specified commit.

The result is hexadecimal encoded and is the same as the output of the Linux "sha256sum" command against the target file.

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