HACKEN

SMART CONTRACT CODE REVIEW AND SECURITY ANALYSIS REPORT

Customer: Basketballverse
Date: April 27th, 2022

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Document

Name	Smart Contract Code Review and Security Analysis Report for BasketballVerse.
Approved By	Evgeniy Bezuglyi | SC Department Head at Hacken OU
Type of Contracts	ERC20 token; Transfer controller
Platform	EVM
Language	Solidity
Methods	Architecture Review, Functional Testing, Computer-Aided Verification, Manual Review
Website	https://basketballverse.gg/
Timeline	26.04.2022 - 27.04.2022
Changelog	27.04.2022 - Initial Review

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Introduction

Hacken OÜ (Consultant) was contracted by BasketballVerse (Customer) to conduct a Smart Contract Code Review and Security Analysis. This report presents the findings of the security assessment of the Customer's smart contracts.

Scope

The scope of the project is deployed smart contracts:

Deployed contract:
https://etherscan.io/address/0x96cc63eef1f63cde9acd69061bfb7606887f26d8#code
Documentation: Yes
JS tests: No
Contracts:
BVR.sol

We have scanned this smart contract for commonly known and more specific vulnerabilities. Here are some of the commonly known vulnerabilities that are considered:

Category	Check Item
Code review	▪ Reentrancy ▪ Ownership Takeover ▪ Timestamp Dependence ▪ Gas Limit and Loops ▪ Transaction-Ordering Dependence ▪ Style guide violation ▪ EIP standards violation ▪ Unchecked external call ▪ Unchecked math ▪ Unsafe type inference ▪ Implicit visibility level ▪ Deployment Consistency ▪ Repository Consistency
Functional review	▪ Business Logics Review ▪ Functionality Checks ▪ Access Control & Authorization ▪ Escrow manipulation ▪ Token Supply manipulation ▪ Assets integrity ▪ User Balances manipulation ▪ Data Consistency ▪ Kill-Switch Mechanism

Executive Summary

The score measurements details can be found in the corresponding section of the methodology.

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Documentation quality

The Customer provided comprehensive documentation. The total Documentation Quality score is **10** out of **10**.

Code quality

The total CodeQuality score is **5** out of **10**. No unit tests were provided.

Architecture quality

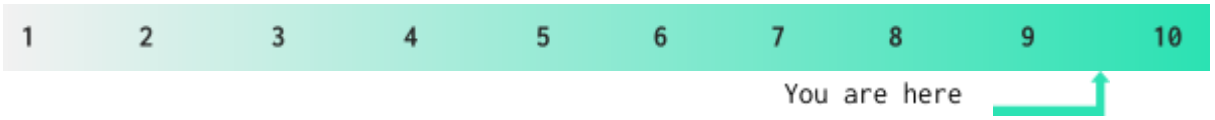
The architecture quality score is **10** out of **10**.

Security score

As a result of the audit, security engineers found **no** issues. The security score is **10** out of **10**.

Summary

According to the assessment, the Customer's smart contract has the following score: **9.5**



Notices

The LssController contract is not within the scope of the audit but has a significant impact on the audited contracts:

1. it can transfer tokens from the user to itself;
2. it has the ability to reject token transfers;
3. it has the ability to reject changing allowances.

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Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to assets loss or data manipulations.
High	High-level vulnerabilities are difficult to exploit; however, they also have a significant impact on smart contract execution, e.g., public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they cannot lead to assets loss or data manipulations.
Low	Low-level vulnerabilities are mostly related to outdated, unused, etc. code snippets that cannot have a significant impact on execution

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Findings

Critical

No critical severity issues were found.

High

No high severity issues were found.

Medium

No medium severity issues were found.

Low

No low severity issues were found.

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Disclaimers

Hacken Disclaimer

The smart contracts given for audit have been analyzed by the best industry practices at the date of this report, with cybersecurity vulnerabilities and issues in smart contract source code, the details of which are disclosed in this report (Source Code); the Source Code compilation, deployment, and functionality (performing the intended functions).

The audit makes no statements or warranties on the security of the code. It also cannot be considered a sufficient assessment regarding the utility and safety of the code, bug-free status, or any other contract statements. While we have done our best in conducting the analysis and producing this report, it is important to note that you should not rely on this report only — we recommend proceeding with several independent audits and a public bug bounty program to ensure the security of smart contracts.

Technical Disclaimer

Smart contracts are deployed and executed on a blockchain platform. The platform, its programming language, and other software related to the smart contract can have vulnerabilities that can lead to hacks. Thus, the audit cannot guarantee the explicit security of the audited smart contracts.