soken

SMART CONTRACT
SECURITY AUDIT

Royal BNB

July, 2021

Table of Contents

Disclaimer

This is a comprehensive report based on our automated and manual examination of cybersecurity vulnerabilities and framework flaws. We took into consideration smart contract based algorithms, as well. Reading the full analysis report is essential to build your understanding of project's security level. It is crucial to take note, though we have done our best to perform this analysis and report, that you should not rely on the our research and cannot claim what it states or how we created it. Before making any judgments, you have to conduct your own independent research. We will discuss this in more depth in the following disclaimer - please read it fully.

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Security analysis is based only on the smart contracts. No applications or operations were reviewed for security. No product code has been reviewed.

Procedure

Our analysis contains following steps:

1. Project Analysis;

2. Manual analysis of smart contracts:
- Deploying smart contracts on any of the network(Ropsten/Rinkeby) using Remix IDE
- Hashes of all transaction will be recorded
- Behaviour of functions and gas consumption is noted, as well.

3. Unit Testing:
- Smart contract functions will be unit tested on multiple parameters and under multiple conditions to ensure that all paths of functions are functioning as intended.
- In this phase intended behaviour of smart contract is verified.
- In this phase, we would also ensure that smart contract functions are not consuming unnecessary gas.
- Gas limits of functions will be verified in this stage.

4. Automated Testing:
- Mythril
- Oyente
- Manticore
- Solgraph

Terminology

We categorize the finding into 4 categories based on their vulnerability:

- Low-severity issue — less important, must be analyzed
- Medium-severity issue — important, needs to be analyzed and fixed
- High-severity issue —important, might cause vulnerabilities, must be analyzed and fixed
- Critical-severity issue —serious bug causes, must be analyzed and fixed.

Limitations

The security audit of Smart Contract cannot cover all vulnerabilities. Even if no vulnerabilities are detected in the audit, there is no guarantee that future smart contracts are safe. Smart contracts are in most cases safeguarded against specific sorts of attacks. In order to find as many flaws as possible, we carried out a comprehensive smart contract audit. Audit is a document that is not legally binding and guarantees nothing.

Token Contract Details for 26.07.2021

Contract Name: **Royal BNB Token**

Deployer address: **0x9F0F7aCC4C49bfb8D5D65df0FC822fBC920b71DE**

Total Supply: **11,500,000,000,000**

Token Tracker: **RB**

Decimals: **18**

Token holders: **1**

Transactions count: **1**

Top 100 holders dominance: **100%**

Contract deployer address:
0x9F0F7aCC4C49bfb8D5D65df0FC822fBC920b71DE

Audit Details

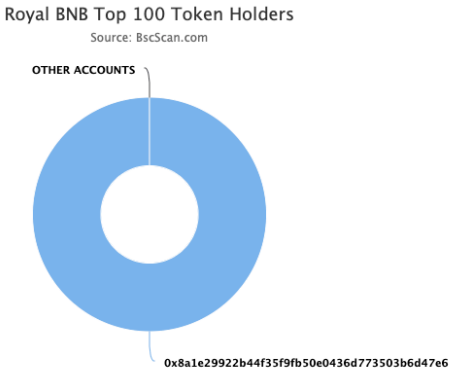
Project Name: **Royal BNB**

Language: **Solidity**

Blockchain: **Binance Smart Chain**

Project Website: **royalbnb.net**

Royal BNB Token Distribution



Royal BNB Top 10 Holders

Rank	Address	Quantity (Token)	Percentage
1	0x8a1e29922b44f35f9fb50e0436d773503b6d47e6	11,500,000,000,000	100.0000%

Vulnerabilities checking Status

Issue Description	Checking Status
Compiler Errors	Completed
Delays in Data Delivery	Completed
Re-entrancy	Completed
Transaction-Ordering Dependence	Completed
Timestamp Dependence	Completed
Shadowing State Variables	Completed
DoS with Failed Call	Completed
DoS with Block Gas Limit	Completed
Outdated Complier Version	Low-issues
Assert Violation	Completed
Use of Deprecated Solidity Functions	Completed
Integer Overflow and Underflow	Completed
Function Default Visibility	Completed
Malicious Event Log	Completed
Math Accuracy	Completed
Design Logic	Completed
Fallback Function Security	Completed
Cross-function Race Conditions	Completed
Safe Zeppelin Module	Completed

Security Issues

1) **Outdated complier version issue:**
The ABI specification uses pointers to data areas for everything that is dynamically-sized. Fixed in Solidity ^0.8.4.

2) **EmptyByteArrayCopy:**
The routine that copies byte arrays from memory or calldata to storage stores unrelated data from after the source array in the storage slot if the source array is empty. If the storage array's length is subsequently increased either by using ``.push()`` or by assigning to its ``.length`` attribute (only before 0.6.0), the newly created byte array elements will not be zero-initialized, but contain the unrelated data.

3) **DynamicArrayCleanup:**
Consider a dynamically-sized array in storage whose base-type is small enough such that multiple values can be packed into a single slot, such as `uint128[]`. Let us define its length to be `l`. When this array gets assigned from another array with a smaller length, say `m`, the slots between elements `m` and `l` have to be cleaned by zeroing them out. However, this cleaning was not performed properly.

Conclusion

Low-severity issues exist within smart contracts. Smart contracts are free from any critical or high-severity issues.

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