



CFG NINJA AUDITS

Security Assessment

Rick and Morty Token

May 24, 2023

Audit Status: Pass

Audit Edition: Advance



POWERED BY
BLADE POOL

Project Overview

Risk Analysis Summary

The project owners of Rick and Morty with the following contract 0xd6F4dDCAd06B2E11968aDE49372E66f2CBCF9830 have the following items.

Parameter	Result
Buy Tax	4
Sale Tax	8
Cannot Buy	Pass
Cannot Sale	Pass
Max Tax	8
Fee Check	Pass
Modify Fees	Not Detected
Is honeypot?	Liquidity has not been added
Trading Cooldown	Not Detected
Transfer Pausable	Not Detected
Can Pause Trade?	Pass
Is anti whale?	Not Detected
Is anti bot?	Not Detected



Parameter	Result
Max Tx?	Pass
Is blacklisted?	Not Detected
Blacklist Check	Pass
Is whitelisted?	Not Detected
Minting	Pass
Proxy?	Not Detected
Can Take Ownership?	Not Detected
Hidden Owner?	Not Detected
SelfDestruct?	Not Detected
External Call?	Not Detected
Other?	Not Detected
Holders	1
Confidence Level	Medium

The following quick summary it's added to the project overview; however, there are more details about the audit and its results. Please read every detail.



Table of Contents

1 Assessment Summary

2 Project Overview

2.1 Token Summary

2.2 Risk Analysis Summary

2.3 Main Contract Assessed

3 Smart Contract Risk Checks

3.1 Mint Check

3.2 Fees Check

3.3 Blacklist Check

3.4 MaxTx Check

3.5 Pause Trade Check

3.6 Contract Ownership

3.7 Liquidity Ownership

3.8 KYC Check

4 Smart Contract Vulnerability Checks

4.1 Smart Contract Vulnerability Details

4.2 Smart Contract Inheritance Details

4.3 Smart Contract Privileged Functions

5 Technical Findings Details

6 Social Media Check(Informational)

7 Assessment Results and Notes(Important)

7.1 Score Results

8 Disclaimer



Assessment Summary

This report has been prepared for Rick and Morty Token on the Binance Smart Chain network. CFGNINJA provides both client-centered and user-centered examination of the smart contracts and their current status when applicable. This report represents the security assessment made to find issues and vulnerabilities on the source code along with the current liquidity and token holder statistics of the protocol.

A comprehensive examination has been performed, utilizing Cross Referencing, Static Analysis, In-House Security Tools, and line-by-line Manual Review.

The auditing process pays special attention to the following considerations:

- Testing the smart contracts against both common and uncommon attack vectors.
- Inspecting liquidity and holders statistics to inform the current status to both users and client when applicable.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Verifying contract functions that allow trusted and/or untrusted actors to mint, lock, pause, and transfer assets.
- 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.



Project Overview

Token Summary

Parameter	Result
Address	0xd6F4dDCAd06B2E11968aDE49372E66f2CBCF9830
Name	Rick and Morty
Token Tracker	Rick and Morty (RNM)
Decimals	18
Supply	1,000,000,000
Platform	Binance Smart Chain
compiler	v0.8.19+commit.7dd6d404
Contract Name	RNM
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://bscscan.com/address/0xd6F4dDCAd06B2E11968aDE49372E66f2CBCF9830#code
Payment Tx	0x



Project Overview

Simulation Summary

Parameter	Result
Transfer From Owner	Pass
Transfer From Holder	Pass
Add Liquidity	Pass
RemoveLiquidity	Pass
Buy from Owner	Pass
Buy from Holder	Pass
Sale from Owner	Pass
Sale from Holder	Pass
Remove Liquidity	Pass
SwapAndLiquify	Pass
SwapAndSale w/Fee	Pass
SwapAndSale TX	
SwapAndSaleNoFee	Pass
SwapAndSale No/Fee TX	
ExcludeFromFees	Pass
LaunchPad	PinkSale



Parameter	Result
Pool Creation	Pass
Pool Creation TX	
Pool Finalize	Pass
Pool Finalize TX	
Enable	Pass

The following quick summary it's added to the project overview; however, there are more details about the audit and its results. Please read every detail.



MainNet Contract was Not Assessed

TestNet Contract Assessed Contract Name

Name	Contract	Live
Rick and Morty	0xc9205f3bC72fDAE345144952AD5D551230FE102f	Yes

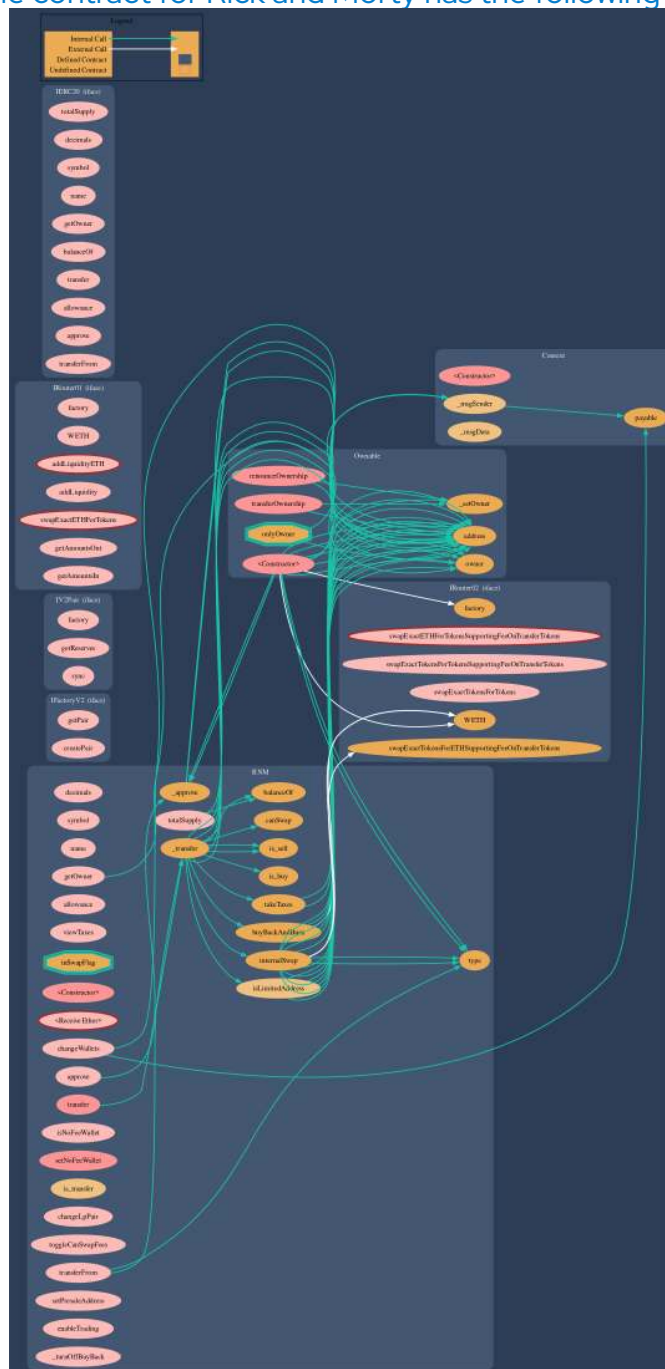
Solidity Code Provided

SolID	File Sha-1	FileName
RNM	bfca5418a856443ccff08f7e9be5b5a626aab124	rnm.sol
RNM		
RNM		
RNM		



Call Graph

The contract for Rick and Morty has the following call graph structure.



KYC Information

The Project Owners of Rick and Morty is not KYC.

KYC Information Notes:

Auditor Notes: KYC to be completed by PinkSale, project will be a SAFU Project.

Project Owner Notes:



Smart Contract Vulnerability Checks

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) while overlaying a wide range of weakness variants that are specific to smart contracts.

ID	Severity	Name	File	location
SWC-100	Pass	Function Default Visibility	rnm.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	rnm.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	rnm.sol	L: 0 C: 0
SWC-103	Pass	A floating pragma is set.	rnm.sol	L: 0 C: 0
SWC-104	Pass	Unchecked Call Return Value.	rnm.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	rnm.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	rnm.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	rnm.sol	L: 0 C: 0
SWC-108	Pass	State variable visibility is not set..	rnm.sol	L: 0 C: 0
SWC-109	Pass	Uninitialized Storage Pointer.	rnm.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	rnm.sol	L: 0 C: 0



ID	Severity	Name	File	location
SWC-111	Pass	Use of Deprecated Solidity Functions.	rnm.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	rnm.sol	L: 0 C: 0
SWC-113	Pass	Multiple calls are executed in the same transaction.	rnm.sol	L: 0 C: 0
SWC-114	Pass	Transaction Order Dependence.	rnm.sol	L: 0 C: 0
SWC-115	Low	Authorization through tx.origin.	rnm.sol	L: 0 C: 0
SWC-116	Pass	A control flow decision is made based on The block.timestamp environment variable.	rnm.sol	L: 0 C: 0
SWC-117	Pass	Signature Malleability.	rnm.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	rnm.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	rnm.sol	L: 0 C: 0
SWC-120	Pass	Potential use of block.number as source of randomness.	rnm.sol	L: 0 C: 0
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	rnm.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	rnm.sol	L: 0 C: 0
SWC-123	Pass	Requirement Violation.	rnm.sol	L: 0 C: 0
SWC-124	Pass	Write to Arbitrary Storage Location.	rnm.sol	L: 0 C: 0
SWC-125	Pass	Incorrect Inheritance Order.	rnm.sol	L: 0 C: 0



ID	Severity	Name	File	location
SWC-126	Pass	Insufficient Gas Griefing.	rnm.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	rnm.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	rnm.sol	L: 0 C: 0
SWC-129	Pass	Typographical Error.	rnm.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U+202E).	rnm.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	rnm.sol	L: 0 C: 0
SWC-132	Pass	Unexpected Ether balance.	rnm.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	rnm.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	rnm.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	rnm.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	rnm.sol	L: 0 C: 0

We scan the contract for additional security issues using MYTHX and industry-standard security scanning tools.



Smart Contract Vulnerability Details

SWC-115 - Authorization through tx.origin

CWE-477: Use of Obsolete Function

Description:

tx.origin is a global variable in Solidity which returns the address of the account that sent the transaction. Using the variable for authorization could make a contract vulnerable if an authorized account calls into a malicious contract. A call could be made to the vulnerable contract that passes the authorization check since tx.origin returns the original sender of the transaction which in this case is the authorized account.

Remediation:

tx.origin should not be used for authorization. Use msg.sender instead.

References:

Solidity Documentation - tx.origin

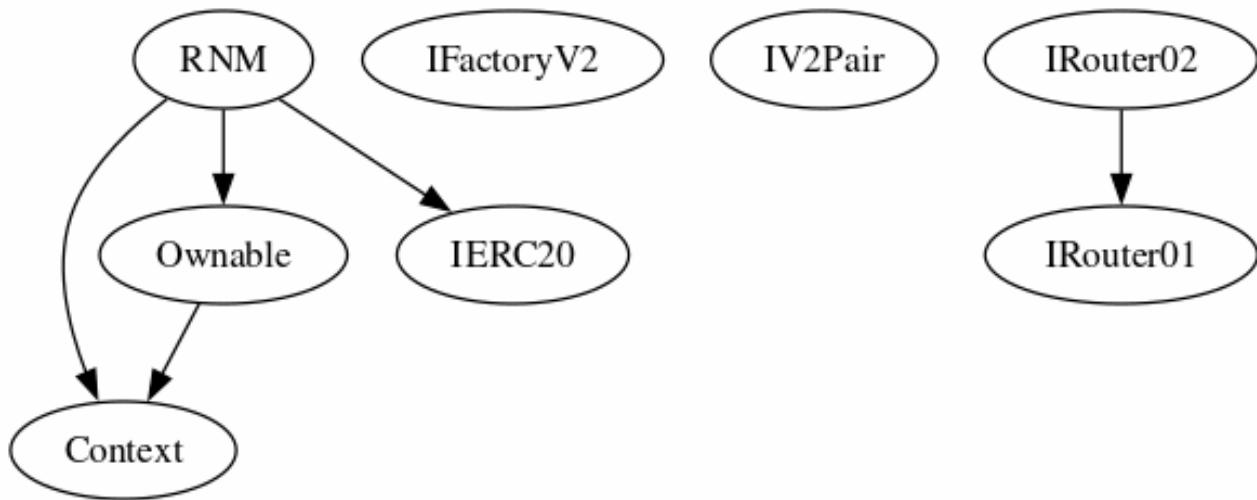
Ethereum Smart Contract Best Practices - Avoid using tx.origin

SigmaPrime - Visibility.



Inheritance

The contract for Rick and Morty has the following inheritance structure.



Smart Contract Advance Checks

ID	Severity	Name	Result	Status
RNM-01	Minor	Potential Sandwich Attacks.	Pass	Not-Found
RNM-02	Minor	Function Visibility Optimization	Pass	Not-Found
RNM-03	Minor	Lack of Input Validation.	Pass	Not-Found
RNM-04	Major	Centralized Risk In addLiquidity.	Pass	Not-Found
RNM-05	Minor	Missing Event Emission.	Pass	Not-Found
RNM-06	Minor	Conformance with Solidity Naming Conventions.	Pass	Not-Found
RNM-07	Minor	State Variables could be Declared Constant.	Pass	Not-Found
RNM-08	Minor	Dead Code Elimination.	Pass	Not-Found
RNM-09	Major	Third Party Dependencies.	Pass	Not-Found
RNM-10	Major	Initial Token Distribution.	Pass	Not-Found
RNM-11	Major	Complexity on the tax calculations.	Pass	Not-Found
RNM-12	Major	Centralization Risks In The X Role	Pass	Not-Found
RNM-13	Informational	Extra Gas Cost For User..	Pass	Not-Found
RNM-14	Medium	Unnecessary Use Of SafeMath	Pass	Not-Found
RNM-15	Medium	Symbol Length Limitation due to Solidity Naming Standards.	Pass	Not-Found








ID	Severity	Name	Result	Status
RNM-16	Medium	Invalid collection of Taxes during Transfer.	Pass	Not-Found
RNM-17	Informational	Conformance to numeric notation best practice.	Pass	Not-Found
RNM-18	Informational	Enable Trade and Exclude Exist to create a whitelist.	Pass	Not-found








Technical Findings Summary

Classification of Risk

Severity	Description
 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.
 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.
 Medium	Risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform
 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.
 Informational	Errors are often recommended to improve the code's style or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code.

Findings

Severity	Found	Pending	Resolved
 Critical	0	0	0
 Major	0	0	0
 Medium	0	0	0
 Minor	0	0	0
 Informational	0	0	0
Total	0	0	0



Social Media Checks

Social Media	URL	Result
Twitter	https://twitter.com/ricknmortybsc	Pass
Other	https://whitepaper-1-0.gitbook.io/rick-and-morty	Pass
Website	http://rickandmorty.finance	Pass
Telegram	https://t.me/ricknmortybsc	Pass

We recommend to have 3 or more social media sources including a completed working websites.

Social Media Information Notes:

Auditor Notes: undefined

Project Owner Notes:



Assessment Results

Score Results

Review	Score
Overall Score	100/100
Auditor Score	95/100
Review by Section	Score
Manual Scan Score	47/53
SWC Scan Score	36 /37
Advance Check Score	20 /19

The Following Score System Has been Added to this page to help understand the value of the audit, the maximum score is 100, however to attain that value the project must pass and provide all the data needed for the assessment. Our Passing Score has been changed to 80 Points, if a project does not attain 80% is an automatic failure. Read our notes and final assessment below.

Audit Passed



Assessment Results

Important Notes:

- No Issues or Vulnerabilities were found.
- The contract is developed by Freddy.
- Buyback and Burn functions tested.

Auditor Score =95
Audit Passed



Appendix

Finding Categories

Centralization / Privilege

Centralization / Privilege findings refer to either feature logic or implementation of components that act against the nature of decentralization, such as explicit ownership or specialized access roles in combination with a mechanism to relocate funds.

Gas Optimization

Gas Optimization findings do not affect the functionality of the code but generate different, more optimal EVM opcodes resulting in a reduction on the total gas cost of a transaction.

Logical Issue

Logical Issue findings detail a fault in the logic of the linked code, such as an incorrect notion on how block.timestamp works.

Control Flow

Control Flow findings concern the access control imposed on functions, such as owner-only functions being invoke-able by anyone under certain circumstances.

Volatile Code

Volatile Code findings refer to segments of code that behave unexpectedly on certain edge cases that may result in a vulnerability.

Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to make the codebase more legible and, as a result, easily maintainable.

Inconsistency

Inconsistency findings refer to functions that should seemingly behave similarly yet contain different code, such as a constructor assignment imposing different requirements on the input variables than a setter function.

Coding Best Practices

ERC 20 Coding Standards are a set of rules that each developer should follow to ensure the code meets a set of criteria and is readable by all the developers.



Disclaimer

CFGNINJA has conducted an independent security assessment to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the reviewed code for the scope of this assessment. This report does not constitute agreement, acceptance, or advocacy for the Project, and users relying on this report should not consider this as having any merit for financial advice in any shape, form, or nature. The contracts audited do not account for any economic developments that the Project in question may pursue, and the veracity of the findings thus presented in this report relate solely to the proficiency, competence, aptitude, and discretion of our independent auditors, who make no guarantees nor assurance that the contracts are entirely free of exploits, bugs, vulnerabilities or deprecation of technologies.

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