CFG NINJA AUDITS

Security Assessment

Bunny AI Token

March 26, 2023

Audit Status: Pass

Audit Edition: Advance

POWERED BY BLADE POOL

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Assessment Summary

This report has been prepared for Bunny AI Token on the Ethereum 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	0xE9E6c22ABBd1Aa149EAD885A1B25d127D28c0803
Name	Bunny AI
Token Tracker	Bunny AI (BUNAI)
Decimals	18
Supply	23,000,000
Platform	Ethereum
compiler	v0.8.17+commit.8df45f5f
Contract Name	BunnyAI
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://etherscan.io/token/0xE9E6c22ABBd1Aa149EAD885A1B25d127D28c0803#code
Payment Tx	0x7c01448176f2e9c940183803a4b648038cc99df24f0b796575b3ddf549ebe89f

Project Overview

Risk Analysis Summary

Parameter	Result
Buy Tax	8%
Sale Tax	8%
Is honeypot?	Clean
Can edit tax?	Yes
Is anti whale?	Yes
Is blacklisted?	Yes
Is whitelisted?	YNo
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.

Project Overview

Simulation Summary

Parameter	Result
Transfer From Owner	Pass
Transfer From Holder	Pass
Add Liquidity	Pass
Buy from Owner	Pass
Buy from Holder	Pass
Remove Liquidity	Pass
SwapAndLiquify	Pass
RemoveLiquidity	Pass
LaunchPad	PinkSale

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.

Main Contract Assessed
Contract Name

Name	Contract	Live
Bunny AI	0xE9E6c22ABBd1Aa149EAD885A1B25d127D28c0803	Yes

TestNet Contract Assessed
Contract Name

Name	Contract	Live
Bunny AI	0x15D71ec0958a17b9Bcc26DD6bE0dC57A14BD7204	Yes

Solidity Code Provided

SolID	File Sha-1	FileName
bunnyv3	d91354743076b8694b73521c7362a0f9f6acda6f	bunnyaiv3.sol
bunnyv3		
bunnyv3		

Mint Check

The project owners of Bunny AI do not have a mint function in the contract, owner cannot mint tokens after initial deploy.

The Project has a Total Supply of 23,000,000 and cannot mint any more than the Max Supply.

Mint Notes:

Auditor Notes:

Project Owner Notes:

Owner can't mint new coins

Fees Check

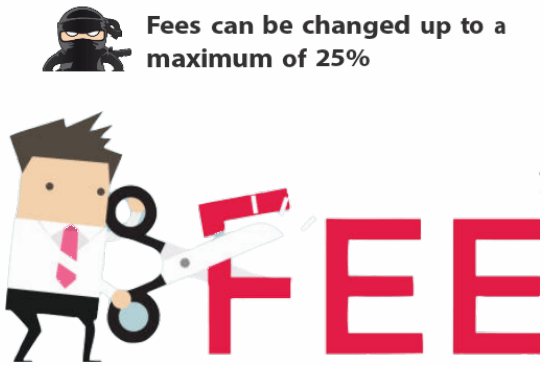
The project owners of Bunny AI do not have the ability to set fees higher than 25% .

The team May have fees defined; however, they can't set those fees higher than 25% or may not be able to configure the same.

Tax Fee Notes:

Auditor Notes: The contract currently has 8% buy and 10% sale taxes, and cannot be set higher than 12%.

Project Owner Notes:



Blacklist Check

The project owners of Bunny AI have the ability to Blacklist holders from transferring their tokens.

We recommend the Team be careful with a blacklist function as this can prevent a holder from buying/ selling/transferring their assets. Malicious or compromised owners can trap contracts relying on tokens with a blacklist

Blacklist Notes:

Auditor Notes: Blacklist Present

Project Owner Notes:

MaxTx Check

The Project Owners of Bunny AI can set max tx amount.

The ability to set MaxTx can be used as bad actor, this can limit the ability of investors to sale their tokens at any given time if is set too low..

We recommend the project to set MaxTx to Total Supply or simiar to avoid swap or transfer from failures

MaxTX Notes:

Auditor Notes: uint256 public maxBuyLimit = 230_000 * 10**18;uint256 public maxSellLimit = 230_000 * 10**18; uint256 public maxWalletLimit = 230_000 * 10**18;

Project Owner Notes: Max TX is done to avoid bots. Customer Reply to issue.

Pause Trade Check

The Project Owners of Bunny AI don't have the ability to stop or pause trading.

The Team has done a great job to avoid stop trading, and investors has the ability to trade at any given time without any problems

Pause Trade Notes:

Auditor Notes: Only Open Trade

Project Owner Notes: Just in case we need to migrate, however may renounce contraact.

Owner can't pause trading

Contract Ownership

The contract ownership of Bunny AI is not currently renounced. The ownership of the contract grants special powers to the protocol creators, making them the sole addresses that can call sensible ownable functions that may alter the state of the protocol.

The current owner is the address 0x928638Fa29dd6aa200a0e90Fc5F2Ba7A03Fad532 which can be viewed:
HERE

The owner wallet has the power to call the functions displayed on the privileged functions chart below, if the owner's wallet is compromised, they could exploit these privileges.

We recommend the team renounce ownership at the right time, if possible, or gradually migrate to a timelock with governing functionalities regarding transparency and safety considerations.

We recommend the team use a Multisignature Wallet if the contract is not going to be renounced; this will give the team more control over the contract.

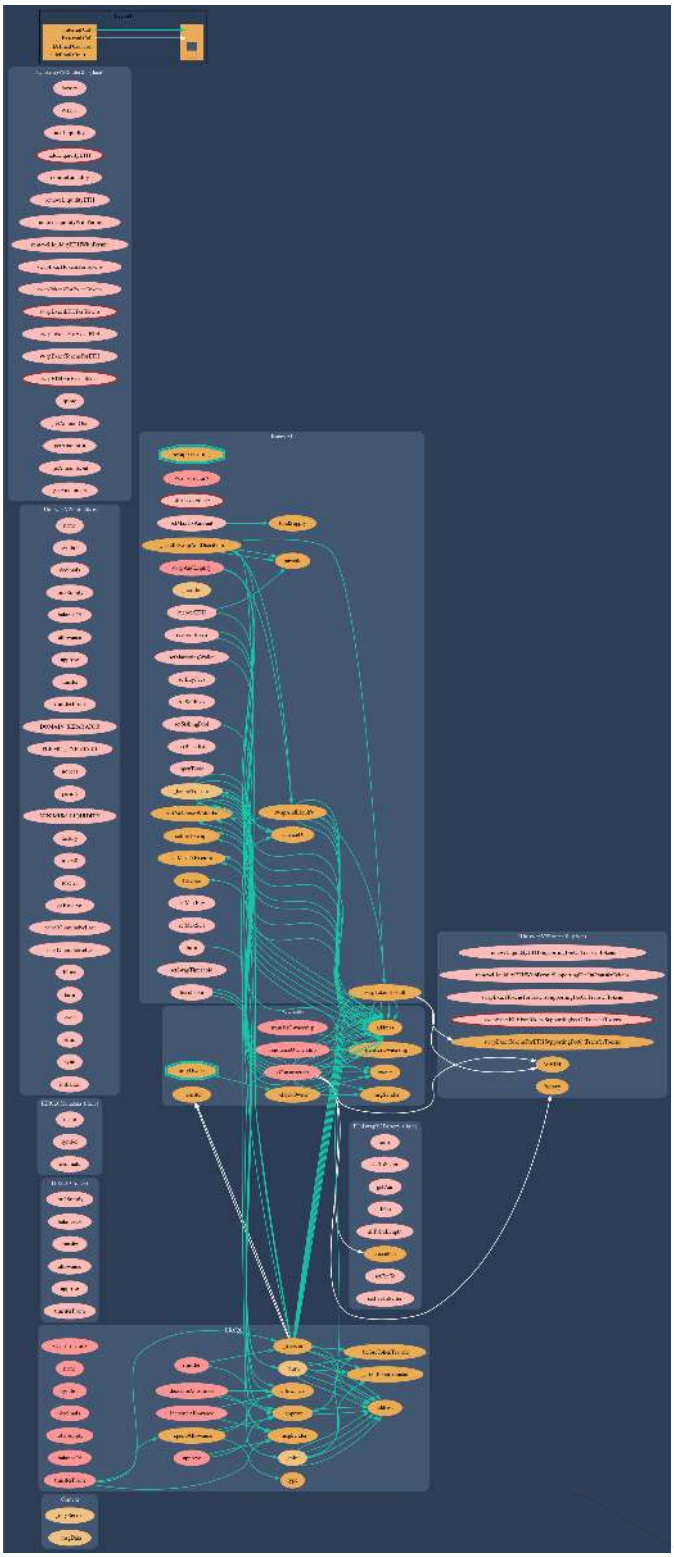
Liquidity Ownership

Most of the liquidity is currently locked; the lock can be seen here:

Liquidity Locker Link can be viewed from:
HERE

Call Graph

The contract for Bunny AI has the following call graph structure.



KYC Information

The Project Owners of Bunny AI have provided KYC Documentation.

KYC Certificated can be found on the Following:
KYC Data

KYC Information Notes:

Auditor Notes: KYC Completed

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	bunnyaiv3.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	bunnyaiv3.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	bunnyaiv3.sol	L: 0 C: 0
SWC-103	Low	A floating pragma is set.	bunnyaiv3.sol	L: 7 C: 0
SWC-104	Pass	Unchecked Call Return Value.	bunnyaiv3.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	bunnyaiv3.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	bunnyaiv3.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	bunnyaiv3.sol	L: 0 C: 0
SWC-108	Pass	State variable visibility is not set..	bunnyaiv3.sol	L: 405 C: 9
SWC-109	Pass	Uninitialized Storage Pointer.	bunnyaiv3.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	bunnyaiv3.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-111	Pass	Use of Deprecated Solidity Functions.	bunnyaiv3.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	bunnyaiv3.sol	L: 0 C: 0
SWC-113	Pass	Multiple calls are executed in the same transaction.	bunnyaiv3.sol	L: 0 C: 0
SWC-114	Pass	Transaction Order Dependence.	bunnyaiv3.sol	L: 0 C: 0
SWC-115	Pass	Authorization through tx.origin.	bunnyaiv3.sol	L: 0 C: 0
SWC-116	Pass	A control flow decision is made based on The block.timestamp environment variable.	bunnyaiv3.sol	L: 0 C: 0
SWC-117	Pass	Signature Malleability.	bunnyaiv3.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	bunnyaiv3.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	bunnyaiv3.sol	L: 0 C: 0
SWC-120	Low	Potential use of block.number as source of randonmness.	bunnyaiv3.sol	L: 1136 C: 36
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	bunnyaiv3.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	bunnyaiv3.sol	L: 0 C: 0
SWC-123	Pass	Requirement Violation.	bunnyaiv3.sol	L: 0 C: 0
SWC-124	Pass	Write to Arbitrary Storage Location.	bunnyaiv3.sol	L: 0 C: 0
SWC-125	Pass	Incorrect Inheritance Order.	bunnyaiv3.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-126	Pass	Insufficient Gas Griefing.	bunnyaiv3.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	bunnyaiv3.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	bunnyaiv3.sol	L: 0 C: 0
SWC-129	Pass	Typographical Error.	bunnyaiv3.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U +202E).	bunnyaiv3.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	bunnyaiv3.sol	L: 0 C: 0
SWC-132	Pass	Unexpected Ether balance.	bunnyaiv3.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	bunnyaiv3.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	bunnyaiv3.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	bunnyaiv3.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	bunnyaiv3.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-103 - Floating Pragma.

CWE-664: Improper Control of a Resource Through its Lifetime.

References:

Description:

Contracts should be deployed with the same compiler version and flags that they have been tested with thoroughly. Locking the pragma helps to ensure that contracts do not accidentally get deployed using, for example, an outdated compiler version that might introduce bugs that affect the contract system negatively.

Remediation:

Lock the pragma version and also consider known bugs (https://github.com/ethereum/solidity/releases) for the compiler version that is chosen.

Pragma statements can be allowed to float when a contract is intended for consumption by other developers, as in the case with contracts in a library or EthPM package. Otherwise, the developer would need to manually update the pragma in order to compile locally.

References:

Ethereum Smart Contract Best Practices - Lock pragmas to specific compiler version.

Smart Contract Vulnerability Details

SWC-120 - Weak Sources of Randomness from Chain Attributes

CWE-330: Use of Insufficiently Random Values

Description:

Solidity allows for ambiguous naming of state variables when inheritance is used. Contract A with a variable x could inherit contract B that also has a state variable x defined. This would result in two separate versions of x, one of them being accessed from contract A and the other one from contract B. In more complex contract systems this condition could go unnoticed and subsequently lead to security issues.

Shadowing state variables can also occur within a single contract when there are multiple definitions on the contract and function level.

Remediation:

Using commitment scheme, e.g. RANDAO. Using external sources of randomness via oracles, e.g. Oraclize. Note that this approach requires trusting in oracle, thus it may be reasonable to use multiple oracles. Using Bitcoin block hashes, as they are more expensive to mine.

References:

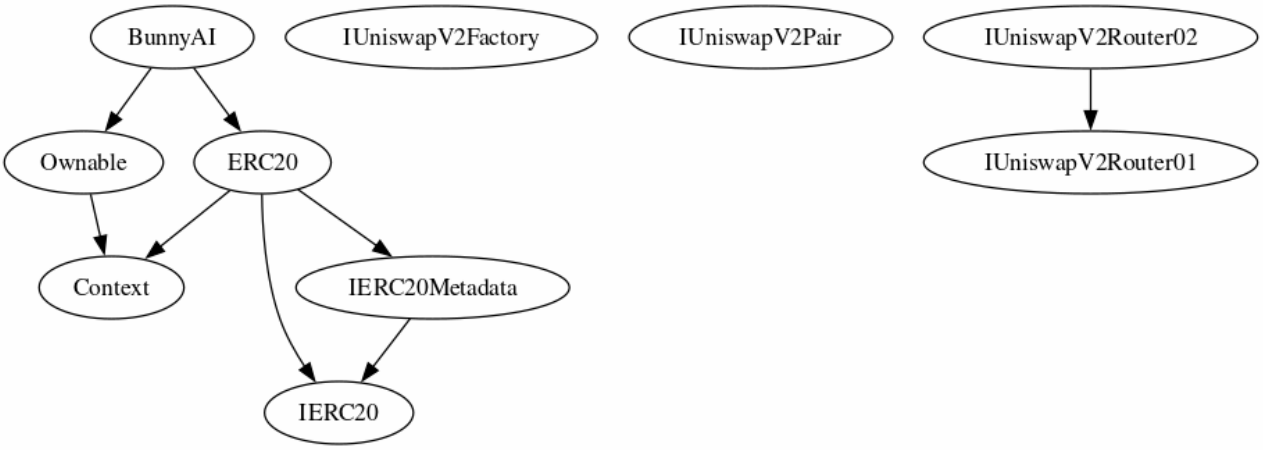
How can I securely generate a random number in my smart contract?)

When can BLOCKHASH be safely used for a random number? When would it be unsafe?

The Run smart contract.

Inheritance

The contract for Bunny AI has the following inheritance structure.



Privileged Functions (onlyOwner)

Please Note if the contract is Renounced none of this functions can be executed.

Function Name	Parameters	Visibility
renounceOwnership		public
transferOwnership	newOwner (address)	public
setCooldownWhitelist	address _address,bool _whitelist	external
setSwapThreshold	uint256 _amount	external
setMaxTxAmount	uint256 _amount	external
setMaxSell	uint256 _amount	external
setMaxBuy	uint256 _amount	external
setMaxTxExempt	address _address, bool exempt	external
setStakingPool	address _stakingPool	external
setMarketingWallet	address _stakingPool	external
recoverETH		external

Function Name	Parameters	Visibility
recoverToken	address _token	external
openTrade		external
setBlacklist	address _address,bool _blacklist	external
setFeeExempt	address _address, bool exempt	external
setBuyFees	uint8 _marketing, uint8 _pool, uint8 _liq	external
setSellFees	uint8 _marketing, uint8 _pool, uint8 _liq	external
updateLiquidityTreshhold	uint256 new_amount	external
updateLiquidityProvide	bool state	external

Smart Contract Advance Checks

ID	Severity	Name	Result	Status
BUNAI-01	Minor	Potential Sandwich Attacks.	Pass	Resolved
BUNAI-02	Minor	Function Visibility Optimization	Fail	Pending
BUNAI-03	Minor	Lack of Input Validation.	Fail	Pending
BUNAI-04	Major	Centralized Risk In addLiquidity.	Pass	Not-Found
BUNAI-05	Major	Missing Event Emission.	Fail	Pending
BUNAI-06	Minor	Conformance with Solidity Naming Conventions.	Pass	Not-Found
BUNAI-07	Minor	State Variables could be Declared Constant.	Pass	Not-Found
BUNAI-08	Major	Dead Code Elimination.	Pass	Not-Found
BUNAI-09	Major	Third Party Dependencies.	Pass	Not Found
BUNAI-10	Major	Initial Token Distribution.	Fail	Pending
BUNAI-11	Critical	distributeTokensBetween Holders is a multisender of tokens from contract.	Pass	Not-Found
BUNAI-12	Major	Centralization Risks In The X Role	Pass	Not Found
BUNAI-13	Informational	Extra Gas Cost For User..	Fail	Pending
BUNAI-14	Medium	Unnecessary Use Of SafeMath	Pass	Not-Found

ID	Severity	Name	Result	Status
BUNAI-15	Medium	Symbol Length Limitation due to Solidity Naming Standards.	Pass	Not-Found
BUNAI-16	Medium	Invalid collection of Taxes during Transfer.	Pass	Not-Found

BUNAI-02 | Function Visibility Optimization.

Category	Severity	Location	Status
Gas Optimization	Minor	bunnyaiv3.sol: q408, 14	Pending

Description

The following functions are declared as public and are not invoked in any of the contracts contained within the projects scope:

Function Name	Parameters	Visibility
setMaxTxExempt		public
setFeeExempt		public
setCooldownWhitelis		public

The functions that are never called internally within the contract should have external visibility

Remediation

We advise that the function's visibility specifiers are set to external, and the array-based arguments change their data location from memory to calldata, optimizing the gas cost of the function.

References:

external vs public best practices.

BUNAI-03 | Lack of Input Validation.

Category	Severity	Location	Status
Volatile Code	Minor	bunnyaiv3.sol: 659,14	Pending

Description

The given input is missing the check for the non-zero address.

The given input is missing the check for the setFeeExempt,setBlacklist,openTrade, setMaxTxExempt, setCooldownWhitelist is missing required function.

Remediation

We advise the client to add the check for the passed-in values to prevent unexpected errors as below:

```
...
 require(receiver != address(0), "Receiver is the zero address");
...
...
require(value X limitation, "Your not able to do this function");
...
```

We also recommend customer to review the following function that is missing a required validation. setFeeExempt,setBlacklist,openTrade, setMaxTxExempt, setCooldownWhitelist is missing required function.

BUNAI-05 | Missing Event Emission.

Category	Severity	Location	Status
Volatile Code	Major	bunnyaiv3.sol: 659, 14	Pending

Description

Detected missing events for critical arithmetic parameters. There are functions that have no event emitted, so it is difficult to track off-chain changes.The linked code does not create an event for the transfer.

Remediation

Emit an event for critical parameter changes. It is recommended emitting events for the sensitive functions that are controlled by centralization roles.

BUNAI-10 | Initial Token Distribution.

Category	Severity	Location	Status
Centralization / Privilege	Major	bunnyaiv3.sol: 53,6	Pending

Description

All of the Bunny AI tokens are sent to the contract deployer when deploying the contract. This could be a centralization risk as the deployer can distribute tokens without obtaining the consensus of the community.

Remediation

We recommend the team to be transparent regarding the initial token distribution process, and the team shall make enough efforts to restrict the access of the private key.

Project Action

Token Distribution goes to the msg.sender;

BUNAI-13 | Extra Gas Cost For User.

Category	Severity	Location	Status
Logical Issue	Informational	bunnyaiv3.sol: 236, 8	Pending

Description

The user may trigger a tax distribution during the transfer process, which will cost a lot of gas and it is unfair to let
a single user bear it.

Remediation

We advise the client to make the owner responsible for the gas costs of the tax distribution.

Project Action

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	2	0	0
Medium	0	0	0
Minor	1	0	0
Informational	2	0	0
Total	5	0	0

Social Media Checks

Social Media	URL	Result
Twitter	https://twitter.com/bunnyai_eth	Pass
Other	https://instagram.com/bunnyai_eth	Pass
Website	https://bunnyai.app	Pass
Telegram	https://t.me/bunny_ai	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	94/100
Auditor Score	90/100
Review by Section	**Score**
Manual Scan Score	47/51
SWC Scan Score	35 /37
Advance Check Score	12 /16

The Following Score System Has been Added to this page to help understand the value of the audit, the maximun score is 100, however to attain that value the project most 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 project continues to build utilities and ensure contract safety.

Auditor Score =90
Audit Passed

Appendix

Finding Categories

Centralization / Privilege

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

Gas Optimization

Gas Optimization findings do not affect the functionality of the code but generate different, more optimalEVM 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 howblock.timestamp works.

Control Flow

Control Flow findings concern the access control imposed on functions, such as owner-only functionsbeing 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 mayresult in a vulnerability.

Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to makethe 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 require statements on the input variables than a setterfunction.

Coding Best Practices

ERC 20 Conding Standards are a set of rules that each developer should follow to ensure the code meet a set of creterias 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 advocation 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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