



CFG NINJA AUDITS

Security Assessment

GuaGua Token

June 30, 2023

Audit Status: Fail

Audit Edition: Advanced













POWERED BY
BLADE POOL

Risk Analysis


















Classifications of Manual Risk Results

Classification	Description
 Critical	Danger or Potential Problems.
 High	Be Careful or Fail test.
 Low	Pass, Not-Detected or Safe Item.
 Informational	Function Detected

Manual Code Review Risk Results

Contract Privilege	Description
 Buy Tax	6%
 Sale Tax	6%
 Cannot Sale	Pass
 Cannot Sale	Pass
 Max Tax	100%
 Modify Tax	Yes
 Fee Check	Pass
 Is HoneyPot?	Not Detected
 Trading Cooldown	Not Detected
 Can Pause Trade?	Pass



Contract Priviledge	Description
 Pause Transfer?	Not Detected.
 Max Tx?	Fail
 Is Anti Whale?	Detected
 Is Anti Bot?	Not Detected
 Is Blacklist?	Not Detected
 Blacklist Check	Pass
 is Whitelist?	Not Detected
 Can Mint?	Pass
 Is Proxy?	Not Detected
 Can Take Ownership?	Not Detected
 Hidden Owner?	Not Detected
 Owner	0xc4a3ae7404a74ad3a1dc7a89b8ea9ca4d2450b3a
 Self Destruct?	Not Detected
 External Call?	Not Detected
 Other?	Detected
 Holders	1
 Auditor Confidence	Low

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

Token Summary

Parameter	Result
Address	0x6e9c2AF005B37fBC0fa6fAeD950F8eeA730F6FBD
Name	GuaGua
Token Tracker	GuaGua (GuaGua)
Decimals	9
Supply	1,000,000,000,000
Platform	Binance Smart Chain
compiler	v0.8.4+commit.c7e474f2
Contract Name	FatToken
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://bscscan.com/address/0x6e9c2AF005B37fBC0fa6fAeD950F8eeA730F6FBD#code
Payment Tx	Corporate



Main Contract Assessed Contract Name

Name	Contract	Live
GuaGua	0x6e9c2AF005B37fBC0fa6fAeD950F8eeA730F6FBD	Yes

TestNet Contract was Not Assessed

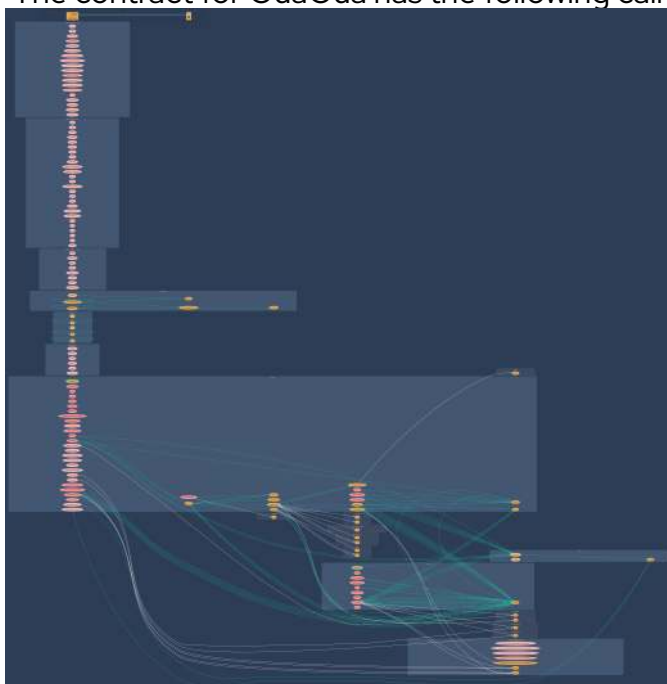
Solidity Code Provided

SolID	File Sha-1	FileName
GuaGua	21a63d1d3e62a48c4ef3a104da93887794d1c23a	GuaGua.sol
GuaGua		
GuaGua		
GuaGua		



Call Graph

The contract for GuaGua has the following call graph structure.



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	GuaGua.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	GuaGua.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	GuaGua.sol	L: 0 C: 0
SWC-103	Fail	A floating pragma is set.	GuaGua.sol	L: 14 C: 0
SWC-104	Pass	Unchecked Call Return Value.	GuaGua.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	GuaGua.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	GuaGua.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	GuaGua.sol	L: 0 C: 0
SWC-108	Low	State variable visibility is not set..	GuaGua.sol	L: 420 C: 33
SWC-109	Pass	Uninitialized Storage Pointer.	GuaGua.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	GuaGua.sol	L: 0 C: 0



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



ID	Severity	Name	File	location
SWC-126	Pass	Insufficient Gas Griefing.	GuaGua.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	GuaGua.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	GuaGua.sol	L: 0 C: 0
SWC-129	Pass	Typographical Error.	GuaGua.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U+202E).	GuaGua.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	GuaGua.sol	L: 0 C: 0
SWC-132	Pass	Unexpected Ether balance.	GuaGua.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	GuaGua.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	GuaGua.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	GuaGua.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	GuaGua.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-108 - State Variable Default Visibility

CWE-710: Improper Adherence to Coding Standards

Description:

Labeling the visibility explicitly makes it easier to catch incorrect assumptions about who can access the variable.

Remediation:

Variables can be specified as being public, internal or private. Explicitly define visibility for all state variables.

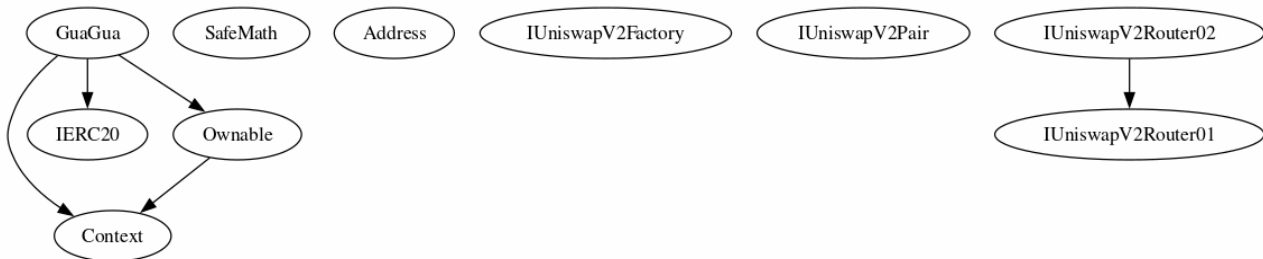
References:

Ethereum Smart Contract Best Practices - Explicitly mark visibility in functions and state variables



Inheritance

The contract for GuaGua has the following inheritance structure.



Smart Contract Advance Checks



ID	Severity	Name	Result	Status
GuaGua-01	Low	Potential Sandwich Attacks.	Fail	Detected
GuaGua-02	Low	Function Visibility Optimization	Fail	Detected
GuaGua-03	High	Lack of Input Validation.	Fail	Detected
GuaGua-04	High	Centralized Risk In addLiquidity.	Fail	Detected
GuaGua-05	Low	Missing Event Emission.	Fail	Detected
GuaGua-06	Low	Conformance with Solidity Naming Conventions.	Pass	Not Detected
GuaGua-07	Low	State Variables could be Declared Constant.	Pass	Not Detected
GuaGua-08	Low	Dead Code Elimination.	Pass	Not Detected
GuaGua-09	High	Third Party Dependencies.	Pass	Not Detected
GuaGua-10	High	Initial Token Distribution.	Pass	Not Detected
GuaGua-11	High		Pass	Not Detected
GuaGua-12	High	Centralization Risks In The X Role	Pass	Not Detected
GuaGua-13	Informational	Extra Gas Cost For User..	Pass	Not Detected
GuaGua-14	Medium	Unnecessary Use Of SafeMath	Fail	Detected
GuaGua-15	Medium	Symbol Length Limitation due to Solidity Naming Standards.	Pass	Not Detected
GuaGua-16	Medium	Taxes can be up to 100%	Fail	Detected



ID	Severity	Name	Result	Status
GuaGua-17	Informational	Highly Permissive Role Access.	Pass	Not Detected
GuaGua-18	Informational	Stop Transactions by using Enable Trade.	Pass	Not Detected



GuaGua-01 | Potential Sandwich Attacks.

Category	Severity	Location	Status
Security	 Low	GuaGua.sol: L: 1464 C: 30	 Detected

Description

A sandwich attack might happen when an attacker observes a transaction swapping tokens or adding liquidity without setting restrictions on slippage or minimum output amount. The attacker can manipulate the exchange rate by frontrunning (before the transaction being attacked) a transaction to purchase one of the assets and make profits by back running (after the transaction being attacked) a transaction to sell the asset. The following functions are called without setting restrictions on slippage or minimum output amount, so transactions triggering these functions are vulnerable to sandwich attacks, especially when the input amount is large:

- swapExactTokensForETHSupportingFeeOnTransferTokens()
- addLiquidityETH()

Remediation



We recommend setting reasonable minimum output amounts, instead of 0, based on token prices when calling the aforementioned functions.

References:

What Are Sandwich Attacks in DeFi – and How Can You Avoid Them?



GuaGua-02 | Function Visibility Optimization.

Category	Severity	Location	Status
Gas Optimization	 Low	GuaGua.sol: L: 125 C: 30	 Detected

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
changeRouterVersion		public
_balances		internal
inSwapAndLiquify		internal

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.



GuaGua-03 | Lack of Input Validation.

Category	Severity	Location	Status
Volatile Code	 High	GuaGua.sol: L: 680 C: 11	 Detected

Description

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

The given input is missing the check for the allOnlyOwners.

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. allOnlyOwners.



GuaGua-04 | Centralized Risk In addLiquidity.

Category	Severity	Location	Status
Coding Style	 High	GuaGua.sol: L: 776 C: 11	 Detected

Description

`uniswapV2Router.addLiquidityETH{value: ethAmount}(address(this), tokenAmount, 0, 0, owner(), block.timestamp);`

The `addLiquidity` function calls the `uniswapV2Router.addLiquidityETH` function with the `to` address specified as `owner()` for acquiring the generated LP tokens from the GuaGua-WBNB pool.

As a result, over time the `_owner` address will accumulate a significant portion of LP tokens. If the `_owner` is an EOA (Externally Owned Account), mishandling of its private key can have devastating consequences to the project as a whole.

Remediation

We advise the `to` address of the `uniswapV2Router.addLiquidityETH` function call to be replaced by the contract itself, i.e. `address(this)`, and to restrict the management of the LP tokens within the scope of the contract's business logic. This will also protect the LP tokens from being stolen if the `_owner` account is compromised. In general, we strongly recommend centralized privileges or roles in the protocol to be improved via a decentralized mechanism or via smart-contract based accounts with enhanced security practices, f.e. Multisignature wallets.

1. Indicatively, here are some feasible solutions that would also mitigate the potential risk:

2. Time-lock with reasonable latency, i.e. 48 hours, for awareness on privileged operations;

3. Assignment of privileged roles to multi-signature wallets to prevent single point of failure due to the private key;



Introduction of a DAO / governance / voting module to increase transparency and user involvement

Project Action





GuaGua-05 | Missing Event Emission.

Category	Severity	Location	Status
Volatile Code	 Low	GuaGua.sol: L: 327, C: 14	 Detected

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.



GuaGua-14 | Unnecessary Use Of SafeMath

Category	Severity	Location	Status
Logical Issue	 Medium	GuaGua.sol: L: 40 C: 11	 Detected

Description

The SafeMath library is used unnecessarily. With Solidity compiler versions 0.8.0 or newer, arithmetic operations will automatically revert in case of integer overflow or underflow.

```
library SafeMath {  
    An implementation of SafeMath library is found.  
    using SafeMath for uint256;  
    SafeMath library is used for uint256 type in contract.
```



Remediation

We advise removing the usage of SafeMath library and using the built-in arithmetic operations provided by the Solidity programming language

Project Action



GuaGua-16 | Taxes can be up to 100%.

Category	Severity	Location	Status
Logical Issue	 Medium	GuaGua.sol: L: 581	 Detected

Description

The current definition of taxes can be set up to 100% for specific wallets, we suggest to modify the function not to be dynamic but to be a static resolution.

```
function setSniperFee(address[] memory account, uint8 _sellFee, uint8 _buyFee) public  
onlyOwner {  
    for (uint256 i = 0; i < account.length; i++) {  
        if (_sellFee > 0) {  
            sellSniperFee[account[i]] = _sellFee;  
        }  
        if (_buyFee > 0) {  
            buySniperFee[account[i]] = _buyFee;  
        }  
    }  
}
```

due to the logic written in here may results in a honeypot.

Remediation

We advise the team to review the following logic..

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.
 High	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
 Low	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	1	0	0
 High	1	0	0
 Medium	2	0	0
 Low	2	0	0
 Informational	1	0	0
Total	7	0	0



Social Media Checks

Social Media	URL	Result
Twitter	https://twitter.com/GuaGua568?s=09	Pass
Other		Fail
Website	https://guagua.pro/	Pass
Telegram	https://t.me/GuaGuaEN	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	62/100
Auditor Score	69/100
Review by Section	Score
Manual Scan Score	14/33
SWC Scan Score	33 /37
Advance Check Score	15 /30

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 Fail



Assessment Results

Important Notes:

- A few issues were identified, that need to be corrected.
- unfortunately, it does not pass the solidity standards.
- Please DYOR on the project.

Auditor Score =69
Audit Fail



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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