RUGDOG

SMART CONTRACT SECURITY AUDIT

Final report

Plan: Simple

Virtual Reality Games World

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✧ CONTENTS

◊ INTRODUCTION

A fungible token of ERC20 standard with antibot functionality.

Name	Virtual Reality Games World
Audit date	2022-08-14 - 2022-08-14
Language	Solidity
Network	Binance Smart Chain

◊ CONTRACTS CHECKED

Name	Address
AntiBotStandardToken	0x866b5d7d8bb3e3e1e1ffe62a966062278627d20b

◊ AUDIT PROCESS

The code was audited by the team according to the following order:

Automated analysis

- Scanning the project's smart contracts with several publicly available automated Solidity analysis tools
- Manual confirmation of all the issues found by the tools

Manual audit

- Thorough manual analysis of smart contracts for security vulnerabilities
- Smart contracts' logic check

✧ ATTACKS CHECKED

Title	Check result
Unencrypted Private Data On-Chain	✓ passed
Code With No Effects	✓ passed
Message call with hardcoded gas amount	✓ passed
Typographical Error	✓ passed
DoS With Block Gas Limit	✓ passed
Presence of unused variables	✓ passed
Incorrect Inheritance Order	✓ passed
Requirement Violation	✓ passed
Weak Sources of Randomness from Chain Attributes	✓ passed
Shadowing State Variables	✓ passed
Incorrect Constructor Name	✓ passed
Block values as a proxy for time	✓ passed
Authorization through tx.origin	✓ passed
DoS with Failed Call	✓ passed
Delegatecall to Untrusted Callee	✓ passed

Use of Deprecated Solidity Functions	✓ passed
Assert Violation	✓ passed
State Variable Default Visibility	✓ passed
Reentrancy	✓ passed
Unprotected SELFDESTRUCT Instruction	✓ passed
Unprotected Ether Withdrawal	✓ passed
Unchecked Call Return Value	✓ passed
Floating Pragma	✓ passed
Outdated Compiler Version	✓ passed
Integer Overflow and Underflow	✓ passed
Function Default Visibility	✓ passed

✧ OVERVIEW OF RELEVANCE LEVELS

High relevance Issues of high relevance may lead to losses of users' funds as well as changes of ownership of a contract or possible issues with the logic of the contract.
High-relevance issues require immediate attention and a response from the team.

Medium relevance	While issues of medium relevance don't pose as high a risk as the high-relevance ones do, they can be just as easily exploited by the team or a malicious user, causing a contract failure and damaging the project's reputation in the process. Usually, these issues can be fixed if the contract is redeployed. Medium-relevance issues require a response from the team.
Low relevance	Issues of low relevance don't pose high risks since they can't cause damage to the functionality of the contract. However, it's still recommended to consider fixing them.

ISSUES

High relevance issues

No high relevance issues found

Medium relevance issues

No medium relevance issues found

Low relevance issues

1. Antibot may block transfers (AntiBotStandardToken)

The contract calls an external contract for antibot protection. The antibot contract is deployed via proxy and it's coe can be changed. The antibot may potentially block transfers.

```
function _transfer(
    address sender,
    address recipient,
    uint256 amount
) internal virtual {
    ...
```

```
        if (enableAntiBot) {
            pinkAntiBot.onPreTransferCheck(sender, recipient, amount);
        }
        ...
    }
```

✧ CONCLUSION

Virtual Reality Games World AntiBotStandardToken contract was audited. 1 low relevance issue was found.

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✧ STATIC ANALYSIS

```
INFO:Detectors:
AntiBotStandardToken.allowance(address,address).owner (Virtual Reality Games
World.sol#590) shadows:
  - Ownable.owner() (Virtual Reality Games World.sol#150-152) (function)
AntiBotStandardToken._approve(address,address,uint256).owner (Virtual Reality Games
World.sol#795) shadows:
  - Ownable.owner() (Virtual Reality Games World.sol#150-152) (function)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#local-
variable-shadowing
INFO:Detectors:
AntiBotStandardToken.constructor(string,string,uint8,uint256,address,address,uint256)
.serviceFeeReceiver_ (Virtual Reality Games World.sol#491) lacks a zero-check on :
    - address(serviceFeeReceiver_).transfer(serviceFee_) (Virtual Reality Games
World.sol#510)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-
zero-address-validation
INFO:Detectors:
Reentrancy in AntiBotStandardToken._transfer(address,address,uint256) (Virtual
Reality Games World.sol#716-736):
  External calls:
  - pinkAntiBot.onPreTransferCheck(sender,recipient,amount) (Virtual Reality Games
World.sol#725)
  State variables written after the call(s):
  - _balances[sender] = _balances[sender].sub(amount,ERC20: transfer amount exceeds
balance) (Virtual Reality Games World.sol#730-733)
  - _balances[recipient] = _balances[recipient].add(amount) (Virtual Reality Games
World.sol#734)
Reentrancy in AntiBotStandardToken.constructor(string,string,uint8,uint256,address,ad
dress,uint256) (Virtual Reality Games World.sol#485-511):
  External calls:
  - pinkAntiBot.setTokenOwner(owner()) (Virtual Reality Games World.sol#500)
  State variables written after the call(s):
  - enableAntiBot = true (Virtual Reality Games World.sol#501)
```

```
Reentrancy in AntiBotStandardToken.transferFrom(address,address,uint256) (Virtual
Reality Games World.sol#630-645):
  External calls:
  - _transfer(sender,recipient,amount) (Virtual Reality Games World.sol#635)
    - pinkAntiBot.onPreTransferCheck(sender,recipient,amount) (Virtual Reality Games
World.sol#725)
  State variables written after the call(s):
  - _approve(sender,_msgSender(),_allowances[sender][_msgSender()].sub(amount,ERC20:
transfer amount exceeds allowance)) (Virtual Reality Games World.sol#636-643)
    - _allowances[owner][spender] = amount (Virtual Reality Games World.sol#802)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities-2
INFO:Detectors:
Reentrancy in AntiBotStandardToken._transfer(address,address,uint256) (Virtual
Reality Games World.sol#716-736):
  External calls:
  - pinkAntiBot.onPreTransferCheck(sender,recipient,amount) (Virtual Reality Games
World.sol#725)
  Event emitted after the call(s):
  - Transfer(sender,recipient,amount) (Virtual Reality Games World.sol#735)
Reentrancy in AntiBotStandardToken.constructor(string,string,uint8,uint256,address,ad
dress,uint256) (Virtual Reality Games World.sol#485-511):
  External calls:
  - pinkAntiBot.setTokenOwner(owner()) (Virtual Reality Games World.sol#500)
  Event emitted after the call(s):
  - TokenCreated(owner(),address(this),TokenType.antiBotStandard,VERSION) (Virtual
Reality Games World.sol#503-508)
Reentrancy in AntiBotStandardToken.transferFrom(address,address,uint256) (Virtual
Reality Games World.sol#630-645):
  External calls:
  - _transfer(sender,recipient,amount) (Virtual Reality Games World.sol#635)
    - pinkAntiBot.onPreTransferCheck(sender,recipient,amount) (Virtual Reality Games
World.sol#725)
  Event emitted after the call(s):
  - Approval(owner,spender,amount) (Virtual Reality Games World.sol#803)
    - _approve(sender,_msgSender(),_allowances[sender]
[_msgSender()].sub(amount,ERC20: transfer amount exceeds allowance)) (Virtual
```

```
Reality Games World.sol#636-643)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-vulnerabilities-3
INFO:Detectors:
AntiBotStandardToken._burn(address,uint256) (Virtual Reality Games World.sol#768-779) is never used and should be removed
AntiBotStandardToken._setupDecimals(uint8) (Virtual Reality Games World.sol#813-815) is never used and should be removed
Context._msgData() (Virtual Reality Games World.sol#110-112) is never used and should be removed
SafeMath.div(uint256,uint256) (Virtual Reality Games World.sol#324-326) is never used and should be removed
SafeMath.div(uint256,uint256,string) (Virtual Reality Games World.sol#380-389) is never used and should be removed
SafeMath.mod(uint256,uint256) (Virtual Reality Games World.sol#340-342) is never used and should be removed
SafeMath.mod(uint256,uint256,string) (Virtual Reality Games World.sol#406-415) is never used and should be removed
SafeMath.mul(uint256,uint256) (Virtual Reality Games World.sol#310-312) is never used and should be removed
SafeMath.sub(uint256,uint256) (Virtual Reality Games World.sol#296-298) is never used and should be removed
SafeMath.tryAdd(uint256,uint256) (Virtual Reality Games World.sol#211-217) is never used and should be removed
SafeMath.tryDiv(uint256,uint256) (Virtual Reality Games World.sol#253-258) is never used and should be removed
SafeMath.tryMod(uint256,uint256) (Virtual Reality Games World.sol#265-270) is never used and should be removed
SafeMath.tryMul(uint256,uint256) (Virtual Reality Games World.sol#236-246) is never used and should be removed
SafeMath.trySub(uint256,uint256) (Virtual Reality Games World.sol#224-229) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
INFO:Detectors:
Pragma version=0.8.4 (Virtual Reality Games World.sol#461) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6
solc-0.8.4 is not recommended for deployment
```

```
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Parameter AntiBotStandardToken.setEnableAntiBot(bool)._enable (Virtual Reality Games World.sol#513) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions
INFO:Detectors:
Variable AntiBotStandardToken._totalSupply (Virtual Reality Games World.sol#480) is too similar to AntiBotStandardToken.constructor(string,string,uint8,uint256,address,address,uint256).totalSupply_ (Virtual Reality Games World.sol#489)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-are-too-similar
INFO:Detectors:
renounceOwnership() should be declared external:
  - Ownable.renounceOwnership() (Virtual Reality Games World.sol#169-171)
transferOwnership(address) should be declared external:
  - Ownable.transferOwnership(address) (Virtual Reality Games World.sol#177-180)
name() should be declared external:
  - AntiBotStandardToken.name() (Virtual Reality Games World.sol#520-522)
symbol() should be declared external:
  - AntiBotStandardToken.symbol() (Virtual Reality Games World.sol#528-530)
decimals() should be declared external:
  - AntiBotStandardToken.decimals() (Virtual Reality Games World.sol#545-547)
totalSupply() should be declared external:
  - AntiBotStandardToken.totalSupply() (Virtual Reality Games World.sol#552-554)
balanceOf(address) should be declared external:
  - AntiBotStandardToken.balanceOf(address) (Virtual Reality Games World.sol#559-567)
transfer(address,uint256) should be declared external:
  - AntiBotStandardToken.transfer(address,uint256) (Virtual Reality Games World.sol#577-585)
allowance(address,address) should be declared external:
  - AntiBotStandardToken.allowance(address,address) (Virtual Reality Games World.sol#590-598)
approve(address,uint256) should be declared external:
  - AntiBotStandardToken.approve(address,uint256) (Virtual Reality Games World.sol#607-615)
```

```
transferFrom(address,address,uint256) should be declared external:
  - AntiBotStandardToken.transferFrom(address,address,uint256) (Virtual Reality
Games World.sol#630-645)
increaseAllowance(address,uint256) should be declared external:
  - AntiBotStandardToken.increaseAllowance(address,uint256) (Virtual Reality Games
World.sol#659-670)
decreaseAllowance(address,uint256) should be declared external:
  - AntiBotStandardToken.decreaseAllowance(address,uint256) (Virtual Reality Games
World.sol#686-700)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
INFO:Slither:Virtual Reality Games World.sol analyzed (7 contracts with 75
detectors), 40 result(s) found
INFO:Slither:Use https://crytic.io/ to get access to additional detectors and Github
integration
  Virtual Reality Games World
```

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WOOF!

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