



ETHOS  
AUDIT

# BUSC Paycheck

Audit Report

May 17, 2022

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# Executive Summary

## Audit Details

Project Name	BUSDPaycheck
Codebase	<a href="https://bscscan.com/address/0x9ce98c14e6ba83a9bf1ad9eacbd5b013c2d7a119#code">https://bscscan.com/address/0x9ce98c14e6ba83a9bf1ad9eacbd5b013c2d7a119#code</a>
Source Code	BUSCPaycheck.sol
Initial Audit Date	May 7, 2022
Revision Dates	-
Methodology	Manual

## Methodology

This audit's objectives are to evaluate:

- Security-related issues
- Code quality
- Relevant documentation
- Adherence to specifications
- Adherence to best practices

This audit examines the possibility of issues existing along the following vectors (but not limited to):

- Single & Cross-Function Reentrancy
- Front Running (Transaction Order Dependence)
- Timestamp dependence
- Integer Overflow and Underflow
- Mishandled exceptions and call stack limits
- Unsafe external calls
- Number rounding errors
- DoS with (Unexpected) Revert
- DoS with Block Gas Limit
- Insufficient gas griefing
- Forcibly sending native currency
- Logical oversights
- Access control
- Centralization of power
- Logic-Specification Contradiction
- Functionality duplication
- Malicious token minting

The code review conducted for this audit follows the following structure:

1. Review of specifications, documentation to assess smart contract functionality
2. Manual, line-by-line review of code
3. Code's adherence to functionality as presented by documentation
4. Automated tool-driven review of smart contract functionality
5. Assess adherence to best practices
6. Provide actionable recommendations

## Contract Details

Contract ID	0x9Ce98c14e6bA83a9Bf1ad9eACbd5B013C2D7a119
Network	Binance Smart Chain
Language	Solidity
Compiler	v0.8.13+commit.abaa5c0e
Verification Date	Apr. 17, 2022
Contract Type	Utility Contract
Libraries	Custom

## Result Summary

Ethos' audit of the **BUSD Paycheck** smart contract has concluded with a **POSITIVE** result. The initial review identified a number of non-critical issues and one informational issue. The remaining report includes all issues identified in the initial review, as well as the revised status post resolution by the team.

- The smart contract is a new variant of the 'miner' meta that has been redesigned to incorporate auto-compounding mechanisms and a more streamlined user data structure
- Miners are not collected utilizing the traditional decay function utilized by other miners, but by a straight
- It allows users to deposit **BUSD tokens** into the contract, minimum of 10 BUSD and a maximum of 10000 BUSD once within a 7-day period
- Deposits are locked on deposit and redistributed to contract participants for 7 days until either a compound, withdrawal or deposit action is triggered by the user
- The rate of redistributions is **1.81% daily (or 12.7% weekly)**
- There is a referral bonus distributed to referrers of approximately **5%**
- There is an **7% dev fee** applied on all deposits and withdrawals (**5% dev fee and 2% back to TVL**)
- Value locked within the contract **cannot be manually removed** by the owner
- The **contract cannot be closed or shut off** at any point after deployment

To conclude, this smart contract functions as it is designed. It is not ruggable by the owner or any other entities through attack vectors currently known in the EVM community.

## Issues Reported

Severity	Unresolved	Acknowledged	Resolved
Extreme	0	0	0
High	0	0	0
Medium	0	0	0
Low	0	2	0

## Issues Summary

ID	Title	Severity	Status
BP-0	Missing Event emissions	Low	Acknowledged
BP-1	Functions that could be declared external	Low	Acknowledged

## Detailed Findings

### BP-0 – Missing Event emissions

**Severity:** Low                      **Status:** Acknowledged

**Description:** There are several functions that change state variables, however, they do not emit events to pass the changes out of chain.

**Risk:** Not emitting an event from functions that impose changes to state variables could result in a lack of functionality often required for sound logic and functionality within external applications calling on smart contract functions.

**Recommendation:** We recommend emitting events for all essential state variables that are possible to be changed during runtime.

### BP-1 – Functions that could be declared external

**Severity:** Low                      **Status:** Acknowledged

**Description:** Several functions are declared as public visibility, however, since they are never called by the contract they should be declared external.

**Risk:** This is a gas optimization issue.

**Recommendation:** We recommend that functions that are never called by the contract to be declared as external to save gas.