

# **\_screen audit**

**Achilles Finance**

BNB Smart Chain | Feb'22

Audited by: Vivek Tiwari (@arimanyus)

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This document contains our findings for the screen audit of a cryptographic asset. This is not a full-fledged or comprehensive audit where in-depth vulnerabilities are found and/or corrected. A screen audit consists of a manual screening of the project's codebase, structure, and functionalities. It's a good starting point for a comprehensive audit, but not a replacement for the same.

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## Executive Summary

On Feb 18, 2022, the Aphelion Labs security team received the Achilles Finance team's screen audit application for their BNB Smart Chain token, developed the screen audit plan according to the agreement of both parties and the characteristics of the project, and finally issued the security audit report.

The address of the audited smart contract on Feb 20<sup>th</sup>, 2022, was:

**0x6eE3001Cd4aCEe07F7Fc569842376683D499A294**

The objective of this screen audit was to:

1. Check that the codebase and structure are coherent with industry standard practices.
2. Token is working as intended.
3. Identify potential security issues and vulnerabilities with automated testing environments.

## Audit Details

<b>Project name</b>	Achilles Finance
<b>Review type</b>	Grade-B Limited Screen Audit
<b>Deployer</b>	0x02f8cd6eb4e508146c8ea2b21f3a022d2cbd323f
<b>Client contact</b>	Project stakeholder
<b>Blockchain</b>	BNB Smart Chain (previously Binance Smart Chain)
<b>Audited by</b>	@arimanyus
<b>Codebase</b>	Github

## Contract Details

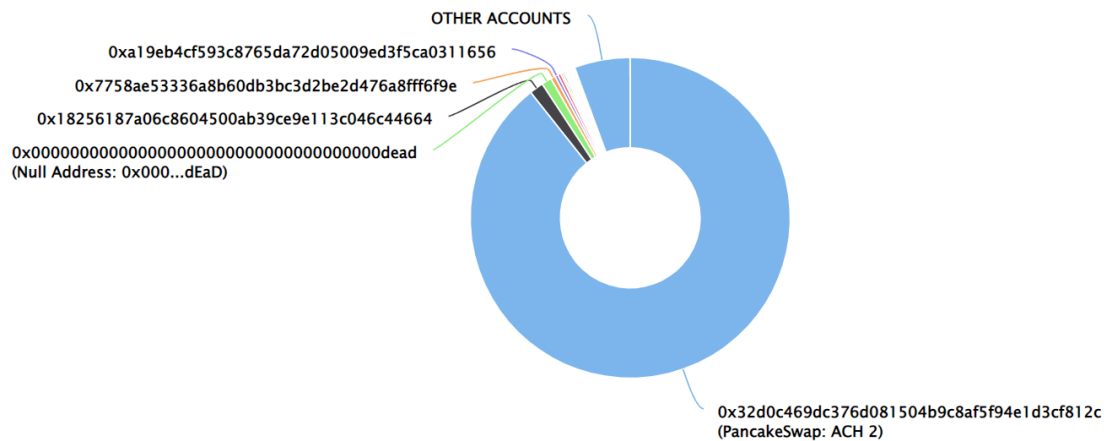
Token contract details as on February 20<sup>th</sup>, 2022.

<b>Contract name</b>	Achilles finance
<b>Contract address</b>	0x6eE3001Cd4aCEe07F7Fc569842376683D499A294
<b>Contract ticker</b>	ACH
<b>Total supply</b>	98,188,643.356409
<b>Client contact</b>	Project stakeholder
<b>Decimals</b>	9
<b>Token holders</b>	282
<b>Transactions count</b>	803
<b>Burn fee</b>	2
<b>Tax fee</b>	2
<b>Total fees</b>	1811356643590141
<b>Liquidity fee</b>	6
<b>Blockchain</b>	BNB Smart Chain (previously Binance Smart Chain)
<b>Uniswap V2 pair</b>	0x32d0c469dc376d081504b9c8af5f94e1d3cf812c

## Token distribution

Achilles finance Top 100 Token Holders

Source: BscScan.com



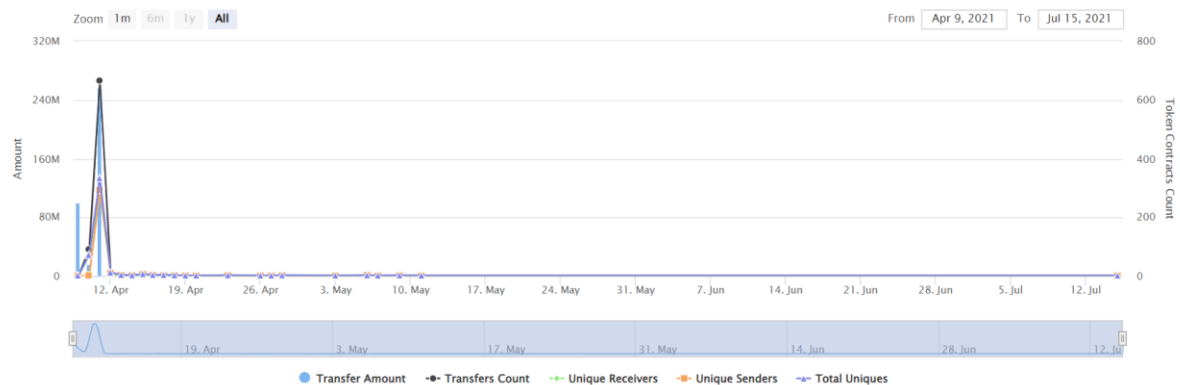
## Contract interaction overview

Time Series: Token Contract Overview

Fri 9, Apr 2021 - Thu 15, Jul 2021

Token Contract 0x6eE3001Cd4aCE07F7Fc569842376683D499A294 (Achilles finance)

Source: BscScan.com



## Top 10 holders

Rank	Address	Quantity	Percentage	Analytics
1	<a href="#">PancakeSwap: ACH 2</a>	87,692,754.355012091	89.3105%	<a href="#">Analytics</a>
2	<a href="#">0x18256187a06c8604500ab39ce9e113c046c44664</a>	1,400,715.62874069	1.4266%	<a href="#">Analytics</a>
3	<a href="#">Null Address: 0x000...dEaD</a>	1,000,073.968749358	1.0185%	<a href="#">Analytics</a>
4	<a href="#">0x7758ae53336a8b60db3bc3d2be2d476a8fff6f9e</a>	453,645.769050186	0.4620%	<a href="#">Analytics</a>
5	<a href="#">0xa19eb4cf593c8765da72d05009ed3f5ca0311656</a>	305,599.269960302	0.3112%	<a href="#">Analytics</a>
6	<a href="#">0x29678b326d14983af42dc1f3fc8cddc42a043f83</a>	302,426.492200629	0.3080%	<a href="#">Analytics</a>
7	<a href="#">0x089980aecda44a0190d8b0df64f3c03d632386</a>	196,695.670276109	0.2003%	<a href="#">Analytics</a>
8	<a href="#">0x4c0af1999b3b83a6f854ec1138028b9bc6f4d58f</a>	189,649.030168317	0.1931%	<a href="#">Analytics</a>
9	<a href="#">0xa7bbaa69de7fda908abd9ef4309f20f19a77c59</a>	151,205.297551479	0.1540%	<a href="#">Analytics</a>
10	<a href="#">0x9f162d0c79f97e1a597f3422bca8cb70308545fb</a>	85,824.007621006	0.0874%	<a href="#">Analytics</a>

## Top 10 Holders' Analysis

**Overview:** none of the top 10 holders are blacklisted by Aphelion Labs or were found to have made any suspicious activities in the past.

**Activity analysis:** the nature of the top 10 accounts was found to be mostly *organic* and no suspicious activity in the past was observed.

**Whale spotting:** 0 whales (individual wallets holding 1%+ of the total token supply) were found among the top token holders.

**Score:** 10/10



## Contract Structure

```

| **Achilles** | Implementation | Context, IERC20, Ownable |||
| L | <Constructor> | Public ! | * | NO ! |
| L | name | Public ! | | NO ! |
| L | symbol | Public ! | | NO ! |
| L | decimals | Public ! | | NO ! |
| L | totalSupply | Public ! | | NO ! |
| L | balanceOf | Public ! | | NO ! |
| L | transfer | Public ! | * | NO ! |
| L | allowance | Public ! | | NO ! |
| L | approve | Public ! | * | NO ! |
| L | transferFrom | Public ! | * | NO ! |
| L | increaseAllowance | Public ! | * | NO ! |
| L | decreaseAllowance | Public ! | * | NO ! |
| L | isExcludedFromReward | Public ! | | NO ! |
| L | totalFees | Public ! | | NO ! |
| L | totalBurn | Public ! | | NO ! |
| L | deliver | Public ! | * | NO ! |
| L | reflectionFromToken | Public ! | | NO ! |
| L | tokenFromReflection | Public ! | | NO ! |
| L | excludeFromReward | Public ! | * | onlyOwner |
| L | includeInReward | External ! | * | onlyOwner |
| L | _approve | Private 🔒 | * | |
| L | _transfer | Private 🔒 | * | |
| L | swapAndLiquify | Private 🔒 | * | lockTheSwap |
| L | swapTokensForEth | Private 🔒 | * | |
| L | addLiquidity | Private 🔒 | * | |
| L | burnLpTokens | Private 🔒 | * | |
| L | LpTokenBalance | Public ! | | NO ! |
| L | withDrawLpTokens | Public ! | * | onlyOwner |
| L | _tokenTransfer | Private 🔒 | * | |
| L | _transferStandard | Private 🔒 | * | |
| L | _transferToExcluded | Private 🔒 | * | |
| L | _transferFromExcluded | Private 🔒 | * | |
| L | _transferBothExcluded | Private 🔒 | * | |
| L | _reflectFee | Private 🔒 | * | |
| L | _getValues | Private 🔒 | | |
| L | _getTValues | Private 🔒 | | |
| L | _getRValues | Private 🔒 | | |
| L | _getRate | Private 🔒 | | |
| L | _getCurrentSupply | Private 🔒 | | |
| L | _takeLiquidity | Private 🔒 | * | |
| L | _rewardLiquidityProviders | Private 🔒 | * | |
| L | calculateTaxFee | Private 🔒 | | |
| L | calculateBurnFee | Private 🔒 | | |
| L | calculateLiquidityFee | Private 🔒 | | |

```

```

| L | removeAllFee | Private 🔒 | * | |
| L | restoreAllFee | Private 🔒 | * | |
| L | isExcludedFromFee | Public ! | | NO ! |
| L | excludeFromFee | Public ! | * | onlyOwner |
| L | includeInFee | Public ! | * | onlyOwner |
| L | setTaxFeePercent | External ! | * | onlyOwner |
| L | setBurnFeePercent | External ! | * | onlyOwner |
| L | setLiquidityFeePercent | External ! | * | onlyOwner |
| L | setLpRewardFromLiquidityPercent | External ! | * | onlyOwner |
| L | setMaxTxPercent | External ! | * | onlyOwner |
| L | setBurnLpTokenEnabled | External ! | * | onlyOwner |
| L | setSwapAndLiquifyEnabled | Public ! | * | onlyOwner |
| L | <Receive Ether> | External ! | $ | NO ! |

```

#### Legends:

```

| * | Function can modify state
| $ | Function is payable

```

## Contract Interaction



## Issues Checking Summary

Compiler errors	Passed
Delays in delivery	Passed
Oracle calls	Passed
Method execution permissions	Passed
Data leaks	Passed
Scopes, declarations	Passed
Event log	Passed
Fallback function security	Passed
Exchange rate logic impact	Passed
Variable check	Passed
MythX	Passed
Slyther	Passed
Solhint	Low severity issues
Suspicious library check	Passed

## Issue(s) Analysis

### 1. Low-severity issues

#### a. Solhint Parsing Errors

Lint results:

```
Education.sol:146:18: Error: Parse error: missing ';' at '{'
```

```
Education.sol:176:18: Error: Parse error: missing ';' at '{'
```

```
Education.sol:196:18: Error: Parse error: missing ';' at '{'
```

```
Education.sol:217:18: Error: Parse error: missing ';' at '{'
```

This is a low-severity issue spotted on Solhint - not being able to parse some of the function endings, which will have no impact whatsoever on the functionality of the contract. However, it is recommended to put appropriate closings and follow a semantic approach in resolving such syntactical errors.

## Conclusion

Aphelion Labs concludes the screen audit of the contract. There were no high or medium-severity issues found with the contract. The only low-severity issue found has negligible effect on the contract's functionality.

**Closing notes from Aphelion Labs:** we do not make any warranties on the financial instruments associated with this project, neither do we “approve” or “reject” the code-sustainability, quality of the contract or investment attractiveness.

# धन्यवाद

## thank you

*exclamation*

exclamation: **thank you**; exclamation: **thankyou**

a polite expression used when acknowledging a gift, service, or compliment, or accepting or refusing an offer.

"**thank you** for your letter"

*noun*

noun: **thank you**; plural noun: **thank yous**; noun: **thankyou**; plural noun: **thanky**  
**thank-you**

an instance or means of expressing thanks.

"Lucy planned a party as a thank you to hospital staff"



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