CFG NINJA AUDITS

Security Assessment

Planet Ape Club Token

August 21, 2022

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Audit Summary

This report has been prepared for Planet Ape Club Token on the Binance Smart Chain 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.

Project Overview

Token Summary

Parameter	Result
Address	
Name	Planet Ape Club
Token Tracker	Planet Ape Club (APE)
Decimals	5
Supply	450,000
Platform	Binance Smart Chain
compiler	v0.7.6+commit.7338295f
Contract Name	PlanetApeClub
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	https://testnet.bscscan.com/address/0xa89E7cfbD264B692835161A78Fe404cedD22Ed40#code
Payment Tx	0x05ba1e1d8b6a2054015b8799c38179cbd321d69b971e9c081638defb131804ca

Project Overview

Risk Analysis Summary

Parameter	Result
Buy Tax	9%
Sale Tax	12%
Is honeypot?	Clean
Can edit tax?	No
Is anti whale?	No
Is blacklisted?	No
Is whitelisted?	Yes
Holders	Clean
Security Score	92/100
Auditor Score	92/100
Confidence Level	Pass

The following quick summary has been added to the project overview, however there are more details about the audit and their results please read every details.

Main Contract Assessed
Contract Name

Name	Contract	Live
Planet Ape Club		Yes

TestNet Contract Assessed
Contract Name

Name	Contract	Live
Planet Ape Club	0xe0E1E076C2a593327B27eE4789d6e04c186aceb8	Yes

Solidity Code Provided

SolID	File Sha-1	FileName
PlanetApeClub	5e55990299710100941edf5c03aaeaf121db3288	planetapeclub.sol

Mint Check

The Project Owners of Planet Ape Club does not have a mint function in the contract, owner cannot mint tokens after initial deploy

. .

The Project has a Total Supply of 450,000 and cannot mint any more than the Max Supply.

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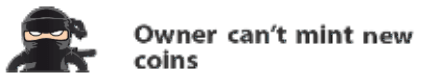
Mint Notes:

Auditor Notes: Max Supply: 3,000,000,000 Rebase APY: 180,000%

Project Owner Notes:



Fees Check

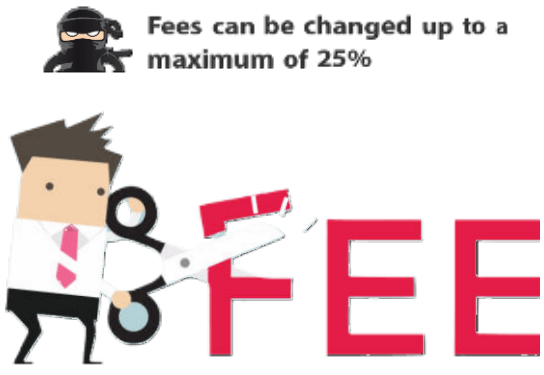
The Project Owners of Planet Ape Club does not have the ability to set fees higher than 25% .

Team May have fees defined, however they dont have the ability to set those fees higher than 25%.

Tax Fee Notes:

Auditor Notes:

Project Owner Notes: .



Blacklist Check

The Project Owners of Planet Ape Club does not have a blacklist function their contract.

The Project allow owners to transfer their tokens without any restrictions.

Token owner cannot blacklist the contract: Malicious or compromised owners can trap contracts relying on tokens with a blacklist.

Blacklist Notes:

Auditor Notes:

Project Owner Notes: .

MaxTx Check

The Project Onwers of Planet Ape Club does not has the ability to set max tx amount

The Team allow any investors to swap, transfer or sale their total amount if needed.

MaxTX Notes:

Auditor Notes:

Project Owner Notes:

Project Has No MaxTX

Pause Trade Check

The Project Onwers of Planet Ape Club Owner can pause trading but he can't move tokens (Owner can't 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:

Project Owner Notes:

Contract Ownership

The contract ownership of Planet Ape Club 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 0x935134E77F4109602751864A6Bd60A0D403e6C37 which can be viewed from:
HERE

The owner wallet has the power to call the functions displayed on the priviliged functions chart below, if the owner wallet is compromised this privileges could be exploited.

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

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

Liquidity Ownership

The token does not have liquidity at the moment of the audit, block 20637265

If liquidity is unlocked, then the token developers can do what is infamously known as 'rugpull'. Once investors start buying token from the exchange, the liquidity pool will accumulate more and more coins of established value (e.g., ETH or BNB or Tether). This is because investors are basically sending these tokens of value to the exchange, to get the new token. Developers can withdraw this liquidity from the exchange, cash in all the value and run off with it. Liquidity is locked by renouncing the ownership of liquidity pool (LP) tokens for a fixed time period, by sending them to a time-lock smart contract. Without ownership of LP tokens, developers cannot get liquidity pool funds back. This provides confidence to the investors that the token developers will not run away with the liquidity money. It is now a standard practice that all token developers follow, and this is what really differentiates a scam coin from a real one.

Read More

KYC Information

The Project Owners of Planet Ape Club is not KYC. .

The owner wallet has the power to call the functions displayed on the priviliged functions chart below, if the owner wallet is compromised this privileges could be exploited.

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

KYC Information Notes:

Auditor Notes: Asked project owner about KYC, Project owner passed KYC with PinkSale.

Project Owner Notes:

Smart Contract Vulnerability Checks

ID	Severity	Name	File	location
SWC-100	Pass	Function Default Visibility	planetapeclub.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	planetapeclub.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	planetapeclub.sol	L: 0 C: 0
SWC-103	Low	A floating pragma is set.	planetapeclub.sol	L: 22 C: 0
SWC-104	Pass	Unchecked Call Return Value.	planetapeclub.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	planetapeclub.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	planetapeclub.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	planetapeclub.sol	L: 0 C: 0
SWC-108	Low	State variable visibility is not set..	planetapeclub.sol	L: 428 C: 29
SWC-109	Pass	Uninitialized Storage Pointer.	planetapeclub.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	planetapeclub.sol	L: 0 C: 0
SWC-111	Pass	Use of Deprecated Solidity Functions.	planetapeclub.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	planetapeclub.sol	L: 0 C: 0

ID	Severity	Name	File	location
SWC-113	Pass	Multiple calls are executed in the same transaction.	planetapeclub.sol	L: 0 C: 0
SWC-114	Pass	Transaction Order Dependence.	planetapeclub.sol	L: 0 C: 0
SWC-115	Pass	Authorization through tx.origin.	planetapeclub.sol	L: 0 C: 0
SWC-116	Pass	A control flow decision is made based on The block.timestamp environment variable.	planetapeclub.sol	L: 0 C: 0
SWC-117	Pass	Signature Malleability.	planetapeclub.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	planetapeclub.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	planetapeclub.sol	L: 0 C: 0
SWC-120	Pass	Potential use of block.number as source of randonmness.	planetapeclub.sol	L: 420 C: 12,L: 493 C: 28
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	planetapeclub.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	planetapeclub.sol	L: 0 C: 0
SWC-123	Pass	Requirement Violation.	planetapeclub.sol	L: 0 C: 0
SWC-124	Pass	Write to Arbitrary Storage Location.	planetapeclub.sol	L: 0 C: 0
SWC-125	Pass	Incorrect Inheritance Order.	planetapeclub.sol	L: 0 C: 0
SWC-126	Pass	Insufficient Gas Griefing.	planetapeclub.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	planetapeclub.sol	L: 0 C: 0

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

We scan the contract for additional security issues using MYTHX and industry standard security scanning tool

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

SWC Information Notes:

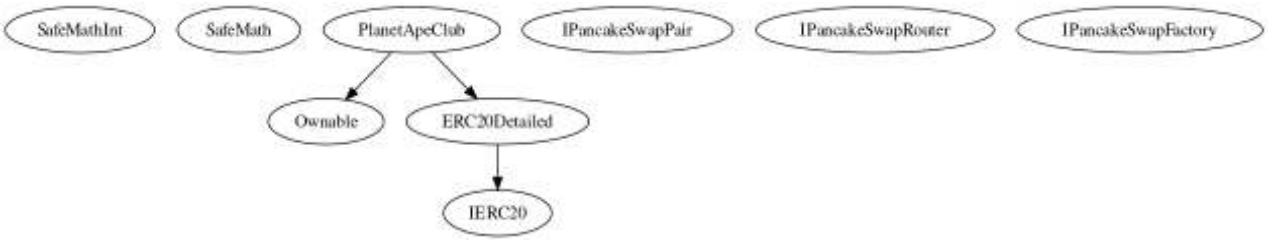
Auditor Notes:

No Vulnerabilities where found during the security scan.

Project Owner Notes:

Call Graph and Inheritance

The contract for Planet Ape Club has the following call graph structure



Priviliged Functions (onlyOwner)

Function Name	Parameters	Visibility
renounceOwnership	none	external
transferOwnership	none	public
setAutoRebase	none	public
setAutoAddLiquidity	none	external
setFeeReceivers	none	external
setWhitelist	none	external
setPairAddress	none	external
setLP	none	external

Assessment Results

- Smart contract uses Rebase. With Rebase, the circulating token supply adjusts (increases or decreases) automatically or manually according to set parameters.
- Rebase APY: 180,000%
- Total Buy Fee: 9%
- Total Sell Fee: 12%
- Contract has the ability to whitelist addresses.

Audit Passed

Social Media Checks

Social Media	URL	Result
Twitter	https://twitter.com/PlanetApeClub	Pass
Instagram	https://www.instagram.com/PlanetApeclub.io/	Pass
Website	http://planetapeclub.io	Pass
Telegram	https://t.me/PlanetApeClub	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: No other social media

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 recommendations to improve the style of the code 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	0	0	0
Medium	0	0	0
Minor	1	0	0
Informational	1	1	0
Total	1	1	0

APE-01 | Potential Sandwich Attacks.

Category	Severity	Location	Status
Security	Medium	planetapeclub.sol: 806,13	Pending

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.

Referrences:

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

APE-02 | Function Visibility Optimization.

Category	Severity	Location	Status
Gas Optimization	Informational	planetapeclub.sol: 0,0	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
name		public
symbol		public
decimals		public
setTaxes		public
setSellTaxes		public

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

Remediation

We advise that the functions' 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.

APE-04 | Centralized Risk In addLiquidity.

Category	Severity	Location	Status
Coding Style	Major	planetapeclub.sol: 720,12	Pending

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 APE-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

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 audit to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the codes that were provided for the scope of this audit. This audit report does not constitute agreement, acceptance or advocation for the Project that was audited, and users relying on this audit 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 may be pursued by the Project in question, and that 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 completely free of exploits, bugs, vulnerabilities or deprecation of technologies.

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