

# Smart Contract Security Audit V1

## Presale Chaufr Smart Contract Audit

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# Background

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

## Project Information

- **Platform:** Binance Smart Chain
- **Name:** PresaleChaufr
- **Language :** Solidity
- **Contract Address:** 0xc554c6DC24F0c462B2acb2fFb0709eD2eadb6741
- **Code Source:**  
<https://testnet.bscscan.com/address/0xc554c6DC24F0c462B2acb2fFb0709eD2eadb6741#code>

# PresaleChaufr Smart Contract

Crowdfunding Token Sale with Vesting

## Overview

A secure, decentralized presale platform for CHUFR tokens with Chainlink price feeds and vesting



- Built on Solidity 0.8.28
- Uses OpenZeppelin's ERC20, Ownable, and ReentrancyGuard security
- Integrates Chainlink for real-time BNB and USDT price feeds

## Key Features

### Purchase Options

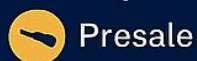
- Buy CHUFR tokens with BNB or USDT
- Bonus 15% during presale, 5% post-presale

### Vesting

- Tokens vest over 24 months starting and post-pre-presale

### Limits

- Min Buy: 10 tokens
- Max Buy: 1M tokens



## How It Works



## Contract Details

Powered by Solidity, OpenZeppelin, and Chainlink

## Security & Admin Controls

### Security

- Only owner can update prices, vesting, or admin address
- Only owner can update prices, vesting

### Admin Functions

- Update presale prices, vesting schedule, or buy limits
- Withdraw stuck BNB or tokens
- VestingDurationUpdated, PresaleEndTimeStamp Updated
- AdminAddressUpdated BuyLimitUpdated

## Events EMITTED

- TokensPurchased tracks buyer, amount and cost and currency
- PriceUpdated presale phase 1 price
- VestingDuration Updated

audited by  SaferICO

## Executive Summary

According to our assessment, the customer's solidity smart contract is **Well-Secured**.

Well Secured	✓
Secured	
Poor Secured	
Insecure	

Automated checks are with remix IDE. All issues were performed by the team, which included the analysis of code functionality, manual audit found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the audit overview section. The general overview is presented in the Project Information section and all issues found are located in the audit overview section.

Team found 0 critical, 0 high, 0 medium, 2 low, 0 very low-level issues and 2 note in all solidity files of the contract

The files:

PresaleChaufr.sol

### Audit Score:

99% secure



# File and Function Level Report

## File in Scope:

Contract Name	SHA 256 hash	Contract Address
PresaleChaufr.sol	198fb3829689cb5375cfe bd44dd30b7ebcfb30f0	0xc554c6DC24F0c462B2acb2fFb0709eD2eadb 6741

- Contract: PresaleChaufr
- Inherit: Ownable, ReentrancyGuard
- Observation: All passed including security check
- Test Report: passed
- Score: passed
- Conclusion: passed

Function	Test Result	Type / Return Type	Score
admin	✓	Read / public	Passed
chainLinkBnb	✓	Read / public	Passed
chainLinkUsdt	✓	Read / public	Passed
getBnbPricePerToken	✓	Read / public	Passed
getUsdtPricePerToken	✓	Read / public	Passed
presaleEndTimestamp	✓	Read / public	Passed
owner	✓	Read / public	Passed
maxBuyLimit	✓	Read / public	Passed
minBuyLimit	✓	Read / public	Passed
presalePhase1UsdPrice	✓	Read / public	Passed
presalePhase2UsdPrice	✓	Read / public	Passed
presalePurchaseLimit	✓	Read / public	Passed
token	✓	Read / public	Passed
totalPurchasedToken	✓	Read / public	Passed

usdt	✓	Read / public	<b>Passed</b>
vesting	✓	Read / public	<b>Passed</b>
vestingDuration	✓	Read / public	<b>Passed</b>
vestingStartTime	✓	Read / public	<b>Passed</b>
transferOwnership	✓	Write / public	<b>Passed</b>
renounceOwnership	✓	Write / public	<b>Passed</b>
buyTokenUSDT	✓	Write / public	<b>Passed</b>
buyTokenBNB	✓	Write / payable	<b>Passed</b>
updateAdminAddress	✓	Write / public	<b>Passed</b>
updateBuyLimit	✓	Write / public	<b>Passed</b>
updatePresalePhase2Price	✓	Write / public	<b>Passed</b>
updatePresalePhase1Price	✓	Write / public	<b>Passed</b>
updatePresaleTimestamp	✓	Write / public	<b>Passed</b>
updateVestingSchedule	✓	Write / public	<b>Passed</b>
withdrawStuckTokens	✓	Write / public	<b>Passed</b>
withdrawStuckBNB	✓	Write / public	<b>Passed</b>

# Issues Checking Status

## SWC Attack Analysis

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) for more info check

<https://swcregistry.io/>

No.	Issue Description	Checking Status
136	Unencrypted Private Data On-Chain	Passed
135	Code With No Effects	Passed
134	Message call with hardcoded gas amount	Passed
133	Hash Collisions With Multiple Variable Length Arguments	Passed
132	Unexpected Ether balance	Passed
131	Presence of unused variables	Passed
130	Right-To-Left-Override control character (U+202E)	Passed
129	Typographical Error	Passed
128	DoS with block gas limit.	Passed
127	Arbitrary Jump with Function Type Variable	Passed
126	Insufficient Gas Griefing	Passed
125	Incorrect Inheritance Order	Passed
124	Write to Arbitrary Storage Location	Passed
123	Requirement Violation	Passed
122	Lack of Proper Signature Verification	Passed
121	Missing Protection against Signature Replay Attacks	Passed
120	Weak Sources of Randomness from Chain Attributes	Passed
119	Shadowing State Variables	Passed



118	Incorrect Constructor Name	<b>Passed</b>
117	Signature Malleability	<b>Passed</b>
116	Block values as a proxy for time	<b>Not Passed</b>
115	Authorization through tx.origin	<b>Passed</b>
114	Transaction Order Dependence	<b>Passed</b>
113	DoS with Failed Call	<b>Passed</b>
112	Delegatecall to Untrusted Callee	<b>Passed</b>
111	Use of Deprecated Solidity Functions	<b>Passed</b>
110	Assert Violation	<b>Passed</b>
109	Uninitialized Storage Pointer	<b>Passed</b>
108	State Variable Default Visibility	<b>Passed</b>
107	Reentrancy	<b>Passed</b>
106	Unprotected SELFDESTRUCT Instruction	<b>Passed</b>
105	Unprotected Ether Withdrawal	<b>Passed</b>
104	Unchecked Call Return Value	<b>Passed</b>
103	Floating Pragma	<b>Passed</b>
102	Outdated Compiler Version	<b>Passed</b>
101	Integer Overflow and Underflow	<b>Passed</b>
100	Function Default Visibility	<b>Passed</b>

## Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to tokens loss etc.
High	High-level vulnerabilities are difficult to exploit; however, they also have significant impact on smart contract execution, e.g. public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they can't lead to tokens lose
Low	Low-level vulnerabilities are mostly related to outdated, unused etc. code snippets, that can't have significant impact on execution
Note	Lowest-level vulnerabilities, code style violations and info statements can't affect smart contract execution and can be ignored.

## Audit Findings

### Critical:

No Critical severity vulnerabilities were found.

### High:

No High severity vulnerabilities were found.

### Medium:

No Medium severity vulnerabilities were found.

### Low:

#### #Admin Address vs. Owner:

##### Description

The contract uses `admin` for receiving funds but `owner()` (from `Ownable`) for management functions. This creates a potential for a mismatch if the `admin` address is intended to be the primary control. While `owner()` is the typical pattern for `Ownable`, if the `admin` is meant to be the sole recipient of funds and also have management capabilities, it might be clearer to rely solely on the `owner()` from `Ownable` and transfer ownership if needed, or make `admin` also the `owner()`.

##### Recommendation:

Option 1 (Preferred): Remove the `admin` state variable and associated functions (`updateAdminAddress`). Funds should be sent to `owner()`. If the intention is to separate roles, consider using OpenZeppelin's `AccessControl` for more granular role management.

Option 2 (If separation is intended): Clearly document the distinction between `admin` and `owner`. Ensure that the `admin` address can only be changed by the `owner()`, which is already implemented. The current setup is technically correct but might lead to confusion.

P.S: This issue is common to the majority of those smart contracts.

Status: **Acknowledged**.

#### #Owner privileges (In the period when the owner isn't renounced)

##### Description

The owner can change the price of the presale.  
The owner can change the time of the presale.  
The owner can change the limit of buying.

```

function updatePresalePhase1Price(uint256 _usdPresalePhase1Price) external
onlyOwner {
    require(_usdPresalePhase1Price > 0, "Price cannot be zero");

    presalePhase1UsdPrice = _usdPresalePhase1Price;

    emit PriceUpdated(_usdPresalePhase1Price);
}

function updatePresalePhase2Price(uint256 _usdPresalePhase2Price) external
onlyOwner {
    require(_usdPresalePhase2Price > 0, "Price cannot be zero");

    presalePhase2UsdPrice = _usdPresalePhase2Price;

    emit PriceUpdatedForAfterPresale(_usdPresalePhase2Price);
}

function updatePresaleTimestamp(uint256 _presaleEndTimestamp) external onlyOwner {
    require(_presaleEndTimestamp >= block.timestamp, "Timestamp must be in the
future");

    presaleEndTimestamp = _presaleEndTimestamp;

    vesting.setVestingPresaleEndTimestamp(_presaleEndTimestamp);

    emit PresaleEndTimestampUpdated(_presaleEndTimestamp);
}

function updateBuyLimit(uint256 _minBuyLimit, uint256 _maxBuyLimit) external
onlyOwner {
    require(_minBuyLimit > 0 && _maxBuyLimit > 0, "Amount could not be zero");
    require(_minBuyLimit != minBuyLimit || _maxBuyLimit != maxBuyLimit, "At
least one value must be different");

    minBuyLimit = _minBuyLimit;
    maxBuyLimit = _maxBuyLimit;

    emit BuyLimitUpdated(_minBuyLimit, _maxBuyLimit);
}

```

## Remediation

Make these functions internal in next version or the team should announce the investors before doing anything to give them time if they want to do anything.

P.S: This issue is common to the majority of those smart contracts.

Status: [Acknowledged](#).

## Very Low:

No Very Low severity vulnerabilities were found.

## Notes:

### #Magic Numbers:

#### Description

Hardcoded numbers like 1e18, 1e10, 15, 5, 10, 1\_000\_000, 300\_000\_000 are used directly in the code without clear explanations.

#### Recommendation

Define these as named constants (e.g., \_DECIMALS, \_BONUS\_PRESALE, \_BONUS\_AFTER\_PRESALE, \_DEFAULT\_MIN\_BUY\_LIMIT, \_DEFAULT\_MAX\_BUY\_LIMIT, \_DEFAULT\_PRESALE\_PURCHASE\_LIMIT). This improves readability and maintainability.

#### Code Example:

##### Solidity

```
uint256 public constant TOKEN_DECIMALS_FACTOR = 1e18;
uint256 public constant CHAINLINK_PRICE_DECIMALS_ADJUSTMENT = 1e10;
uint256 private constant PRESALE_BONUS_PERCENTAGE = 15;
uint256 private constant AFTER_PRESALE_BONUS_PERCENTAGE = 5;

// In constructor
minBuyLimit = 10 * TOKEN_DECIMALS_FACTOR;
uint256 bonusPercentage = block.timestamp <= presaleEndTimestamp ?
PRESALE_BONUS_PERCENTAGE : AFTER_PRESALE_BONUS_PERCENTAGE;
```

### Use of block.timestamp for comparisons

The value of block.timestamp can be manipulated by the miner. And conditions with strict equality is difficult to achieve - block.timestamp.

```
function updateVestingSchedule(uint256 _vestingStartTime, uint256
_vestingDuration) external onlyOwner {
    require(_vestingStartTime > block.timestamp, "Start
timestamp must be in the future");
    require(_vestingDuration > 0, "Vesting duration can't be
zero");
    vestingStartTime = _vestingStartTime;
    vestingDuration = _vestingDuration;
    emitVestingDurationUpdated(_vestingStartTime, _vestingDuration;}
```

#### Recommendation

Avoid use of block.timestamp.

# Automatic Testing

## 1- SOLIDITY STATIC ANALYSIS

**SOLIDITY STATIC ANALYSIS**

☒ Select all ☒ Autorun **Run**

**Security**

☒ Select Security

- ☒ **Transaction origin:**  
'tx.origin' used
- ☒ **Check-effects-interaction:**  
Potential reentrancy bugs
- ☒ **Inline assembly:**  
Inline assembly used
- ☒ **Block timestamp:**  
Can be influenced by miners
- ☒ **Low level calls:**  
Should only be used by experienced devs
- ☒ **Block hash:**  
Can be influenced by miners
- ☒ **Selfdestruct:**  
Contracts using destructed contract can be broken

**Gas & Economy**

☒ Select Gas & Economy

- ☒ **Gas costs:**  
Too high gas requirement of functions
- ☒ **This on local calls:**  
Invocation of local functions via 'this'
- ☒ **Delete dynamic array:**  
Use require/assert to ensure complete deletion
- ☒ **For loop over dynamic array:**  
Iterations depend on dynamic array's size
- ☒ **Ether transfer in loop:**  
Transferring Ether in a for/while/do-while loop

**SOLIDITY STATIC ANALYSIS**

**ERC**

☒ Select ERC

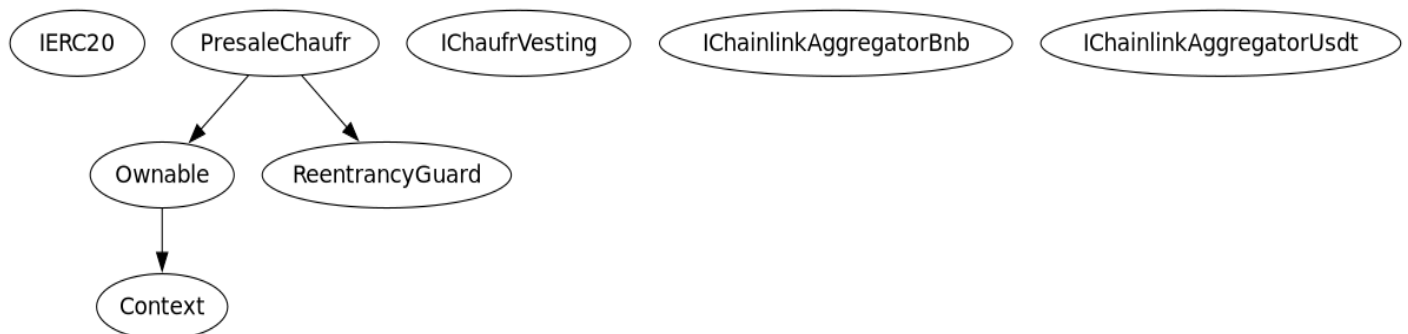
- ☒ **ERC20:**  
'decimals' should be 'uint8'

**Miscellaneous**

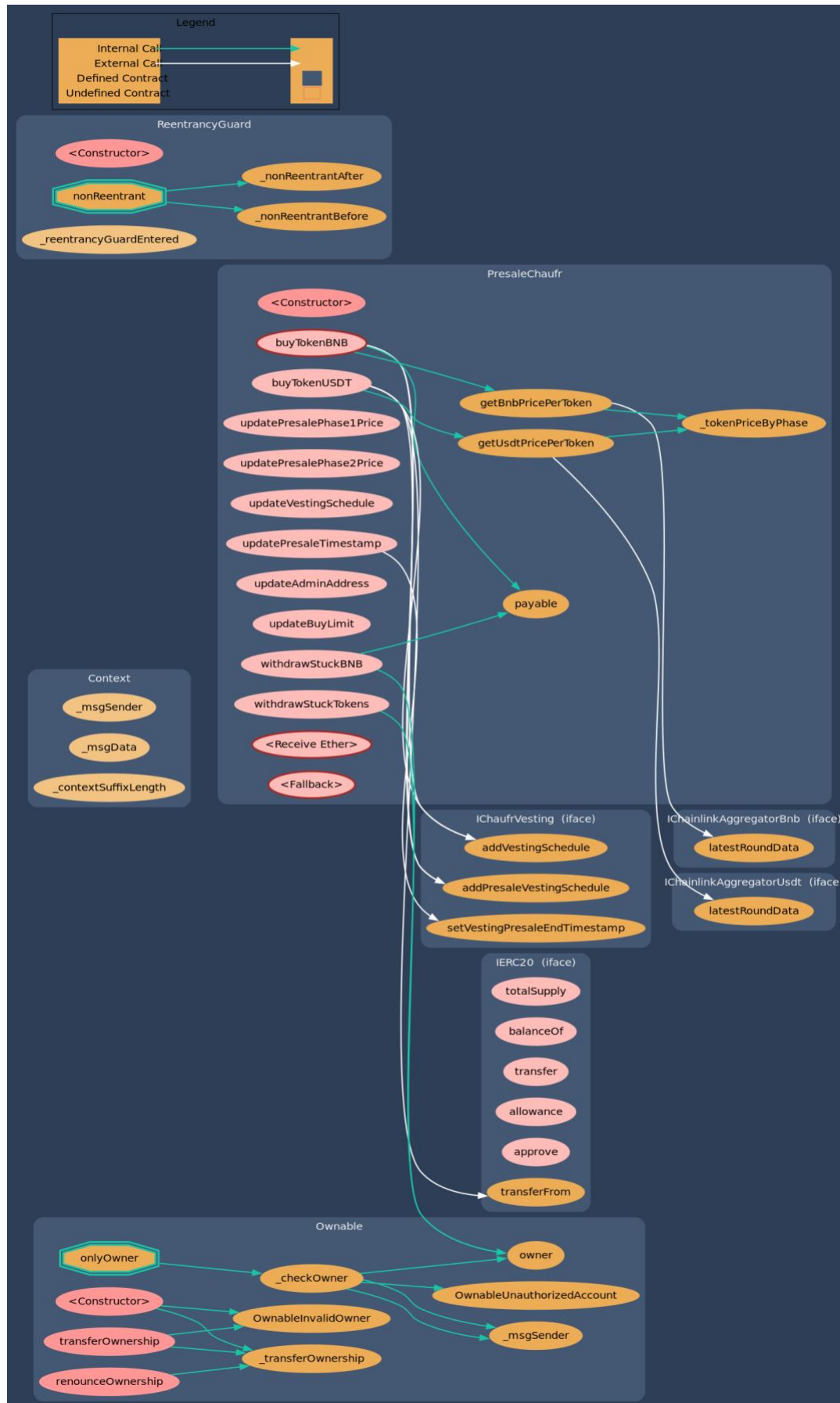
☒ Select Miscellaneous

- ☒ **Constant/View/Pure functions:**  
Potentially constant/view/pure functions
- ☒ **Similar variable names:**  
Variable names are too similar
- ☒ **No return:**  
Function with 'returns' not returning
- ☒ **Guard conditions:**  
Ensure appropriate use of require/assert
- ☒ **Result not used:**  
The result of an operation not used
- ☒ **String length:**  
Bytes length != String length
- ☒ **Delete from dynamic array:**  
'delete' leaves a gap in array
- ☒ **Data truncated:**  
Division on int/uint values truncates the result

## 2- Inheritance graph



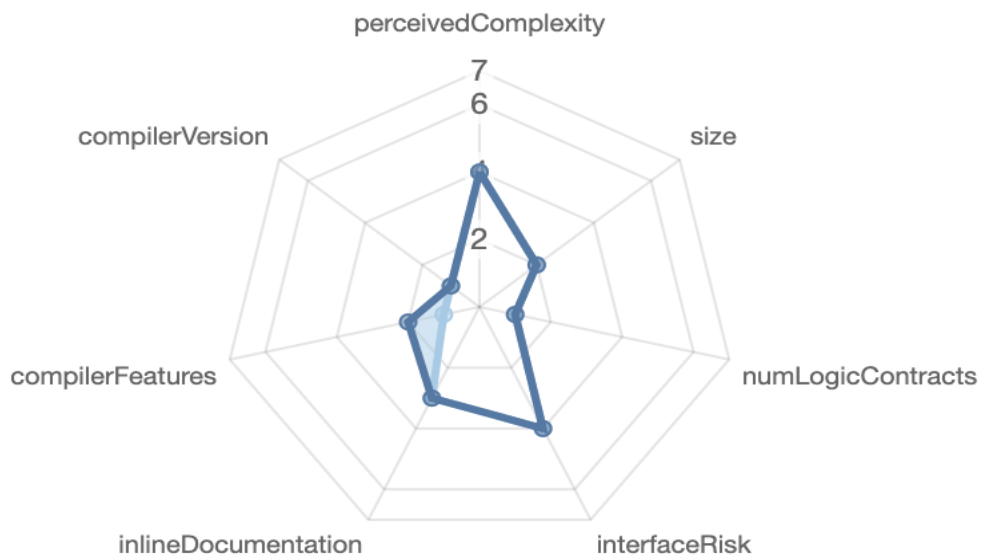
### 3- Call graph



## Source lines



## Risk level





# Source units in scope

## Source Units in Scope

Source Units Analyzed: 1  
Source Units in Scope: 1 (100%)

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	PresaleChaufr.sol	4	4	563	468	257	172	217	
	Totals	4	4	563	468	257	172	217	

Legend: [ - ]

- **Lines**: total lines of the source unit
- **nLines**: normalized lines of the source unit (e.g. normalizes functions spanning multiple lines)
- **nSLOC**: normalized source lines of code (only source-code lines; no comments, no blank lines)
- **Comment Lines**: lines containing single or block comments
- **Complexity Score**: a custom complexity score derived from code statements that are known to introduce code complexity (branches, loops, calls, external interfaces, ...)

# Capabilities

## Components

Contracts	Libraries	Interfaces	Abstract
1	0	4	3

## Exposed Functions

This section lists functions that are explicitly declared public or payable. Please note that getter methods for public stateVars are not included.

Public	Payable
28	3

External	Internal	Private	Pure	View
23	30	2	0	14

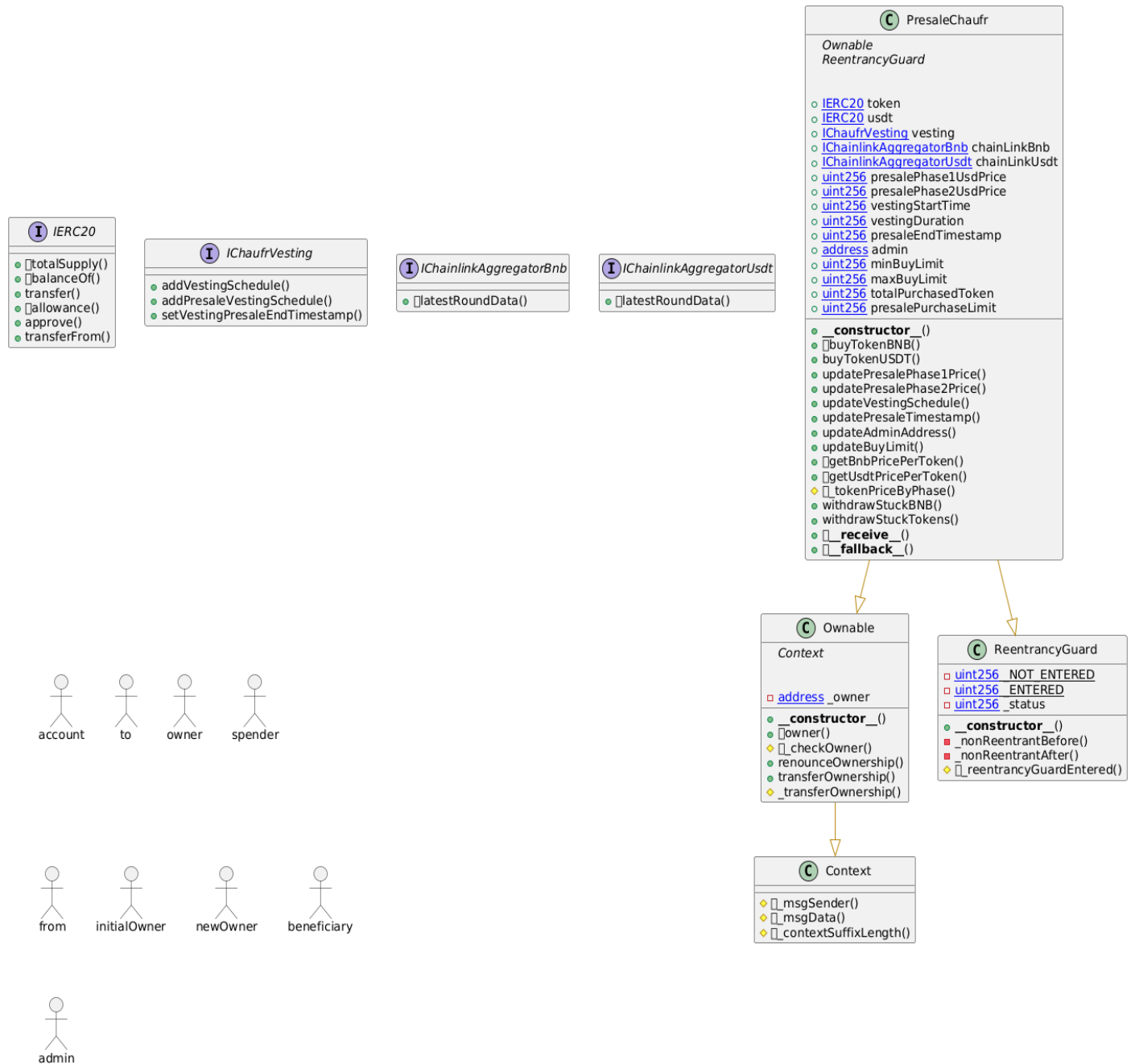
## StateVariables

Total	Public
19	15

## Capabilities

Solidity Versions observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts	
<div><div>^0.8.20</div><div>^0.8.0</div><div>0.8.28</div></div>		yes			
Transfers ETH	Low-Level Calls	DelegateCall	Uses Hash Functions	ECRrecover	New/Create/Create2
yes					

# Unified Modeling Language (UML)



## Functions signature

Function Name	Sighash	Function Signature
totalSupply	18160ddd	totalSupply()
balanceOf	70a08231	balanceOf(address)
transfer	a9059cbb	transfer(address,uint256)
allowance	dd62ed3e	allowance(address,address)
approve	095ea7b3	approve(address,uint256)
transferFrom	23b872dd	transferFrom(address,address,uint256)
owner	8da5cb5b	owner()
renounceOwnership	715018a6	renounceOwnership()
transferOwnership	f2fde38b	transferOwnership(address)
addVestingSchedule	24ef8c1b	addVestingSchedule(address,uint256,uint256,uint256)
addPresaleVestingSchedule	ccc65551	addPresaleVestingSchedule(address,uint256,uint256,uint256)
setVestingPresaleEndTimestamp	0a3cbdd5	setVestingPresaleEndTimestamp(uint256)
latestRoundData	feaf968c	latestRoundData()
buyTokenBNB	f27827b4	buyTokenBNB(uint256)
buyTokenUSDT	b5e75e1c	buyTokenUSDT(uint256)
updatePresalePhase1Price	5ccb48c8	updatePresalePhase1Price(uint256)
updatePresalePhase2Price	0b7ab158	updatePresalePhase2Price(uint256)
updateVestingSchedule	72b320fe	updateVestingSchedule(uint256,uint256)
updatePresaleTimestamp	227640f9	updatePresaleTimestamp(uint256)
updateAdminAddress	85e2381c	updateAdminAddress(address)
updateBuyLimit	983168fc	updateBuyLimit(uint256,uint256)
getBnbPricePerToken	f5bb4f59	getBnbPricePerToken()
getUsdtPricePerToken	74508abc	getUsdtPricePerToken()
withdrawStuckBNB	484ed334	withdrawStuckBNB()
withdrawStuckTokens	cb963728	withdrawStuckTokens(address)

## Automatic general report















### Files Description Table

File Name	SHA-1 Hash
/Users/macbook/Desktop/smart contracts/PresaleChaufr.sol	198fb3829689cb5375cfebd44dd30b7ebcfb30f0

### Contracts Description Table



Contract	Type	Bases	
L	**Function Name**	**Visibility**	**Mutability**
**Modifiers**			
**IERC20**	Interface		
L   totalSupply	External !	NO !	
L   balanceOf	External !	NO !	
L   transfer	External !	NO !	
L   allowance	External !	NO !	
L   approve	External !	NO !	
L   transferFrom	External !	NO !	
**Context**	Implementation		
L   _msgSender	Internal		
L   _msgData	Internal		
L   _contextSuffixLength	Internal		
**Ownable**	Implementation	Context	
L   <Constructor>	Public !	NO !	
L   owner	Public !	NO !	
L   _checkOwner	Internal		
L   renounceOwnership	Public !	onlyOwner	
L   transferOwnership	Public !	onlyOwner	
L   _transferOwnership	Internal		
**ReentrancyGuard**	Implementation		
L   <Constructor>	Public !	NO !	
L   _nonReentrantBefore	Private		
L   _nonReentrantAfter	Private		
L   _reentrancyGuardEntered	Internal		
**IChaufrVesting**	Interface		
L   addVestingSchedule	External !	NO !	
L   addPresaleVestingSchedule	External !	NO !	
L   setVestingPresaleEndTimestamp	External !	NO !	

```

|  **IChainlinkAggregatorBnb** | Interface | |||
|  L | latestRoundData | External ! | NO! |
|  |||||
|  **IChainlinkAggregatorUsdt** | Interface | |||
|  L | latestRoundData | External ! | NO! |
|  |||||
|  **PresaleChaufr** | Implementation | Ownable, ReentrancyGuard |||
|  L | <Constructor> | Public ! |  Ownable |
|  L | buyTokenBNB | External ! |  nonReentrant |
|  L | buyTokenUSDT | External ! |  nonReentrant |
|  L | updatePresalePhase1Price | External ! |  onlyOwner |
|  L | updatePresalePhase2Price | External ! |  onlyOwner |
|  L | updateVestingSchedule | External ! |  onlyOwner |
|  L | updatePresaleTimestamp | External ! |  onlyOwner |
|  L | updateAdminAddress | External ! |  onlyOwner |
|  L | updateBuyLimit | External ! |  onlyOwner |
|  L | getBnbPricePerToken | Public ! | NO! |
|  L | getUsdtPricePerToken | Public ! | NO! |
|  L | _tokenPriceByPhase | Internal  |
|  L | withdrawStuckBNB | External ! |  onlyOwner nonReentrant |
|  L | withdrawStuckTokens | External ! |  onlyOwner nonReentrant |
|  L | <Receive Ether> | External ! |  NO! |
|  L | <Fallback> | External ! |  NO! |

```

### Legend

Symbol	Meaning
:-----:	-----
	Function can modify state
	Function is payable

# Conclusion

The contracts are written systematically. Team found no critical issues. So, it is good to go for production.

Since possible test cases can be unlimited and developer level documentation (code flow diagram with function level description) not provided, for such an extensive smart contract protocol, we provide no such guarantee of future outcomes. We have used all the latest static tools and manual observations to cover maximum possible test cases to scan Everything.

Security state of the reviewed contract is “Well Secured”.

- ✓ No volatile code.
- ✓ No high severity issues were found.

# Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against the team on the basis of what it says or doesn't say, or how team produced it, and it is important for you to conduct your own independent investigations before making any decisions. team go into more detail on this in the below disclaimer below – please make sure to read it in full.

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