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Building the Futuristic Blockchain Ecosystem

SECURITY AUDIT REPORT

Jungle

exôelee

TOKEN OVERVIEW

Risk Findings

Severity	Found
🔴 High	1
🟠 Medium	0
🟡 Low	0
🔵 Informational	0

Centralization Risks

Owner Privileges	Description
🟢 Can Owner Set Taxes >25% ?	Not Detected
🟡 Owner needs to enable trading ?	Yes, owner needs to enable trades
🟢 Can Owner Disable Trades ?	Not Detected
🟢 Can Owner Mint ?	Not Detected
🟢 Can Owner Blacklist ?	Not Detected
🟢 Can Owner set Max Wallet amount ?	Not Detected
🟢 Can Owner Set Max TX amount ?	Not Detected

TABLE OF CONTENTS

OVERVIEW

The Expelee team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analysed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks. According to the smart contract audit:

Audit Result	**Passed**
KYC Verification	**-**
Audit Date	**21 June 2023**

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CONTRACT DETAILS

Token Name: Jungle

Symbol: $JUNGLE

Network: Binance Smart Chain

Language: Solidity

Contract Address:
0xC70407b860C8C38adBF3c3C488706a4857Ac81De

Total Supply: 100,000,000,000

Owner's Wallet:
0x368ffBD1e34EAB57F8bCe0F94F47F02807019d77

Deployer's Wallet:
0x368ffBD1e34EAB57F8bCe0F94F47F02807019d77

Testnet.
https://testnet.bscscan.com/address/0x9246087965CD732
021C7575C2617C9e536f6622F#code

AUDIT METHODOLOGY

Audit Details

Our comprehensive audit report provides a full overview of the audited system's architecture, smart contract codebase, and details on any vulnerabilities found within the system.

Audit Goals

The audit goal is to ensure that the project is built to protect investors and users, preventing potentially catastrophic vulnerabilities after launch , that lead to scams and rugpulls.

Code Quality

Our analysis includes both automatic tests and manual code analysis for the following aspects:

- Exploits
- Back-doors
- Vulnerability
- Accuracy
- Readability

Tools

- DE
- Open Zeppelin
- Code Analyzer
- Solidity Code
- Compiler
- Hardhat

VULNERABILITY CHECKS

Design Logic	Passed
Compiler warnings	Passed
Private user data leaks	Passed
Timestamps dependence	Passed
Integer overflow and underflow	Passed
Race conditions & reentrancy. Cross-function race conditions	Passed
Possible delays in data delivery	Passed
Oracle calls	Passed
Front Running	Passed
DoS with Revert	Passed
DoS with block gas limit	Passed
Methods execution permissions	Passed
Economy model	Passed
Impact of the exchange rate on the logic	Passed
Malicious event log	Passed
Scoping and declarations	Passed
Uninitialized storage pointers	Passed
Arithmetic accuracy	Passed
Cross-function race conditions	Passed
Safe Zepplin module	Passed

RISK CLASSIFICATION

When performing smart contract audits, our specialists look for known vulnerabilities as well as logical and acces control issues within the code. The exploitation of these issues by malicious actors may cause serious financial damage to projects that failed to get an audit in time. We categorize these vulnerabilities by the following levels:

High Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

Medium Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.
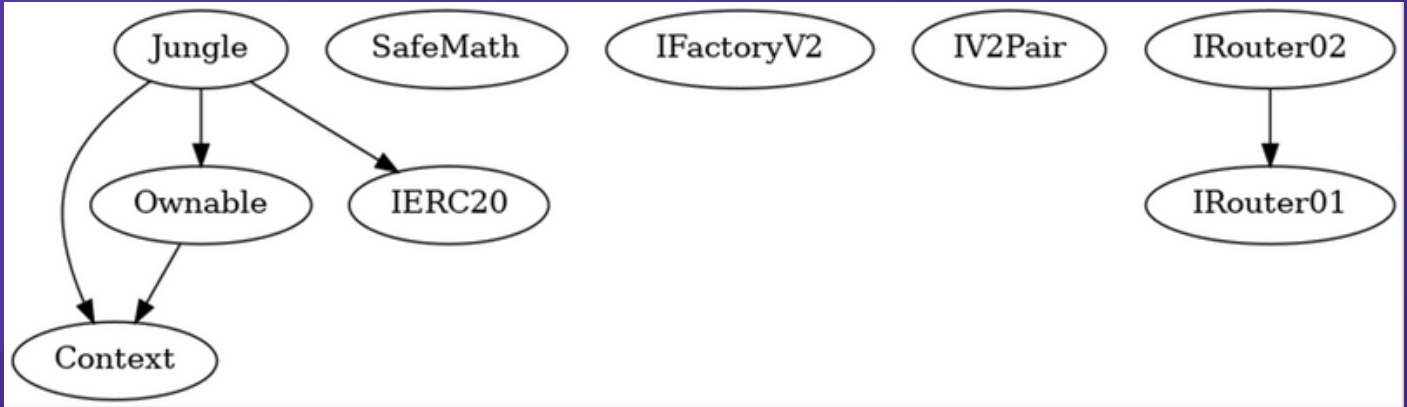
Low Risk

Issues on this level are minor details and warning that can remain unfixed.

Informational

Issues on this level are minor details and warning that can remain unfixed.

INHERITANCE TREES

FUNCTION DETAILS

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
Context	Implementation				
└	\<Constructor\>	Public ❗	🔴 |NO ❗	
└	_msgSender	Internal 🔒			
└	_msgData	Internal 🔒			
Ownable	Implementation	Context			
└	\<Constructor\>	Public ❗	🔴 |NO ❗	
└	owner	Public ❗	|NO ❗	
└	renounceOwnership	Public ❗	🔴	onlyOwner
└	transferOwnership	Public ❗	🔴	onlyOwner
└	_setOwner	Private 🔒	🔴		
SafeMath	Library				
└	add	Internal 🔒			
└	sub	Internal 🔒			
└	sub	Internal 🔒			
└	mul	Internal 🔒			
└	div	Internal 🔒			
└	div	Internal 🔒			
└	mod	Internal 🔒			
└	mod	Internal 🔒			
IFactoryV2	Interface				
└	getPair	External ❗	|NO ❗	
└	createPair	External ❗	🔴 |NO ❗	
IV2Pair	Interface				
└	factory	External ❗	|NO ❗	
└	getReserves	External ❗	|NO ❗	
└	sync	External ❗	🔴 |NO ❗	
IRouter01	Interface				
└	factory	External ❗	|NO ❗	
└	WETH	External ❗	|NO ❗	
└	addLiquidityETH	External ❗	💵 |NO ❗	
└	addLiquidity	External ❗	🔴 |NO ❗	
└	swapExactETHForTokens	External ❗	💵 |NO ❗	
└	getAmountsOut	External ❗	|NO ❗	
└	getAmountsIn	External ❗	|NO ❗	
IRouter02	Interface	IRouter01			
└	swapExactTokensForETHSupportingFeeOnTransferTokens	External ❗	🔴 |NO ❗	
└	swapExactETHForTokensSupportingFeeOnTransferTokens	External ❗	💵 |NO ❗	

FUNCTION DETAILS

└	swapExactTokensForTokensSupportingFeeOnTransferTokens	External ❗	🔴	NO❗
└	swapExactTokensForTokens	External ❗	🔴	NO❗
IERC20	Interface			
└	totalSupply	External ❗		NO❗
└	decimals	External ❗		NO❗
└	symbol	External ❗		NO❗
└	name	External ❗		NO❗
└	getOwner	External ❗		NO❗
└	balanceOf	External ❗		NO❗
└	transfer	External ❗	🔴	NO❗
└	allowance	External ❗		NO❗
└	approve	External ❗	🔴	NO❗
└	transferFrom	External ❗	🔴	NO❗
Jungle	Implementation	Context, Ownable, IERC20		
└	<Receive Ether>	External ❗	💵	NO❗
└	<Constructor>	Public ❗	🔴	NO❗
└	totalSupply	External ❗		NO❗
└	decimals	External ❗		NO❗
└	symbol	External ❗		NO❗
└	name	External ❗		NO❗
└	getOwner	External ❗		NO❗
└	allowance	External ❗		NO❗
└	balanceOf	Public ❗		NO❗
└	transferFrom	External ❗	🔴	NO❗
└	transfer	Public ❗	🔴	NO❗
└	_transfer	Internal 🔒	🔴	
└	checkCommunityWallet	Internal 🔒	🔴	inTxWinnerFlag
└	internalSwap	Public ❗	🔴	NO❗
└	swapTokensForEth	Internal 🔒	🔴	inSwapFlag
└	takeTaxes	Internal 🔒	🔴	
└	approve	External ❗	🔴	NO❗
└	_approve	Internal 🔒	🔴	
└	isBuy	Internal 🔒		
└	isSell	Internal 🔒		
└	isTransfer	Internal 🔒		
└	addLpPair	External ❗	🔴	onlyOwner
└	isExcludedFromFee	External ❗		NO❗
└	increaseCommunityPrize	Public ❗	🔴	NO❗
└	setIsExcludedFromFee	Public ❗	🔴	onlyOwner
└	setMarketingFee	Public ❗	🔴	onlyOwner
└	setCommunityFee	Public ❗	🔴	onlyOwner
└	setCommunityMinimumSeconds	Public ❗	🔴	onlyOwner
└	setSwapThreshold	Public ❗	🔴	onlyOwner
└	getCommunityInfo	Public ❗		NO❗

FUNCTION DETAILS

```
| └ | getLastCommunityWinner | Public ❗ | |NO❗ |
| └ | rescueStuckBEP20 | Public ❗ | 🔴 | onlyOwner |
| └ | rescueStuckETH | Public ❗ | 🔴 | onlyOwner |
| └ | getTotalBurned | Public ❗ | |NO❗ |
| └ | enableTrading | External ❗ | 🔴 | onlyOwner |


### Legend

| Symbol | Meaning |
|:--------:|-----------|
|   🔴    | Function can modify state |
|   🟩    | Function is payable |
```

TESTNET VERSION

Adding Liquidity ✅
Tx:
https://testnet.bscscan.com/tx/0x4499b99644ee54c258c082462f25051664d146b10
6f6cc8949f1fb96771d1008

==

Buying from a fee excluded wallet ✅
Tx (0% tax):
https://testnet.bscscan.com/tx/0x4e1fe63dac43c000660ba836a3bea5ea55dd04063
adfaa4a2e69c84e49229694

==

Selling from a fee excluded wallet ✅
Tx (0% tax):
https://testnet.bscscan.com/tx/0x3f16790eea7ec16f7ffd6fb303a5b563116d38385122
bf7c946f506119fe32c3

==

Transferring using a fee excluded wallet ✅
Tx (0% tax):
https://testnet.bscscan.com/tx/0x692a89ad8d9d0fc46533190886c4a973211ad24c54
f2222b8181d53ed2131902

==

Buying from a regular wallet ✅
Tx (0-8% tax):
https://testnet.bscscan.com/tx/0xa98a8f306f2e86577fb47eca053b8ac7d599dbafcae
abb27f49010d70993cb56

TESTNET VERSION

Selling from a regular wallet ✅
Tx (0-8% tax):
https://testnet.bscscan.com/tx/0x5bd6a96ff8cb3e23a91a02cfdc47b7a37ec3191cf677ca4372527c1147fc5b79

==

Transferring from a regular wallet ✅
Tx (0-8%):
https://testnet.bscscan.com/tx/0xf4d9566311d6d554b006d960e1335a960c6e6eb0d46c465cfaf3f5ebadd9020d

==

Internal swap (Marketing BNB) ✅
Tx:
https://testnet.bscscan.com/address/0x368ffbd1e34eab57f8bce0f94f47f02807019d77#tokentxns

MANUAL REVIEW

Severity Criteria

Expelee assesses the severity of disclosed vulnerabilities according to methodology based on OWASP standarts.

Vulnerabilities are dividend into three primary risk categroies:
High
Medium
Low

High-level considerations for vulnerabilities span the following key areas when conducting assessments:

- Malicious input handling
- Escalation of privileges
- Arithmetic
- Gas use

		Overall Risk Severity		
	HIGH	Medium	High	Critical
Impact	MEDIUM	Low	Medium	High
	LOW	Note	Low	Medium
		LOW	MEDIUM	HIGH
		Likelihood		

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HIGH RISK FINDING

Enabling trades is not guaranteed

Category: **Centralization**
Status: Partially Resolved
Severity: **High**

Overview:

Owner must enable trades for investors manually. If trades remain disabled, holders wont be able to trade their tokens.

Trades will be enabled automatically after 10 days after creation of the contract. Impact of this issue still depends on starting and ending date of the presale or launch.

```
function enableTrading() external onlyOwner {
require(!isTradingEnabled, "Trading already enabled");
    isTradingEnabled = true;
    emit TradingEnabled();
}
```

HIGH RISK FINDING

 Enabling trades is not guaranteed

Suggestion:

There are multiple ways to resolve this issue:

•Enable trades prior to launch or presale : this ensurs that trades are already enabled forver and can not be disabled later. However, this completely negates the need for enableTrading function.

•Transfer Ownership of the contract to a trusted 3rd party: You can transfer ownership of the contract to a trusted 3rd party e.g a certified pinksale safu developer

•Create a time lock contract for enabling trades: this contract can enable trades after a fixed period of time. (Applied)

ABOUT EXPELEE

Expelee is a product-based aspirational Web3 start-up. Coping up with numerous solutions for blockchain security and constructing a Web3 ecosystem from deal making platform to developer hosting open platform, while also developing our own commercial and sustainable blockchain.

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