

Building the Futuristic Blockchain Ecosystem

SECURITY AUDIT REPORT

FLINTSTONES



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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	No
Audit Date	1 May 2023



CONTRACT DETAILS

Token Name: FlintStones

Symbol: FlintStones

Network: Binance Smart Chain

Language: Solidity

Contract Address:

0xf147A1784a29Cd4716ff46cb8e7C79081D3da6e2

Total Supply: 10,000,000,000

Contract SHA-256 Checksum:

2c09f78e163ab26b939ee394bb5e5891969b4535

Owner's Wallet:

0x2D4f286976A4A3D1605BE7d28f928F056Be4E915

Deployer's Wallet:

0x2D4f286976A4A3D1605BE7d28f928F056Be4E915

Testnet:

https://testnet.bscscan.com/address/0xc816974Ba83734d

835616024E1120aCB7fDedD80



OWNER PRIVILEGES

- Contract owner is not able to set buy/sell taxes over 8% each
- Contract owner is not able to set transfer tax (0% tax)
- Contract is using pinksale anti-bot
- Contract owner is able to disable/enable anti-bot
- Contract owner must enable trades for holders manually
- Contract gives BNB rewards to holderes
- · Contract owner is not able to blacklist an arbitrary wallet
- · Contract owner is not able to disable trades/transfers
- Contract owner is not able to mint new tokens

Tx (0% tax):



TESTNET VERSION

Adding Liquidity Tx: https://testnet.bscscan.com/tx/0x73131fdffc60216aa171ddf3b2 b7b695030e1ffa3d32cb38d726d0c8fe23b279 Buying from a fee excluded wallet < Tx (0% tax): https://testnet.bscscan.com/tx/0xfcd2f462bf2da40c66674b3 a8757702ab5c292e8c3c79f40adb7005cfbb96196 Selling from a fee excluded wallet 🗸 Tx (0% tax): https://testnet.bscscan.com/tx/0x4d62fad3f5f80735d7172da1 6100a26d97297541ff2a5b9f705948e366ad9b36 Transferring using a fee excluded wallet

https://testnet.bscscan.com/tx/0x64f25e56df0bbbc450ea0a6a9652ff2301d3c8c7da59d5993427b7b9a6430da1



TESTNET VERSION

Buying from a regular wallet Tx (up to 8% tax): https://testnet.bscscan.com/tx/0x870ee6626fcfbb838f4f9d3 8923c6f69687e1bc29d7f7f95266a56c40addb241				
Selling from a regular wallet 🗸				
Tx (up to 8% tax):				
nttps://testnet.bscscan.com/tx/0xb68be1936d5c5d56ec3d8				
401e8728c63eec3e45b3e400be5beb0a03154d0f14				
Internal swap (marketing BNB and Rewards distribution) <a>Tx (0% tax):				
https://testnet.bscscan.com/tx/0xb68be1936d5c5d56ec3d88				
401e8728c63eec3e45b3e400be5beb0a03154d0f14				



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

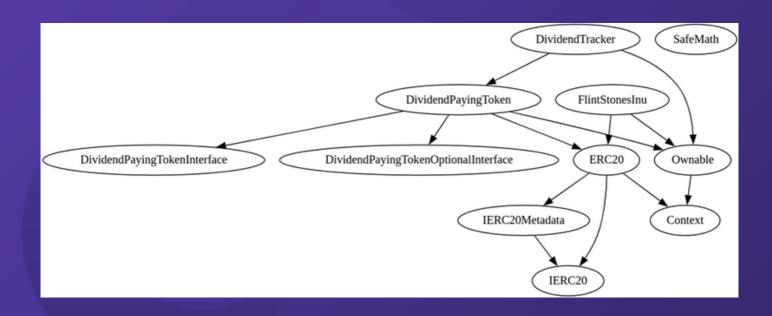
Issues on this level are minor details and warning that can remain unfixed.

Informational

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



INHERITANCE TREES







Contract Assesment

```
Bases
       | **Function Name** | **Visibility** | **Mutability** | **Modifiers** |
**Context** | Implementation | |||
📙 msgSender | Internal 🔒 | ||
L|_msgData|Internal 🔒 | ||
**Ownable** | Implementation | Context |||
| Constructor | Public | | | NO | |
| owner | Public | | NO | |
| renounceOwnership | Public | | | | onlyOwner |
L | transferOwnership | Public | | | | onlyOwner |
L| transferOwnership | Internal 🔒 | 🛑 | |
**SafeMath** | Library | |||
L | add | Internal 🔒 | | |
📙 sub | Internal 🔒 | |
📙 sub | Internal 🔒 | |
📙 mul | Internal 🔒 | |
L | div | Internal 🔒 | ||
L | div | Internal 🔒 | | |
📙 mod | Internal 🔒 |
L| mod | Internal 🔒 | ||
**SafeMathInt** | Library | |||
L|mul|Internal 🔒 | ||
L | div | Internal 🔒 | | |
📙 sub | Internal 🔒 | |
L|add|Internal 🔒 | ||
```



```
L | abs | Internal 🔒 | ||
L | toUint256Safe | Internal 🔒 | | |
**SafeMathUint** | Library | |||
L | toInt256Safe | Internal 🔒 | | |
**IterableMapping** | Library | |||
L | get | Internal 🔒 | | |
L | getIndexOfKey | Internal 🔒 | ||
└ | getKeyAtIndex | Internal 🔒 | ||
L | size | Internal 🔒 | ||
L | set | Internal 🔒 | 🛑 ||
L | remove | Internal 🔒 | 🛑 | |
***IUniswapV2Factory** | Interface | |||
L | feeTo | External | | NO | |
L | feeToSetter | External | NO | |
L | getPair | External | | NO | |
L | allPairs | External | NO | |
L | allPairsLength | External | | NO | |
L | createPair | External | | 🌘 | NO | |
L | setFeeTo | External | | | NO | |
L | setFeeToSetter | External | | | NO | |
**IUniswapV2Pair** | Interface | |||
L | name | External | | NO | |
L | symbol | External | | NO ! |
L | decimals | External | | NO | |
L | totalSupply | External | NO |
L|balanceOf|External | | NO | |
L | allowance | External | | NO | |
L | approve | External 📗 | 🌑 | NO 📗 |
L | transfer | External 📗 | 🧶 | NO 📗 |
L | transferFrom | External | | | NO | |
L | DOMAIN SEPARATOR | External | | NO | |
L | PERMIT_TYPEHASH | External | | NO | |
| nonces | External | | NO | |
L | permit | External | | | NO | |
L | MINIMUM_LIQUIDITY | External | | NO | |
L | factory | External | | NO | |
L | token0 | External | | NO |
L | token1 | External | | NO |
L | getReserves | External | | NO | |
| price0CumulativeLast | External | NO | |
| price1CumulativeLast | External | NO | |
L | kLast | External | | NO | |
```



```
| L | mint | External | | 🛑 | NO |
 L|burn|External | | | NO |
 L | swap | External | |
                         NO
 L | skim | External | | | NO |
 L | sync | External | | | NO |
 L | initialize | External | | | NO |
**IUniswapV2Router01** | Interface | |||
 L | factory | External | | NO | |
 L | WETH | External | | NO | |
 L | addLiquidity | External | | | NO | |
 L | addLiquidityETH | External | | 💵 |NO | |
 L | removeLiquidity | External | | | NO | |
 L | removeLiquidityETH | External | | | NO | |
 | removeLiquidityWithPermit | External | | | NO | |
 | removeLiquidityETHWithPermit | External | | | NO | |
 L | swapExactTokensForTokens | External | | | NO |
 L | swapTokensForExactTokens | External | | | NO | |
 | swapExactETHForTokens | External | | 1 NO |
 | swapTokensForExactETH | External
 | swapExactTokensForETH | External | | | | NO |
 L | swapETHForExactTokens | External | | 💶 | NO 📗 |
 L | quote | External | | NO | |
 L | getAmountOut | External | NO | |
 L | getAmountIn | External | | NO |
 L | getAmountsOut | External | | NO | |
 L | getAmountsIn | External | NO | |
 **IUniswapV2Router02** | Interface | IUniswapV2Router01 ||
 removeLiquidityETHSupportingFeeOnTransferTokens | External | | • NO |
 | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External | | | | | NO |
 L | swapExactTokensForTokensSupportingFeeOnTransferTokens | External | | • NO | |
 📙 swapExactETHForTokensSupportingFeeOnTransferTokens | External 📗 💶 NO 📗
 | swapExactTokensForETHSupportingFeeOnTransferTokens | External | | | NO |
**IPinkAntiBot** | Interface | |||
 L | setTokenOwner | External | | | NO |
 L | onPreTransferCheck | External | | | NO | |
**IERC20** | Interface | |||
 L | totalSupply | External | NO | |
 L | balanceOf | External | NO | |
 L | allowance | External | | NO |
 L | transfer | External | | | NO | |
 L | approve | External | | | NO | |
```



```
| L | transferFrom | External | | | NO | |
 **Address** | Library | ||
 L | isContract | Internal 🔒 | | |
 L | sendValue | Internal 🔒 | 🛑 | |
 L | functionCall | Internal 🔒 | 🛑 | |
 L | functionCall | Internal 🔒 | 🛑 | |
 📙 | functionCallWithValue | Internal 🔒 | 🛑 | |
 L | functionCallWithValue | Internal 🔒 | 🛑 | |
 L | functionCallWithValue | Private 🔐 | 🛑 | |
 **IERC20Metadata** | Interface | IERC20 |||
 L | name | External | | NO |
 L | symbol | External | | NO | |
 L | decimals | External | | NO | |
 **ERC20** | Implementation | Context, IERC20, IERC20Metadata ||
 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 | |
 📙 transfer | Internal 🔒 | 🛑 | |
 L | _mint | Internal 🔒 | 🛑 ||
 L| burn | Internal 🔒 | 🛑 ||
 L | _approve | Internal 🔒 | 🛑 | |
 📙 beforeTokenTransfer | Internal 🔒 | 🛑 | |
 **DividendPayingTokenInterface** | Interface | |||
 L | dividendOf | External | | NO | |
 | withdrawDividend | External | | | NO | |
 **DividendPayingTokenOptionalInterface** | Interface | ||
 | withdrawableDividendOf | External | | NO | |
 | withdrawnDividendOf | External | NO | |
 L | accumulativeDividendOf | External | NO | |
**DividendPayingToken** | Implementation | ERC20, Ownable, DividendPayingTokenInterface,
DividendPayingTokenOptionalInterface |||
| L | <Constructor> | Public | | | | ERC20 |
```



```
| | <Receive Ether> | External | | | NO | |
L | distributeDividends | Public | | • | onlyOwner |
| withdrawDividend | Public | | | NO | |
L|_withdrawDividendOfUser|Internal 🔒 | 🛑 ||
L | dividendOf | Public | | NO | |
| withdrawableDividendOf | Public | NO | |
| withdrawnDividendOf | Public | NO | |
L | accumulativeDividendOf | Public | NO | |
📙 transfer | Internal 🔒 | 🛑 | |
📙 mint | Internal 🔒 | 🛑 ||
L| burn|Internal 🔒 | 🛑 ||
L | _setBalance | Internal 🔒 | 🛑 | |
**DividendTracker** | Implementation | Ownable, DividendPayingToken ||
| Constructor | Public | | | DividendPayingToken |
📙 transfer | Internal 🔒 | ||
| withdrawDividend | Public | NO | |
📙 updateMinimumTokenBalanceForDividends | External 📗 | 🌘 | onlyOwner |
L | excludeFromDividends | External | | • onlyOwner |
L | updateClaimWait | External | | | onlyOwner |
L | setLastProcessedIndex | External | | | onlyOwner |
| getLastProcessedIndex | External | NO | |
| getNumberOfTokenHolders | External | NO | |
L | getAccount | Public | | NO | |
L | getAccountAtIndex | Public | | NO | |
L | canAutoClaim | Private 🔐 | | |
L | setBalance | External | | 🛑 | onlyOwner |
L | process | Public | | 🛑 | NO | |
L | processAccount | Public | | • | onlyOwner |
**FlintStonesInu** | Implementation | ERC20, Ownable |||
L | <Constructor> | Public | | | | ERC20 |
L | <Receive Ether> | External 📗 | 💶 |NO 📗 |
L | claimStuckTokens | External | | | lonlyOwner |
L | excludeFromFees | External | | | | onlyOwner |
| isExcludedFromFees | Public | NO | |
L | updateBuyFees | External 📘 | 🛑 | onlyOwner |
L|updateSellFees|External | | 🌑 | onlyOwner|
| changeMarketingWallet | External | | | onlyOwner |
L | enableTrading | External | | | | onlyOwner |
L | setEnableAntiBot | External 📗 | 🛑 | onlyOwner |
📙 transfer | Internal 🔒 | 🛑 | |
L | swapAndSendDividends | Private 🔐 | 🛑 | |
L | setSwapTokensAtAmount | External | | 🛑 | onlyOwner |
L | updateDividendTracker | Public | | | | onlyOwner |
L | updateGasForProcessing | Public | | | | onlyOwner |
```



```
| updateMinimumBalanceForDividends | External | | | | onlyOwner |
 | updateClaimWait | External | | | | onlyOwner |
 L | getClaimWait | External | | NO | |
 | getTotalDividendsDistributed | External | NO | |
 | withdrawableDividendOf | Public | NO |
 L | dividendTokenBalanceOf | Public | NO |
 L | totalRewardsEarned | Public | | NO | |
 L | excludeFromDividends | External | | • | onlyOwner |
 | getAccountDividendsInfo | External | NO | | | | |
 | getAccountDividendsInfoAtIndex | External | NO | |
 | processDividendTracker | External | | | NO | |
| L | claim | External | | | NO | |
 L | claimAddress | External | | | onlyOwner |
 | getLastProcessedIndex | External | NO |
 L | setLastProcessedIndex | External | | • | onlyOwner |
 | getNumberOfDividendTokenHolders | External | NO | |
Legend
| Symbol | Meaning |
       | Function can modify state |
      | Function is payable |
```



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				
Impact	LOW	Note	Low	Medium				
		LOW	MEDIUM	HIGH				
	Likelihood							



FINDINGS

Findings	Severity	Found
High Risk	High	2
Medium Risk	Medium	0
Low Risk	Low	0
Suggestion & discussion	Informational	0
Gas Optimizations	● Gas Opt.	1



HIGH RISK FINDING

Category: Centralization

Impact: High

Subject: Enabling trades is not guaranteed

Overview:

The owner of the contract must enable trades for public, otherwise no one would be able to buy/sell/transfer their tokens except whitelisted wallets.

```
function enableTrading() external onlyOwner {
tradingEnabled = true;
}
```

Suggestion

To mitigate this issue there are several options:

- Temporary transfer ownership of the contract to a pinksale safu developer
- Enable tradings before presale

Issue Status: Open



HIGH RISK FINDING

Category: Logical

Impact: High

Subject: DividendDistributor is upgradeable

Overview:

The contract owner has the ability to change the DividendDistributor to a new address. If the new address does not adhere to the interface of the current DividendDistributor, or if the new contract consumes an excessive amount of gas, buy/sell/transfer could become disabled.

```
function updateDividendTracker(address newAddress) public onlyOwner {
    require(
    newAddress != address(dividendTracker),
    "The dividend tracker already has that address"
    );
    /// rest of the code

dividendTracker = newDividendTracker;
}
```



SUGGESTIONS

To mitigate this issue there are several options:

- Disable the upgradeability of the dividend tracker.
- Implement safety checks to ensure that the new dividend tracker adheres to the current interface and does not consume an excessive amount of gas.
- Introduce a multi-signature approval mechanism for updating the DividendDistributor to reduce the risk of a single point of failure.
- Allow the community to vote on the proposed new DividendDistributor through a decentralized governance process.
- Set up a timelock for upgrading the DividendDistributor, providing a window for users to review and react to the proposed change.
- Develop a testing suite and perform thorough testing of the new dividend tracker contract before deployment to ensure compatibility and gas efficiency.

Issue Status: Open



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.

www.expelee.com

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