



Cyberscope

Audit Report

Learn Fast Earn

January 2023

Type BEP20

Network BSC

Address 0xC98fbc02481E2819bbdffbaEd2d5371e03C1668c

Audited by © cyberscope

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Review

| | |
|-------------------------|---|
| Contract Name | Lefaearn |
| Compiler Version | v0.8.2+commit.661d1103 |
| Optimization | 200 runs |
| Explorer | https://bscscan.com/address/0xc98fbc02481e2819bbdffbaed2d5371e03c1668c |
| Address | 0xc98fbc02481e2819bbdffbaed2d5371e03c1668c |
| Network | BSC |
| Symbol | LFE |
| Decimals | 18 |
| Total Supply | 1,000,000,000 |

Audit Updates

| | |
|----------------------|-------------|
| Initial Audit | 26 Jan 2023 |
|----------------------|-------------|

Source Files

| Filename | SHA256 |
|--------------------------|--|
| BEP20.sol | 43074670094e163ae48b7e28f8820d19cddf55e1d25ce8a9a42363f1d0bab997 |
| BEP20Detailed.sol | 4d76ac74c62c4cbe9586f91d5a61e9e227f4d7de52bb73c7d1fbbcc13e102b0b |
| BEPContext.sol | 185ab131dbfb7cc3708c4c2ebb68626cb502b9510124ac7d3e46bb972225fa87 |
| BEPOwnable.sol | 59aec88037f20e56a5a7a8654a74aa22af9a8e0ea2f4b1d93e6e4940881d35dc |
| IBEP20.sol | fea064f649beb16e53397c123320dae4893c21c617173a690a1f4b205619d2dd |
| Lefaeearn.sol | 5b4234fffe8a5234d57a89397294f7ced6e9e10eceedbaa22c239e4aac3a49ac |
| SafeMath.sol | 54c45fe70d055bf830151e348f337048c0c679d73bf7dae71b0a7c86720d5d8a |

Analysis

● Critical ● Medium ● Minor / Informative ● Pass

| Severity | Code | Description | Status |
|----------|------|------------------------------------|------------|
| ● | ST | Stops Transactions | Passed |
| ● | OCTD | Transfers Contract's Tokens | Passed |
| ● | OTUT | Transfers User's Tokens | Passed |
| ● | ELFM | Exceeds Fees Limit | Passed |
| ● | ULTW | Transfers Liquidity to Team Wallet | Passed |
| ● | MT | Mints Tokens | Passed |
| ● | BT | Burns Tokens | Passed |
| ● | BC | Blacklists Addresses | Unresolved |

BC - Blacklists Addresses

| | |
|--------------------|------------------|
| Criticality | Medium |
| Location | Lefaearn.sol#L41 |
| Status | Unresolved |

Description

The contract owner has the authority to stop addresses from transactions. The owner may take advantage of it by calling the `blackList` function.

```
function blackList(address _wallet, bool _status) external onlyOwner {  
    isBlacklist[_wallet]= _status;  
    emit changeBlacklist(_wallet, _status);  
}
```

Recommendation

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

Diagnostics

● Critical ● Medium ● Minor / Informative

| Severity | Code | Description | Status |
|----------|------|--|------------|
| ● | L04 | Conformance to Solidity Naming Conventions | Unresolved |
| ● | L09 | Dead Code Elimination | Unresolved |
| ● | L11 | Unnecessary Boolean equality | Unresolved |
| ● | L16 | Validate Variable Setters | Unresolved |
| ● | L19 | Stable Compiler Version | Unresolved |

L04 - Conformance to Solidity Naming Conventions

| | |
|--------------------|---|
| Criticality | Minor / Informative |
| Location | Lefaearn.sol#L22,23,24,25,26,27,41,46,51,56,61,75 |
| Status | Unresolved |

Description

The Solidity style guide is a set of guidelines for writing clean and consistent Solidity code. Adhering to a style guide can help improve the readability and maintainability of the Solidity code, making it easier for others to understand and work with.

The followings are a few key points from the Solidity style guide:

1. Use camelCase for function and variable names, with the first letter in lowercase (e.g., myVariable, updateCounter).
2. Use PascalCase for contract, struct, and enum names, with the first letter in uppercase (e.g., MyContract, UserStruct, ErrorEnum).
3. Use uppercase for constant variables and enums (e.g., MAX_VALUE, ERROR_CODE).
4. Use indentation to improve readability and structure.
5. Use spaces between operators and after commas.
6. Use comments to explain the purpose and behavior of the code.
7. Keep lines short (around 120 characters) to improve readability.


```
event changeBlacklist(address _wallet, bool status);
event changeCooldown(uint8 tradeCooldown);
event changeTax(uint8 _sellTax, uint8 _buyTax, uint8 _transferTax);
event changeLiquidityPoolStatus(address lpAddress, bool status);
event changeMarketingPool(address marketingPool);
event changeWhitelistTax(address _address, bool status);
bool _status
address _wallet
uint8 _tradeCooldown
address _lpAddress
address _marketingPool
uint8 _transferTax
uint8 _sellTax
uint8 _buyTax
...
```

Recommendation

By following the Solidity naming convention guidelines, the codebase increased the readability, maintainability, and makes it easier to work with.

Find more information on the Solidity documentation

<https://docs.soliditylang.org/en/v0.8.17/style-guide.html#naming-convention>.

L09 - Dead Code Elimination

| | |
|--------------------|---------------------|
| Criticality | Minor / Informative |
| Location | BEP20.sol#L90,111 |
| Status | Unresolved |

Description

In Solidity, dead code is code that is written in the contract, but is never executed or reached during normal contract execution. Dead code can occur for a variety of reasons, such as:

- Conditional statements that are always false.
- Functions that are never called.
- Unreachable code (e.g., code that follows a return statement).

Dead code can make a contract more difficult to understand and maintain, and can also increase the size of the contract and the cost of deploying and interacting with it.

```
function _burn(address account, uint256 amount) internal {  
    require(account != address(0), "BEP20: burn from the zero address");  
  
    _balances[account] = _balances[account].sub(amount, "BEP20: burn amount exceeds  
balance");  
    _totalSupply = _totalSupply.sub(amount);  
    emit Transfer(account, address(0), amount);  
}  
  
...
```

Recommendation

To avoid creating dead code, it's important to carefully consider the logic and flow of the contract and to remove any code that is not needed or that is never executed. This can help improve the clarity and efficiency of the contract.

L11 - Unnecessary Boolean equality

| | |
|--------------------|---------------------|
| Criticality | Minor / Informative |
| Location | Lefaearn.sol#L85,88 |
| Status | Unresolved |

Description

Boolean equality is unnecessary when comparing two boolean values. This is because a boolean value is either true or false, and there is no need to compare two values that are already known to be either true or false.

it's important to be aware of the types of variables and expressions that are being used in the contract's code, as this can affect the contract's behavior and performance. The comparison to boolean constants is redundant. Boolean constants can be used directly and do not need to be compared to true or false.

```
liquidityPool[sender] == true  
liquidityPool[receiver] == true
```

Recommendation

Using the boolean value itself is clearer and more concise, and it is generally considered good practice to avoid unnecessary boolean equalities in Solidity code.

L16 - Validate Variable Setters

| | |
|--------------------|---------------------|
| Criticality | Minor / Informative |
| Location | Lefaearn.sol#L57 |
| Status | Unresolved |

Description

The contract performs operations on variables that have been configured on user-supplied input. These variables are missing of proper check for the case where a value is zero. This can lead to problems when the contract is executed, as certain actions may not be properly handled when the value is zero.

```
marketingPool = _marketingPool
```

Recommendation

By adding the proper check, the contract will not allow the variables to be configured with zero value. This will ensure that the contract can handle all possible input values and avoid unexpected behavior or errors. Hence, it can help to prevent the contract from being exploited or operating unexpectedly.

L19 - Stable Compiler Version

| | |
|--------------------|--|
| Criticality | Minor / Informative |
| Location | SafeMath.sol#L3 Lefaeearn.sol#L2 IBEP20.sol#L3 BEPOwnable.sol#L3 BEPContext.sol#L3 BEP20Detailed.sol#L3 BEP20.sol#L3 |
| Status | Unresolved |

Description

The `^` symbol indicates that any version of Solidity that is compatible with the specified version (i.e., any version that is a higher minor or patch version) can be used to compile the contract. The version lock is a mechanism that allows the author to specify a minimum version of the Solidity compiler that must be used to compile the contract code. This is useful because it ensures that the contract will be compiled using a version of the compiler that is known to be compatible with the code.

```
pragma solidity ^0.8.2;
```

Recommendation

The team is advised to lock the pragma to ensure the stability of the codebase. The locked pragma version ensures that the contract will not be deployed with an unexpected version. An unexpected version may produce vulnerabilities and undiscovered bugs. The compiler should be configured to the lowest version that provides all the required functionality for the codebase. As a result, the project will be compiled in a well-tested LTS (Long Term Support) environment.

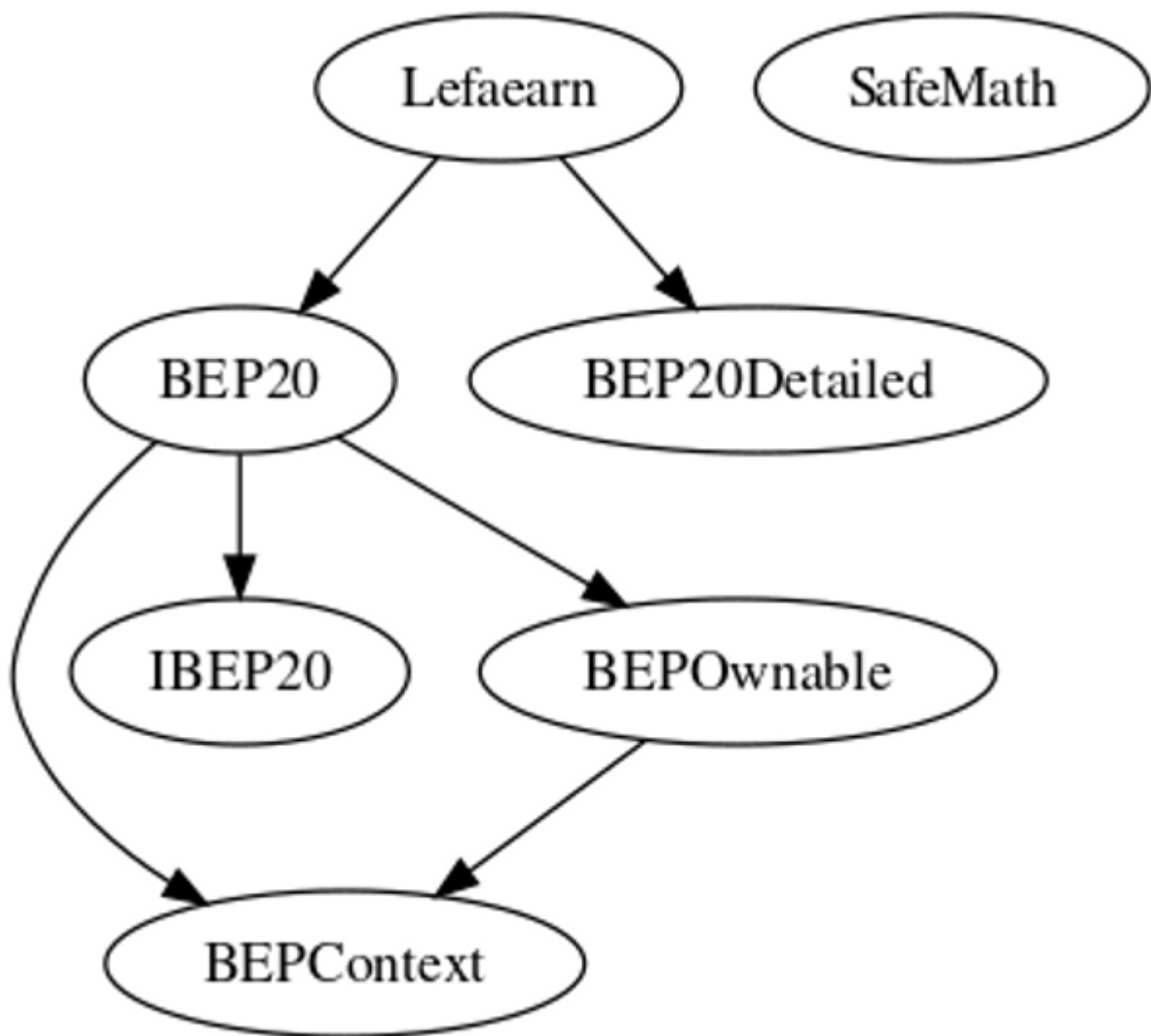
Functions Analysis

| Contract | Type | Bases | | |
|----------------------|-------------------|---|------------|-----------|
| | Function Name | Visibility | Mutability | Modifiers |
| | | | | |
| BEP20 | Implementation | BEPContext , IBEP20, BEPOwnabl e | | |
| | totalSupply | Public | | - |
| | balanceOf | Public | | - |
| | transfer | Public | ✓ | - |
| | allowance | Public | | - |
| | approve | Public | ✓ | - |
| | transferFrom | Public | ✓ | - |
| | increaseAllowance | Public | ✓ | - |
| | decreaseAllowance | Public | ✓ | - |
| | _transfer | Internal | ✓ | |
| | _mint | Internal | ✓ | |
| | _burn | Internal | ✓ | |
| | _approve | Internal | ✓ | |
| | _burnFrom | Internal | ✓ | |
| | | | | |
| BEP20Detailed | Implementation | | | |
| | | Public | ✓ | - |
| | name | Public | | - |
| | symbol | Public | | - |
| | decimals | Public | | - |
| | | | | |
| BEPContext | Implementation | | | |

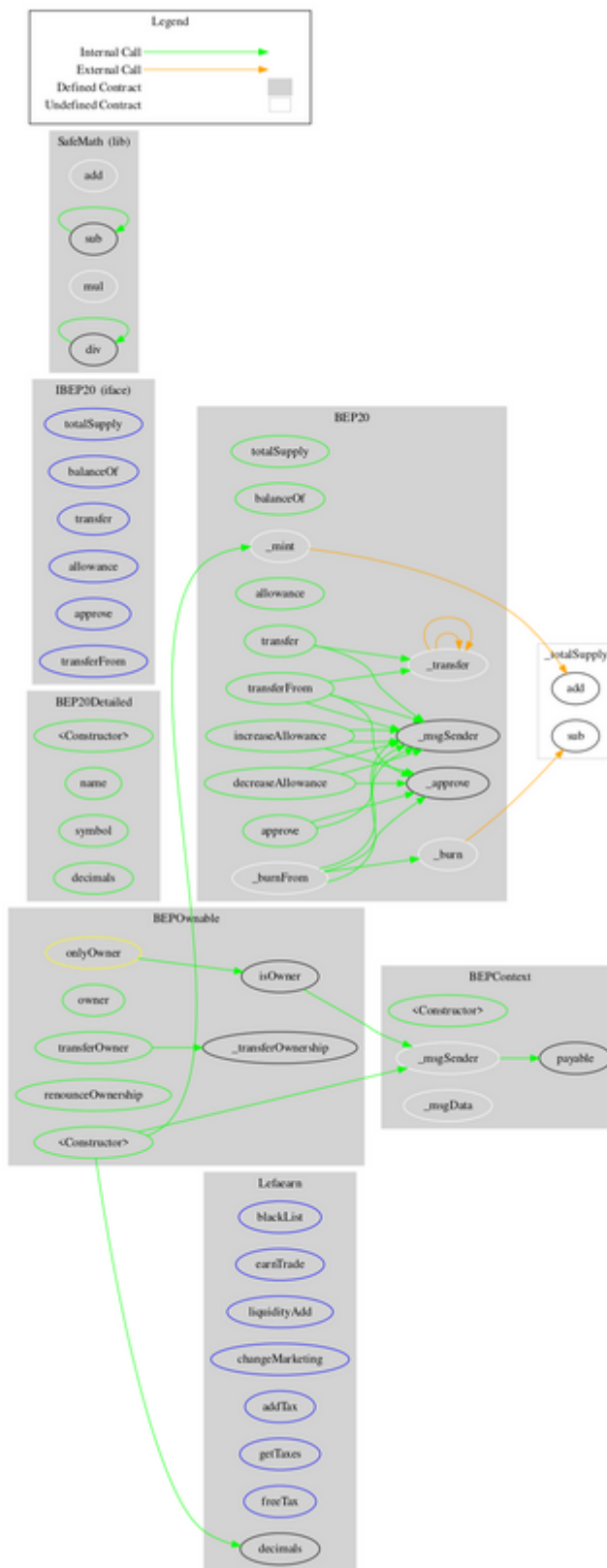
| | | | | |
|-------------------|--------------------|----------------------|---|---------------|
| | | Public | ✓ | - |
| | _msgSender | Internal | | |
| | _msgData | Internal | | |
| | | | | |
| BEPOwnable | Implementation | BEPContext | | |
| | | Public | ✓ | - |
| | owner | Public | | - |
| | isOwner | Public | | - |
| | renounceOwnership | Public | ✓ | onlyOwner |
| | transferOwner | Public | ✓ | onlyOwner |
| | _transferOwnership | Internal | ✓ | |
| | | | | |
| IBEP20 | Interface | | | |
| | totalSupply | External | | - |
| | balanceOf | External | | - |
| | transfer | External | ✓ | - |
| | allowance | External | | - |
| | approve | External | ✓ | - |
| | transferFrom | External | ✓ | - |
| | | | | |
| Lefaeearn | Implementation | BEP20Detailed, BEP20 | | |
| | | Public | ✓ | BEP20Detailed |
| | blackList | External | ✓ | onlyOwner |
| | earnTrade | External | ✓ | onlyOwner |
| | liquidityAdd | External | ✓ | onlyOwner |
| | changeMarketing | External | ✓ | onlyOwner |
| | addTax | External | ✓ | onlyOwner |
| | getTaxes | External | | - |
| | freeTax | External | ✓ | onlyOwner |

| | | | | |
|-----------------|-----------|----------|---|--|
| | _transfer | Internal | ✓ | |
| | | | | |
| SafeMath | Library | | | |
| | add | Internal | | |
| | sub | Internal | | |
| | sub | Internal | | |
| | mul | Internal | | |
| | div | Internal | | |
| | div | Internal | | |

Inheritance Graph



Flow Graph



Summary

There are some functions that can be abused by the owner like blacklist addresses. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats. Additionally, it should be noted that the owner can restrict users to selling only once in a time period of up to 8.5 minutes.

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Cyberscope is a blockchain cybersecurity company that was founded with the vision to make web3.0 a safer place for investors and developers. Since its launch, it has worked with thousands of projects and is estimated to have secured tens of millions of investors' funds.

Cyberscope is one of the leading smart contract audit firms in the crypto space and has built a high-profile network of clients and partners.



The Cyberscope team

<https://www.cyberscope.io>