Cyberscope

Audit Report

BFC Smart Contract

February 2023

Type	BEP20
Network	BSC
Address	0x3c5BA38b4F3A62a48c7EeEAc33dA67fEA57a1e8c
Audited by	© cyberscope

Table of Contents

Table of Contents 1

Review 3

Audit Updates 3

Source Files 3

Analysis 4

ST - Stops Transactions 5

Description 5

Recommendation 5

Diagnostics 6

PRI - Pair Reserves Inconsistency 7

Description 7

Recommendation 7

CO - Code Optimization 8

Description 8

Recommendation 8

RSML - Redundant SafeMath Library 9

Description 9

Recommendation 9

L02 - State Variables could be Declared Constant 10

Description 10

Recommendation 10

L04 - Conformance to Solidity Naming Conventions 11

Description 11

Recommendation 12

L06 - Missing Events Access Control 13

Description 13

Recommendation 13

L13 - Divide before Multiply Operation 14

Description 14

Recommendation 14

L19 - Stable Compiler Version 15

Description 15

Recommendation	15
L22 - Potential Locked Ether	16
Description	16
Recommendation	16
Functions Analysis	17
Inheritance Graph	22
Flow Graph	23
Summary	24
Disclaimer	25
About Cyberscope	26

Review

Contract Name	EDAO
Compiler Version	v0.8.18+commit.87f61d96
Optimization	200 runs
Explorer	https://bscscan.com/address/0x3c5ba38b4f3a62a48c7eeeac33da67fea57a1e8c
Address	0x3c5ba38b4f3a62a48c7eeeac33da67fea57a1e8c
Network	BSC
Symbol	EDAO
Decimals	18
Total Supply	20,000,000,000

Audit Updates

Initial Audit	06 Feb 2023

Source Files

Filename	SHA256
EDAO.sol	1b38aada280b034c193601c97517c33c820526e144d10936c65fb9466065c2a7

Analysis

● Critical ● Medium ● Minor / Informative ● Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Unresolved
●	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	Passed

ST - Stops Transactions

Criticality	Medium
Location	EDAO.sol#L795
Status	Unresolved

Description

The contract owner has the authority to stop the sales for all users excluding the owner. The owner may take advantage of it by setting the `isSwap` to true.

```
function setSwap() public onlyOwner {
    isSwap = !isSwap;
}
...
if( sender == address(uniswapV2Pair)){
    require(!isSwap, "can not buy");
}
```

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
●	PRI	Pair Reserves Inconsistency	Unresolved
●	CO	Code Optimization	Unresolved
●	RSML	Redundant SafeMath Library	Unresolved
●	L02	State Variables could be Declared Constant	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L06	Missing Events Access Control	Unresolved
●	L13	Divide before Multiply Operation	Unresolved
●	L19	Stable Compiler Version	Unresolved
●	L22	Potential Locked Ether	Unresolved

PRI - Pair Reserves Inconsistency

Criticality	Minor / Informative
Location	EDAO.sol#L832
Status	Unresolved

Description

During transaction the contract fees are being added to the `uniswapV2Pair` balance. However, this approach has the potential to create an arbitrage opportunity for users. As a result, users may be able to take advantage of this to make a profit.

```
function _takeLPFee(address sender,uint256 tAmount,uint256 _Fee) private {
    uint256 LPAmount = 0;
    if(_tOwned[address(1)]>= 19000000000 * 10**18){

        LPAmount = tAmount.div(10000).mul(_Fee);
        _tOwned[uniswapV2Pair] = _tOwned[uniswapV2Pair].add(LPAmount);
        _Fee = 0;
        emit Transfer(sender, uniswapV2Pair, LPAmount);
    }
    if (_Fee == 0) return;
    uint256 _FeeAmount = tAmount.div(10000).mul(_Fee).mul(35).div(100);
    LPAmount = tAmount.div(10000).mul(_Fee).mul(65).div(100);
    _tOwned[uniswapV2Pair] = _tOwned[uniswapV2Pair].add(LPAmount);

    _tOwned[address(1)] = _tOwned[address(1)].add(_FeeAmount);
    emit Transfer(sender, address(1), _FeeAmount);
    emit Transfer(sender, uniswapV2Pair, LPAmount);
}
```

Recommendation

The team is advised to invoke the `sync()` function after adding the fees to the `uniswapV2Pair` balance. This will prevent the potential of arbitrage opportunities for the users.

CO - Code Optimization

Criticality	Minor / Informative
Location	EDAO.sol#L790
Status	Unresolved

Description

There are code segments that could be optimized. A segment may be optimized so that it becomes a smaller size, consumes less memory, executes more rapidly, or performs fewer operations. The contract performs the following check in the if-block, which contains no code to execute if the check resolves to true.

```
if (_isExcludedFromFee[sender] || _isExcludedFromFee[recipient] || sender ==
address(uniswapV2Router)   ) {

} else if(recipient == address(uniswapV2Pair)||sender ==
address(uniswapV2Pair)){
...
}
```

Recommendation

The team is advised to take into consideration this segment and remove this so the runtime will be more performant. That way it will improve the efficiency and performance of the source code and reduce the cost of executing it.

RSML - Redundant SafeMath Library

Criticality	Minor / Informative
Location	EDAO.sol#L83
Status	Unresolved

Description

SafeMath is a popular Solidity library that provides a set of functions for performing common arithmetic operations in a way that is resistant to integer overflows and underflows.

Starting with Solidity versions that are greater than or equal to 0.8.0, the arithmetic operations revert on underflow and overflow. As a result, the native functionality of the Solidity operations replaces the SafeMath library. Hence, the usage of the SafeMath library adds complexity, overhead and increases unnecessarily the gas consumption.

```
library SafeMath {...}
```

Recommendation

The team is advised to remove the SafeMath library. Since the version of the contract is greater than `0.8.0` then the pure Solidity arithmetic operations produce the same result.

If the previous functionality is required, then the contract could exploit the `unchecked { ... }` statement.

Read more about the breaking change on https://docs.soliditylang.org/en/v0.8.16/080-breaking-changes.html#solidity-v0-8-0-breaking-changes.

L02 - State Variables could be Declared Constant

Criticality	Minor / Informative
Location	EDAO.sol#L597,598,599,603
Status	Unresolved

Description

State variables can be declared as constant using the constant keyword. This means that the value of the state variable cannot be changed after it has been set. Additionally, the constant variables decrease gas consumption of the corresponding transaction.

```
string private _name = "EDAO"
string private _symbol = "EDAO"
uint8 private _decimals = 18
uint256 private _tTotal = 20000000000 * 10**18
```

Recommendation

Constant state variables can be useful when the contract wants to ensure that the value of a state variable cannot be changed by any function in the contract. This can be useful for storing values that are important to the contract's behavior, such as the contract's address or the maximum number of times a certain function can be called. The team is advised to add the constant keyword to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	Minor / Informative
Location	EDAO.sol#L309,311,342,388,606
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.

```
function DOMAIN_SEPARATOR() external view returns (bytes32);
function PERMIT_TYPEHASH() external pure returns (bytes32);
function MINIMUM_LIQUIDITY() external pure returns (uint256);
function WETH() external pure returns (address);
mapping(address => bool) public _isExcludedFromFee
```

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.

L06 - Missing Events Access Control

Criticality	Minor / Informative
Location	EDAO.sol#L235
Status	Unresolved

Description

Events are a way to record and log information about changes or actions that occur within a contract. They are often used to notify external parties or clients about events that have occurred within the contract, such as the transfer of tokens or the completion of a task. There are functions that have no event emitted, so it is difficult to track off-chain changes.

```
_operator = newOperator
```

Recommendation

To avoid this issue, it's important to carefully design and implement the events in a contract, and to ensure that all required events are included. It's also a good idea to test the contract to ensure that all events are being properly triggered and logged.

By including all required events in the contract and thoroughly testing the contract's functionality, the contract ensures that it performs as intended and does not have any missing events that could cause issues.

L13 - Divide before Multiply Operation

Criticality	Minor / Informative
Location	EDAO.sol#L825,828,836,842,843
Status	Unresolved

Description

It is important to be aware of the order of operations when performing arithmetic calculations. This is especially important when working with large numbers, as the order of operations can affect the final result of the calculation. Performing divisions before multiplications may cause loss of prediction.

```
_tOwned[recipient] = _tOwned[recipient].add(
            tAmount.div(10000).mul(recipientRate)
        )
```

Recommendation

To avoid this issue, it is recommended to carefully consider the order of operations when performing arithmetic calculations in Solidity. It's generally a good idea to use parentheses to specify the order of operations. The basic rule is that the multiplications should be prior to the divisions.

L19 - Stable Compiler Version

Criticality	Minor / Informative
Location	EDAO.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 ^0.8.6;
```

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.

L22 - Potential Locked Ether

Criticality	Minor / Informative
Location	EDAO.sol#L759
Status	Unresolved

Description

The contract contains Ether that has been placed into a Solidity contract and is unable to be transferred. Thus, it is impossible to access the locked Ether. This may produce a financial loss for the users that have called the payable method.

```
receive() external payable {}
```

Recommendation

The team is advised to either remove the payable method or add a withdraw functionality. it is important to carefully consider the risks and potential issues associated with locked Ether.

Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
Ownable	Implementation			
		Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	transferOperatorShip	Public	✓	onlyOwner
IUniswapV2Fa	Interface			

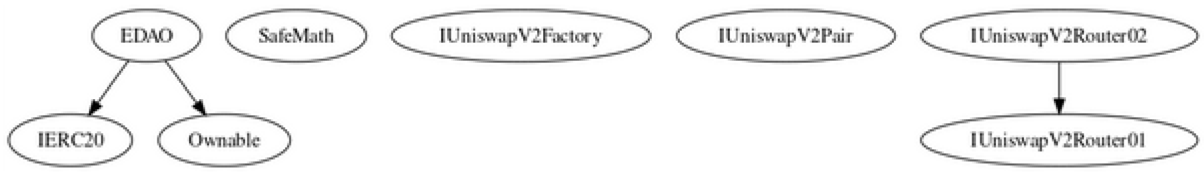
ctory				
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IUniswapV2Pair	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-
	PERMIT_TYPEHASH	External		-
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-

	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-
	mint	External	✓	-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
IUniswapV2Router01	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-

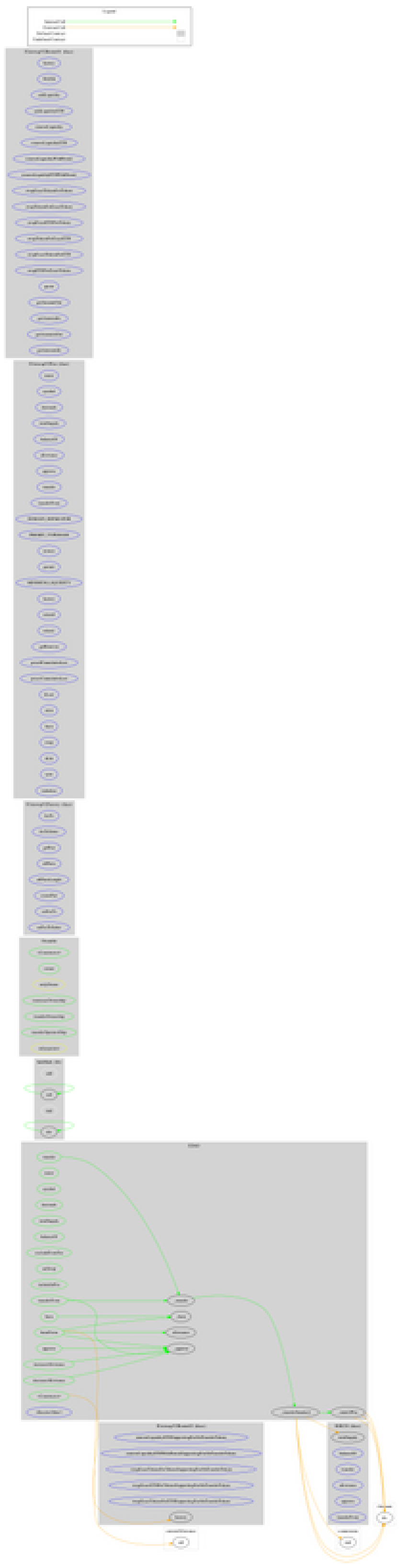
	getAmountsIn	External		-
IUniswapV2Router02	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
EDAO	Implementation	IERC20, Ownable		
		Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	excludeFromFee	Public	✓	onlyOwner
	setSwap	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	_burn	Internal	✓	
	burn	Public	✓	-
	burnFrom	Public	✓	-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-

	decreaseAllowance	Public	✓	-
		External	Payable	-
	_approve	Private	✓	
	_transfer	Private	✓	
	_transferStandard	Private	✓	
	_takeLPFee	Private	✓	

Inheritance Graph



Flow Graph



Summary

There are some functions that can be abused by the owner like stop transactions. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats. The is also a limit of max 10% buy/sell fees.

Disclaimer

The information provided in this report does not constitute investment, financial or trading advice and you should not treat any of the document's content as such. This report may not be transmitted, disclosed, referred to or relied upon by any person for any purposes nor may copies be delivered to any other person other than the Company without Cyberscope's prior written consent. This report is not nor should be considered an "endorsement" or "disapproval" of any particular project or team. This report is not nor should be regarded as an indication of the economics or value of any "product" or "asset" created by any team or project that contracts Cyberscope to perform a security assessment. This document does not provide any warranty or guarantee regarding the absolute bug-free nature of the technology analyzed, nor do they provide any indication of the technologies proprietors' business, business model or legal compliance. This report should not be used in any way to make decisions around investment or involvement with any particular project. This report represents an extensive assessment process intending to help our customers increase the quality of their code while reducing the high level of risk presented by cryptographic tokens and blockchain technology.

Blockchain technology and cryptographic assets present a high level of ongoing risk Cyberscope's position is that each company and individual are responsible for their own due diligence and continuous security Cyberscope's goal is to help reduce the attack vectors and the high level of variance associated with utilizing new and consistently changing technologies and in no way claims any guarantee of security or functionality of the technology we agree to analyze. The assessment services provided by Cyberscope are subject to dependencies and are under continuing development. You agree that your access and/or use including but not limited to any services reports and materials will be at your sole risk on an as-is where-is and as-available basis Cryptographic tokens are emergent technologies and carry with them high levels of technical risk and uncertainty. The assessment reports could include false positives false negatives and other unpredictable results. The services may access and depend upon multiple layers of third parties.

About Cyberscope

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