Cyberscope

Audit Report

CoCoin

July 2023

Network BSC

Address 0xBb02205d9405029fD1944f30B29a5D3e510aE1Be

Audited by © cyberscope

Analysis

Critical Medium Minor / Informative Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
●	AOO	Arithmetic Operation Optimization	Unresolved
●	L02	State Variables could be Declared Constant	Unresolved

Table of Contents

Review

Contract Name	Cocoin
Compiler Version	v0.8.17+commit.8df45f5f
Optimization	200 runs
Explorer	https://bscscan.com/address/0xbb02205d9405029fd1944f30b29a5d3e510ae1be
Address	0xbb02205d9405029fd1944f30b29a5d3e510ae1be
Network	BSC
Symbol	COCOIN
Decimals	8
Total Supply	1,000,000,000

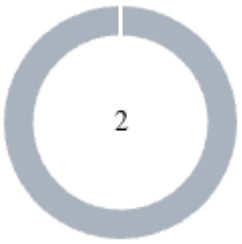
Audit Updates

Initial Audit	24 Jul 2023

Source Files

Filename	SHA256
contracts/tokens/Cocoin.sol	7506a33a3273bfff2a0bf203987e9864dd4dee79310b9eb0e537d1fb4f9630c3
@openzeppelin/contracts/utils/Context.sol	1458c260d010a08e4c20a4a517882259a23a4baa0b5bd9add9fb6d6a1549814a
@openzeppelin/contracts/token/ERC20/IERC20.sol	94f23e4af51a18c2269b355b8c7cf4db8003d075c9c541019eb8dcf4122864d5
@openzeppelin/contracts/token/ERC20/ERC20.sol	bce14c3fd3b1a668529e375f6b70ffdf9cef8c4e410ae99608be5964d98fa701
@openzeppelin/contracts/token/ERC20/extensions/IERC20Metadata.sol	af5c8a77965cc82c33b7ff844deb9826166689e55dc037a7f2f790d057811990
@openzeppelin/contracts/token/ERC20/extensions/ERC20Burnable.sol	0344809a1044e11ece2401b4f7288f414ea41fa9d1dad24143c84b737c9fc02e
@openzeppelin/contracts/access/Ownable.sol	9353af89436556f7ba8abb3f37a6677249aa4df6024fbfaa94f79ab2f44f3231

Findings Breakdown



Critical	0
Medium	0
Minor / Informative	2

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	0	0	0	0
Medium	0	0	0	0
Minor / Informative	2	0	0	0

AOO - Arithmetic Operation Optimization

Criticality	Minor / Informative
Location	contracts/tokens/Cocoin.sol#L144
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 `_distributeFees` function splits the fee amount in two portions and transfers each portion to the corresponding fee receiver. Each portion is half the fee amount. However, the operation `amount * 5 / 10` can be optimized even further by just dividing the fee amount by 2.

```
// Calculate the fee receiver #1 amount (50%)
uint256 fee1 = amount * 5 / 10;
```

Recommendation

The team is advised to take these segments into consideration and rewrite them 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.

L02 - State Variables could be Declared Constant

Criticality	Minor / Informative
Location	contracts/tokens/Cocoin.sol#L19
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.

```
uint8 private _decimals = 8
```

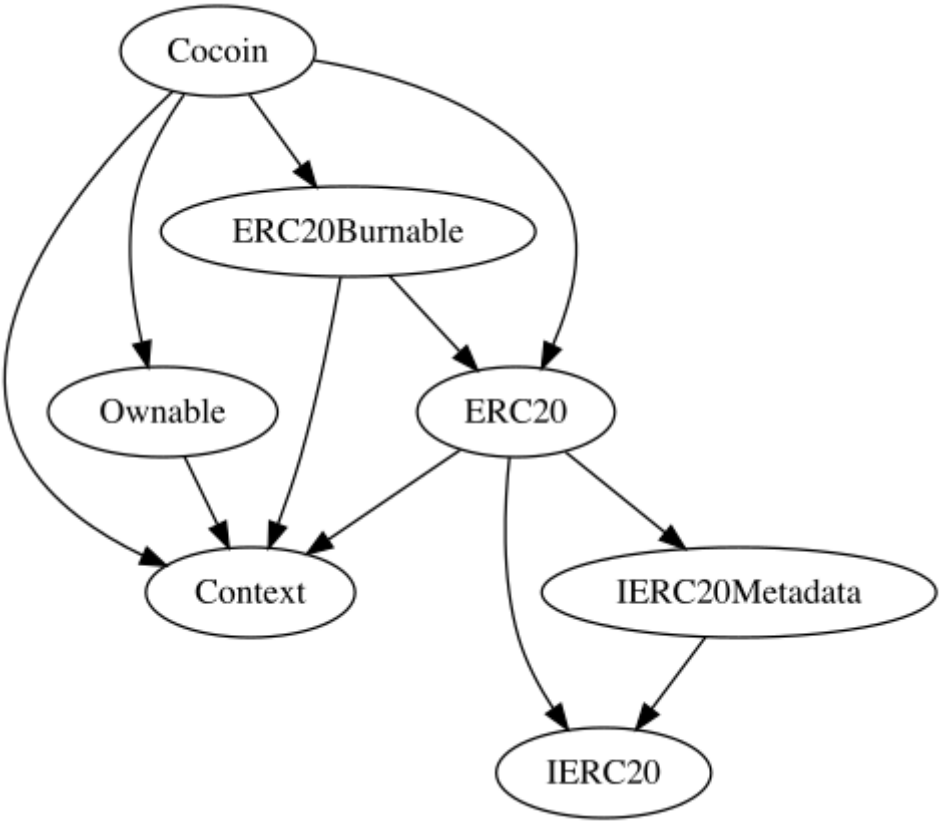
Recommendation

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.

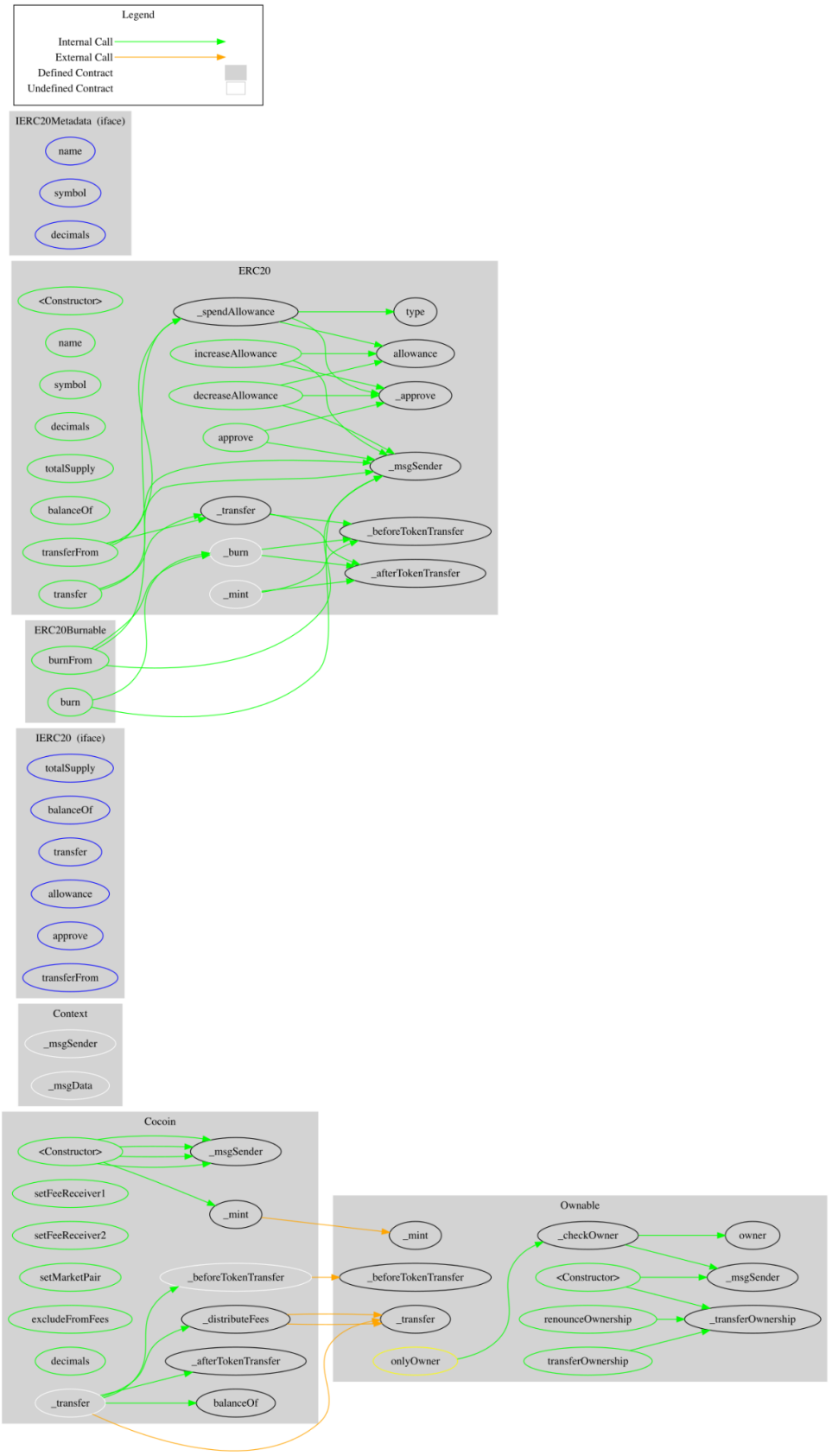
Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Cocoin	Implementation	Context, ERC20, ERC20Burnable, Ownable		
		Public	✓	ERC20
	setFeeReceiver1	Public	✓	onlyOwner
	setFeeReceiver2	Public	✓	onlyOwner
	setMarketPair	Public	✓	onlyOwner
	excludeFromFees	Public	✓	onlyOwner
	decimals	Public		-
	_mint	Internal	✓	
	_beforeTokenTransfer	Internal	✓	
	_transfer	Internal	✓	
	_distributeFees	Internal	✓	

Inheritance Graph



Flow Graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
IERC20Metadata (iface)
name
symbol
decimals
ERC20
<Constructor>
name
symbol
decimals
totalSupply
balanceOf
transferFrom
transfer
_spendAllowance
increaseAllowance
decreaseAllowance
approve
_transfer
_burn
_mint
type
allowance
_approve
_msgSender
_beforeTokenTransfer
_afterTokenTransfer
ERC20Burnable
burnFrom
burn
IERC20 (iface)
totalSupply
balanceOf
transfer
allowance
approve
transferFrom
Context
_msgSender
_msgData
Cocoin
<Constructor>
setFeeReceiver1
setFeeReceiver2
setMarketPair
excludeFromFees
decimals
_transfer
_msgSender
_mint
_beforeTokenTransfer
_distributeFees
_afterTokenTransfer
balanceOf
Ownable
_mint
_beforeTokenTransfer
_transfer
onlyOwner
_checkOwner
<Constructor>
renounceOwnership
transferOwnership
owner
_msgSender
_transferOwnership

Summary

CoCoin contract implements a token mechanism. This audit investigates security issues, business logic concerns and potential improvements. CoCoin is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler error or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions. There is also a limit of max 4% sell fees.

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The Cyberscope team

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