Cyberscope

Audit Report

Coinmerge

February 2023

Type	ERC20
Network	ETH
Address	0x87869A9789291A6cEC99f3c3Ef2fF71fcEb12a8e
Audited by	© cyberscope

Table of Contents

Review

Contract Name	CoinMergeOS
Compiler Version	v0.8.18+commit.87f61d96
Optimization	200 runs
Explorer	https://etherscan.io/address/0x87869a9789291a6cec99f3c3ef2ff71fceb12a8e
Address	0x87869a9789291a6cec99f3c3ef2ff71fceb12a8e
Network	ETH
Symbol	CMOS
Decimals	9
Total Supply	11,000,000,000

Audit Updates

Initial Audit	31 Jan 2023 https://github.com/cyberscope-io/audits/blob/main/cmos/v1/audit.pdf
Corrected Phase 2	07 Feb 2023

Source Files

Filename	SHA256
CoinMergeOS.sol	adf1cbeaccd38a2ab848f79e4fa103b41003bfebf0d95fbaf3f14d5afb2f35f1

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	Passed

Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
●	L02	State Variables could be Declared Constant	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L16	Validate Variable Setters	Unresolved

L02 - State Variables could be Declared Constant

Criticality	Minor / Informative
Location	CoinMergeOS.sol#L6,7,8
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 m_Decimals = 9
string m_Name = "CoinMerge OS"
string m_Symbol = "CMOS"
```

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	CoinMergeOS.sol#L6,7,8,9,10,11,12,37,40,44,47,51,77,82
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.

```
uint8 m_Decimals = 9
string m_Name = "CoinMerge OS"
string m_Symbol = "CMOS"
bool m_Launched = false
address m_Owner = 0x333e0F5eD7B8269e383328FB5f3b3AA2619479dc
mapping (address => uint256) m_Balances
mapping (address => mapping (address => uint256)) m_Allowances
address _account
uint256 _amount
address _recipient
address _spender
address _owner
address _sender
address _address

...
```

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.

L16 - Validate Variable Setters

Criticality	Minor / Informative
Location	CoinMergeOS.sol#L79
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.

```
m_Owner = _address
```

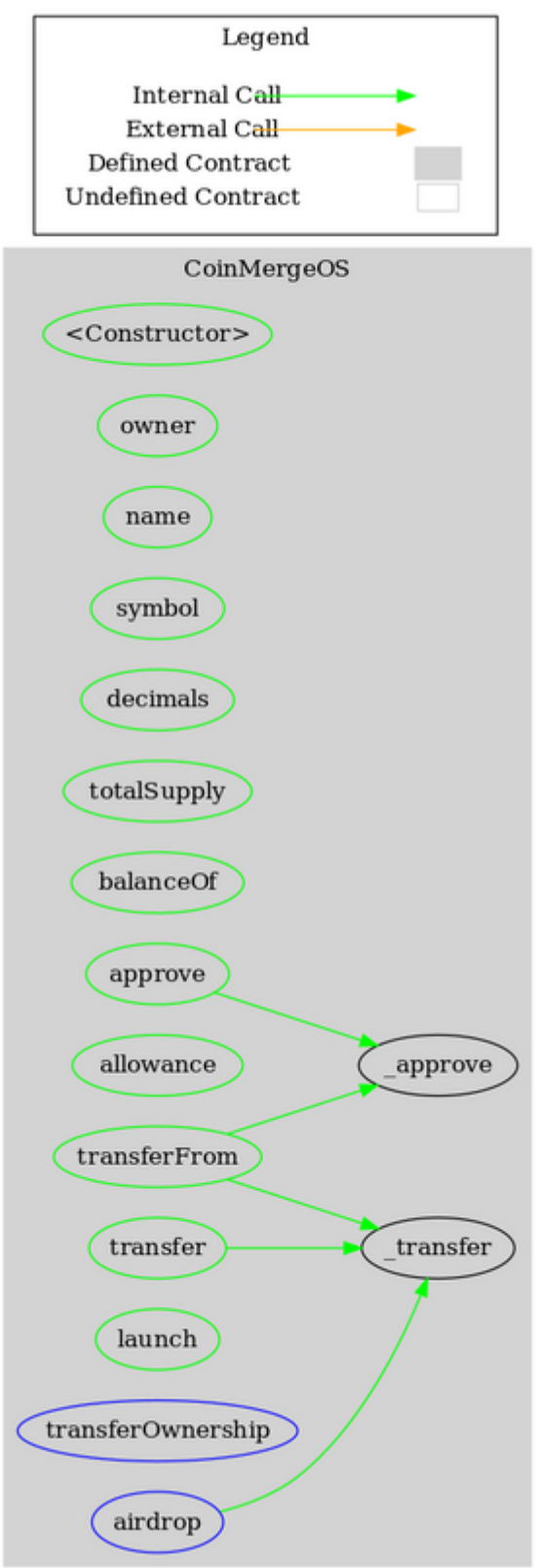
Recommendation

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.

Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
CoinMergeOS	Implementation			
		Public	✓	-
	owner	Public		-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	launch	Public	✓	-
	_approve	Private	✓	
	_transfer	Private	✓	
	transferOwnership	External	✓	-
	airdrop	External	✓	-

Flow Graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
CoinMergeOS
<Constructor>
owner
name
symbol
decimals
totalSupply
balanceOf
approve
allowance
_approve
transferFrom
transfer
_transfer
launch
transferOwnership
airdrop

Summary

Coinmerge is an interesting project with a friendly and growing community. The Smart Contract analysis reported no compiler errors 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.

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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

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