Cyberscope

Audit Report

Dencun Inu

March 2024

Network	ETH
Address	0x8e45371b266cf0406e793061bd99910eee85a2b9
Audited by	© cyberscope

Analysis

Critical Medium Minor / Informative Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Unresolved
●	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
●	IDI	Immutable Declaration Improvement	Unresolved
●	MEE	Missing Events Emission	Unresolved
●	RSW	Redundant Storage Writes	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L19	Stable Compiler Version	Unresolved

Table of Contents

Review

Contract Name	DENCUN
Compiler Version	v0.8.23+commit.f704f362
Optimization	200 runs
Explorer	https://etherscan.io/address/0x8e45371b266cf0406e793061bd99910eee85a2b9
Address	0x8e45371b266cf0406e793061bd99910eee85a2b9
Network	ETH
Symbol	DENCUN
Decimals	18
Total Supply	100,000,000,000,000
Badge Eligibility	Yes

Audit Updates

Initial Audit	08 Mar 2024

Source Files

Filename	SHA256
DENCUN.sol	a88e82c22d32a21ad9dc699c17f77f08d4c0e1ebf9fe2b94370a5ca5de71bd48

Findings Breakdown

Critical	1
Medium	0
Minor / Informative	5

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	1	0	0	0
Medium	0	0	0	0
Minor / Informative	5	0	0	0

ST - Stops Transactions

Criticality	Critical
Location	DENCUN.sol#L182
Status	Unresolved

Description

The transactions are initially disabled for all users excluding the authorized addresses. The owner can enable the transactions for all users. Once the transactions are enable the owner will not be able to disable them again.

```
require(tradingActive || _excludedFromTradingLock[from] ||
_excludedFromTradingLock[to], "Trading is not active.");
```

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. Some suggestions are:

- Introduce a multi-sign wallet so that many addresses will confirm the action.
- Introduce a governance model where users will vote about the actions.

IDI - Immutable Declaration Improvement

Criticality	Minor / Informative
Location	DENCUN.sol#L58
Status	Unresolved

Description

The contract declares state variables that their value is initialized once in the constructor and are not modified afterwards. The `immutable` is a special declaration for this kind of state variables that saves gas when it is defined.

```
_owner
```

Recommendation

By declaring a variable as immutable, the Solidity compiler is able to make certain optimizations. This can reduce the amount of storage and computation required by the contract, and make it more gas-efficient.

MEE - Missing Events Emission

Criticality	Minor / Informative
Location	DENCUN.sol#L65,71
Status	Unresolved

Description

The contract performs actions and state mutations from external methods that do not result in the emission of events. Emitting events for significant actions is important as it allows external parties, such as wallets or dApps, to track and monitor the activity on the contract. Without these events, it may be difficult for external parties to accurately determine the current state of the contract.

```
    function excludeFromTradingLock(address account) external
onlyOwner {
        _excludedFromTradingLock[account] = true;
    }



    function enableTrading() external onlyOwner {
        tradingActive = true;

    }
```

Recommendation

It is recommended to include events in the code that are triggered each time a significant action is taking place within the contract. These events should include relevant details such as the user's address and the nature of the action taken. By doing so, the contract will be more transparent and easily auditable by external parties. It will also help prevent potential issues or disputes that may arise in the future.

RSW - Redundant Storage Writes

Criticality	Minor / Informative
Location	DENCUN.sol#L65,71
Status	Unresolved

Description

The contract modifies the state of the following variables without checking if their current value is the same as the one given as an argument. As a result, the contract performs redundant storage writes, when the provided parameter matches the current state of the variables, leading to unnecessary gas consumption and inefficiencies in contract execution.

```
    function excludeFromTradingLock(address account) external
onlyOwner {
        _excludedFromTradingLock[account] = true;
    }

    function enableTrading() external onlyOwner {
        tradingActive = true;

    }
```

Recommendation

The team is advised to implement additional checks within to prevent redundant storage writes when the provided argument matches the current state of the variables. By incorporating statements to compare the new values with the existing values before proceeding with any state modification, the contract can avoid unnecessary storage operations, thereby optimizing gas usage.

L04 - Conformance to Solidity Naming Conventions

Criticality	Minor / Informative
Location	DENCUN.sol#L34,35,36,37
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.

```
_name = "Dencun Inu";
_symbol = "DENCUN";
_decimals = 18;
_totalSupply = 100_000_000_000_000 * 10**18;
```

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.

L19 - Stable Compiler Version

Criticality	Minor / Informative
Location	DENCUN.sol#L27
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 ^0.8.23;
```

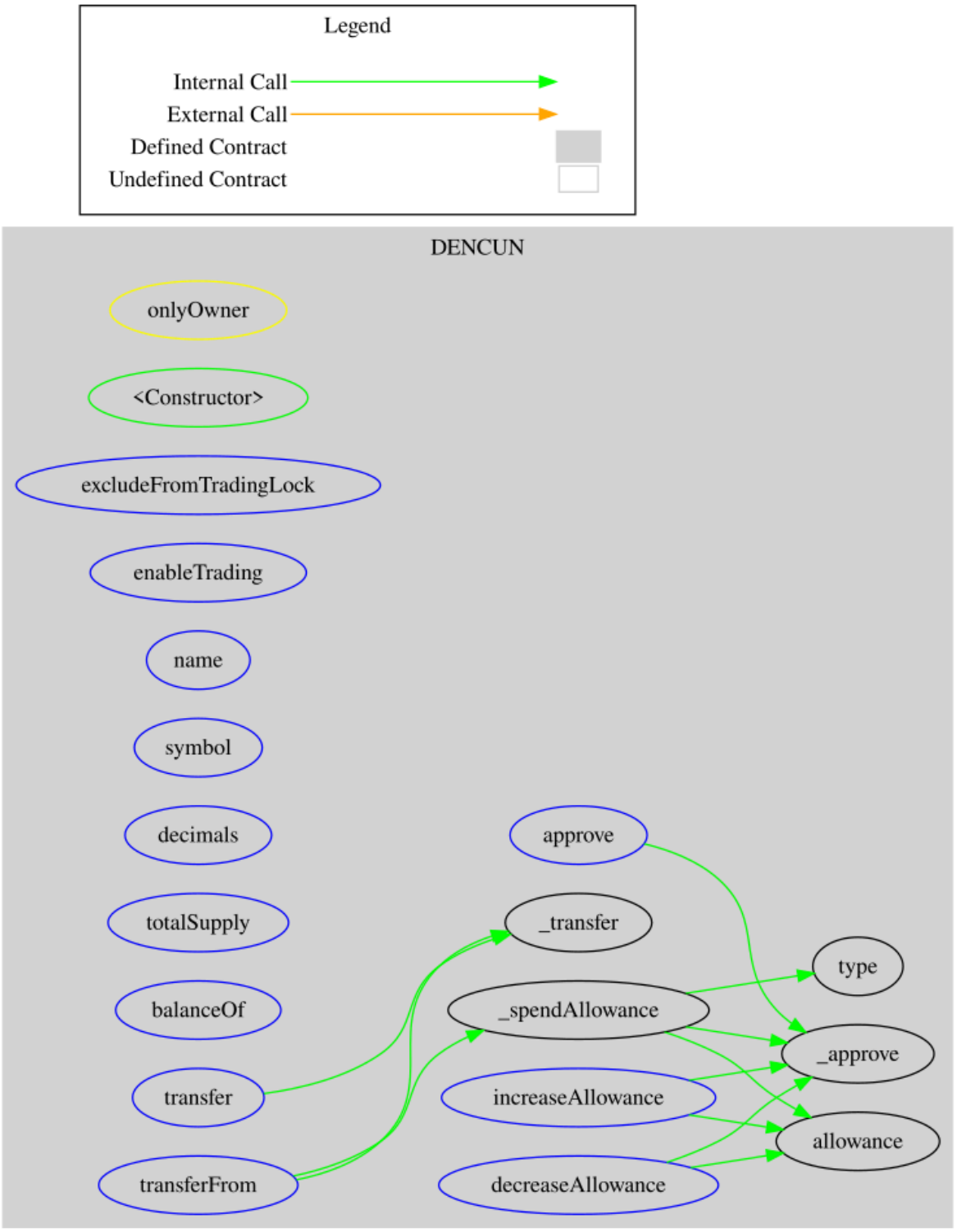
Recommendation

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**
DENCUN	Implementation			
		Public	✓	-
	excludeFromTradingLock	External	✓	onlyOwner
	enableTrading	External	✓	onlyOwner
	name	External		-
	symbol	External		-
	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	Public		-
	approve	External	✓	-
	transferFrom	External	✓	-
	increaseAllowance	External	✓	-
	decreaseAllowance	External	✓	-
	_transfer	Internal	✓	
	_approve	Internal	✓	
	_spendAllowance	Internal	✓	

Flow Graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
DENCUN
onlyOwner
<Constructor>
excludeFromTradingLock
enableTrading
name
symbol
decimals
totalSupply
balanceOf
transfer
transferFrom
approve
_transfer
_spendAllowance
increaseAllowance
decreaseAllowance
type
_approve
allowance

Summary

Dencun Inu contract implements a token mechanism. This audit investigates security issues, business logic concerns and potential improvements. 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.

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