Cyberscope

Audit Report

Nexus

February 2025

Network	BSC
Address	0x23A034758A3682F2f383309b5934880aD7985B7b
Audited by	© cyberscope

Analysis

● Critical ● Medium ● Minor / Informative ● Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OTUT	Transfers User's Tokens	Unresolved
●	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
Minor / Informative	MTEE	Missing Transfer Event Emission	Unresolved
Minor / Informative	L02	State Variables could be Declared Constant	Unresolved
Minor / Informative	L19	Stable Compiler Version	Unresolved

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Risk Classification

The criticality of findings in Cyberscope's smart contract audits is determined by evaluating multiple variables. The two primary variables are:

1. **Likelihood of Exploitation**: This considers how easily an attack can be executed, including the economic feasibility for an attacker.
2. **Impact of Exploitation**: This assesses the potential consequences of an attack, particularly in terms of the loss of funds or disruption to the contract's functionality.

Based on these variables, findings are categorized into the following severity levels:

1. **Critical**: Indicates a vulnerability that is both highly likely to be exploited and can result in significant fund loss or severe disruption. Immediate action is required to address these issues.
2. **Medium**: Refers to vulnerabilities that are either less likely to be exploited or would have a moderate impact if exploited. These issues should be addressed in due course to ensure overall contract security.
3. **Minor**: Involves vulnerabilities that are unlikely to be exploited and would have a minor impact. These findings should still be considered for resolution to maintain best practices in security.
4. **Informative**: Points out potential improvements or informational notes that do not pose an immediate risk. Addressing these can enhance the overall quality and robustness of the contract.

Severity	Likelihood / Impact of Exploitation
● Critical	Highly Likely / High Impact
● Medium	Less Likely / High Impact or Highly Likely/ Lower Impact
● Minor / Informative	Unlikely / Low to no Impact

Review

Contract Name	Token
Compiler Version	v0.8.20+commit.a1b79de6
Optimization	200 runs
Explorer	https://bscscan.com/address/0x23a034758a3682f2f383309b5934880ad7985b7b
Address	0x23a034758a3682f2f383309b5934880ad7985b7b
Network	BSC
Symbol	NEX
Decimals	18
Total Supply	1,000,000,000
Badge Eligibility	Must Fix Criticals

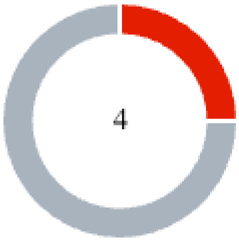
Audit Updates

Initial Audit	07 Feb 2025

Source Files

Filename	SHA256
Token.sol	6531e1f358ee1b11af713870a2e2c44b6cb161124b435e1ddeb2f1c515a0b89b

Findings Breakdown



●	Critical	1
●	Medium	0
●	Minor / Informative	3

Severity	Unresolved	Acknowledged	Resolved	Other
● Critical	1	0	0	0
● Medium	0	0	0	0
● Minor / Informative	3	0	0	0

OTUT - Transfers User's Tokens

Criticality	Critical
Location	Token.sol#L30
Status	Unresolved

Description

Any user has the authority to transfer the balance of a user's address if the user has granted allowance. The contract does not subtract the allowance in the `transferFrom()` method, as a result, the transfer can be repeated until the user's balance go to zero.

```
function transferFrom(address from, address to, uint value) public
returns(bool) {
    require(balanceOf(from) >= value, 'balance too low');
    require(allowance[from][msg.sender] >= value, 'allowance too low');
    balances[to] += value;
    balances[from] -= value;
    emit Transfer(from, to, value);
    return true;
}
```

Recommendation

The team is advised to subtract the allowance in the `transferFrom()` method and migrate to a new contract.

MTEE - Missing Transfer Event Emission

Criticality	Minor / Informative
Location	Token.sol#L14
Status	Unresolved

Description

The contract does not emit an event when portions of the main amount are transferred during the transfer process. This lack of event emission results in decreased transparency and traceability regarding the flow of tokens, and hinders the ability of decentralized applications (dApps), such as blockchain explorers, to accurately track and analyze these transactions.

```
constructor() {
    balances[msg.sender] = totalSupply;
}
```

Recommendation

It is advisable to incorporate the emission of detailed event logs following each asset transfer. These logs should encapsulate key transaction details, including the identities of the sender and receiver, and the quantity of assets transferred. Implementing this practice will enhance the reliability and transparency of transaction tracking systems, ensuring accurate data availability for ecosystem participants.

L02 - State Variables could be Declared Constant

Criticality	Minor / Informative
Location	Token.sol#L6,7,8,9
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.

```
uint public totalSupply = 1000000000 * 10 ** 18
string public name = "Nexus"
string public symbol = "NEX"
uint public decimals = 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.

L19 - Stable Compiler Version

Criticality	Minor / Informative
Location	Token.sol#L1
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 ^0.8.20;
```

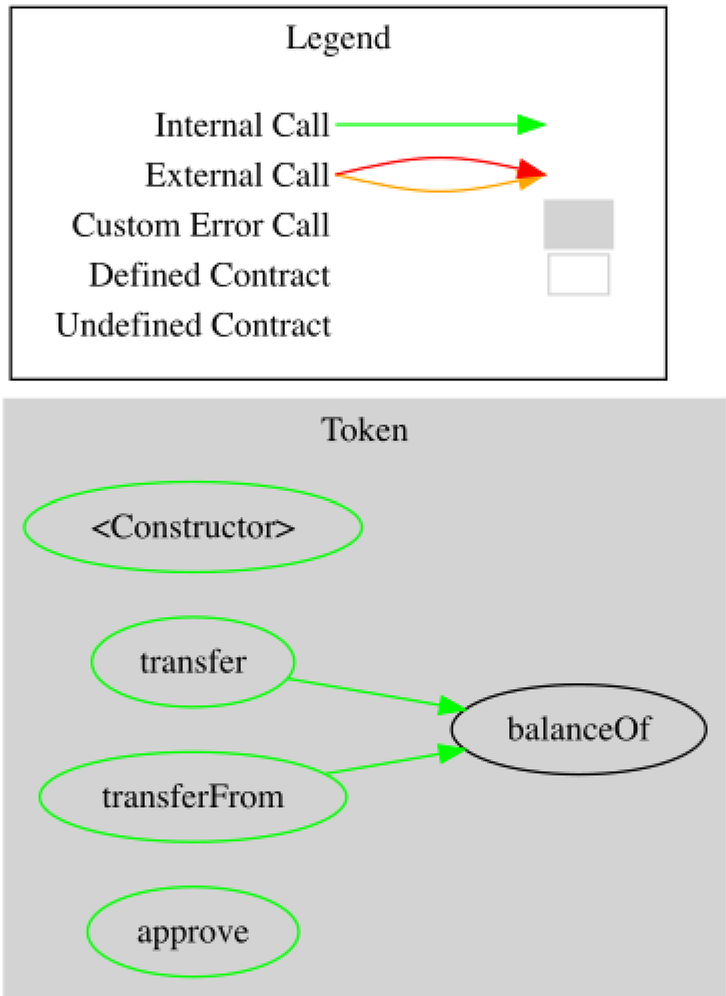
Recommendation

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**
Token	Implementation			
		Public	✓	-
	balanceOf	Public	✓	-
	transfer	Public	✓	-
	transferFrom	Public	✓	-
	approve	Public	✓	-

Flow Graph


Legend
Internal Call
External Call
Custom Error Call
Defined Contract
Undefined Contract
Token
<Constructor>
transfer
balanceOf
transferFrom
approve

Summary

Nexus 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 transferring the user's tokens. 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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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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