Cyberscope

Audit Report

zoozToken

March 2023

Github	https://github.com/coalichain/ZOOZToken/blob/main/contracts
Commit	3f1cacf62a5d372e80cc1e24978a79ec04b76ff4
Audited by	© cyberscope

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Review

Contract Name	ZOOZToken
Repository	https://github.com/coalichain/ZOOZToken/blob/main/contracts
Commit	3f1cacf62a5d372e80cc1e24978a79ec04b76ff4
Testing Deploy	https://testnet.bscscan.com/address/0x6a15792f6c25efdc549330219a733e8ed460a6ab

Audit Updates

Initial Audit	16 Feb 2023 https://github.com/cyberscope-io/audits/blob/main/zooz/v1/audit.pdf
Corrected Phase 2	01 Mar 2023

Source Files

Filename	SHA256
contracts/ZOOZToken.sol	1f9681eb46946e1261e02d5073e28ababdead2c259176f39daf36460ee9a8ebd

Roles

The contract consist of three roles. The `owner`, `manager,` and `governor` roles.

The `Owner` has the authority to

- Grant or revokes the `governor` and the `manager` role.
- Renounce or Transfer ownership.
- Set blacklisted addresses.
- Set excluded from fees addresses.

The `Manager` has the authority to

- Transfer the `manager` role.
- Configure reward address.

The `Governor` has the authority to

- Set blacklisted addresses.
- Set excluded from fees addresses.

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	Unresolved

BC - Blacklists Addresses

Criticality	Medium
Location	contracts/ZOOZToken.sol#L466
Status	Unresolved

Description

The contract owner has the authority to stop addresses from transactions. The owner may take advantage of it by calling the `setBlockedAddress` function.

```
function setBlockedAddress(address holderAddress, bool blocked) public
onlyGovernance()  {
  require(holderAddress != address(0), "HolderAddress can't be the zero
address");

      blockedAddresses[holderAddress][_msgSender()] = blocked;

  if(blocked) {
    emit AddressBlocked(holderAddress);
    return;
  }

  emit AddressUnblocked(holderAddress);
}
```

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
●	US	Untrusted Source	Unresolved
●	MVN	Misleading Variables Naming	Unresolved

US - Untrusted Source

Criticality	Critical
Location	contracts/ZOOZToken.sol#L203
Status	Unresolved

Description

The contract uses an external contract in order to determine the transaction's flow. The external contract is untrusted. As a result it may produce security issues and harm the transactions.

```
IPinkAntiBot public pinkAntiBot;
```

Recommendation

The contract should use a trusted external source. A trusted source could be either a commonly recognized or an audited contract. The pointing addresses should not be able to change after the initialization.

MVN - Misleading Variables Naming

Criticality	Minor / Informative
Location	contracts/ZOOZToken.sol#L210,383
Status	Unresolved

Description

Variables can have misleading names if their names do not accurately reflect the value they contain or the purpose they serve. The contract uses some variable names that are too generic or do not clearly convey the information stored in the variable. Misleading variable names can lead to confusion, making the code more difficult to read and understand.

The contract utilizes the variable `botAddresses` and the function `_isItBotAddress`. These variables and the function implement an exclude from the fees mechanism.

```
mapping (address => mapping (address => bool)) internal botAddresses;

function _isItBotAddress(address addr) internal view returns(bool) {
    return botAddresses[addr][governance1Address]
        && botAddresses[addr][governance2Address]
        && botAddresses[addr][governance3Address];
}
```

Recommendation

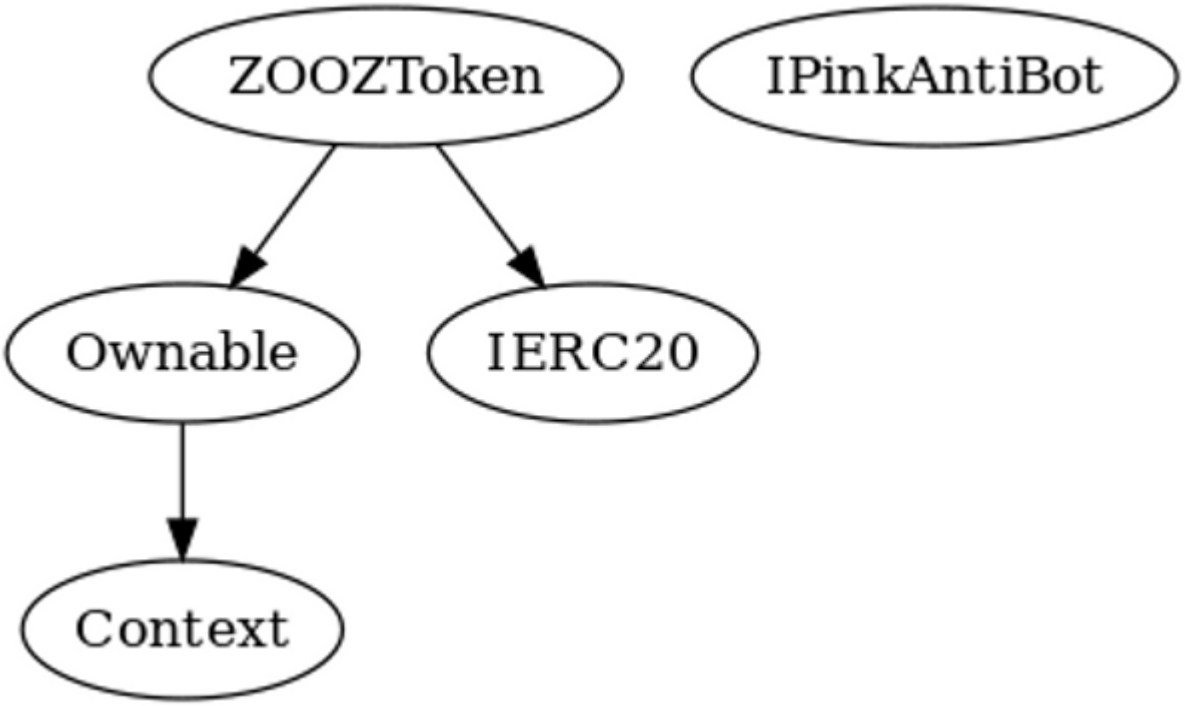
It's always a good practice for the contract to contain variable names that are specific and descriptive. The team is advised to keep in mind the readability of the code.

Functions Analysis

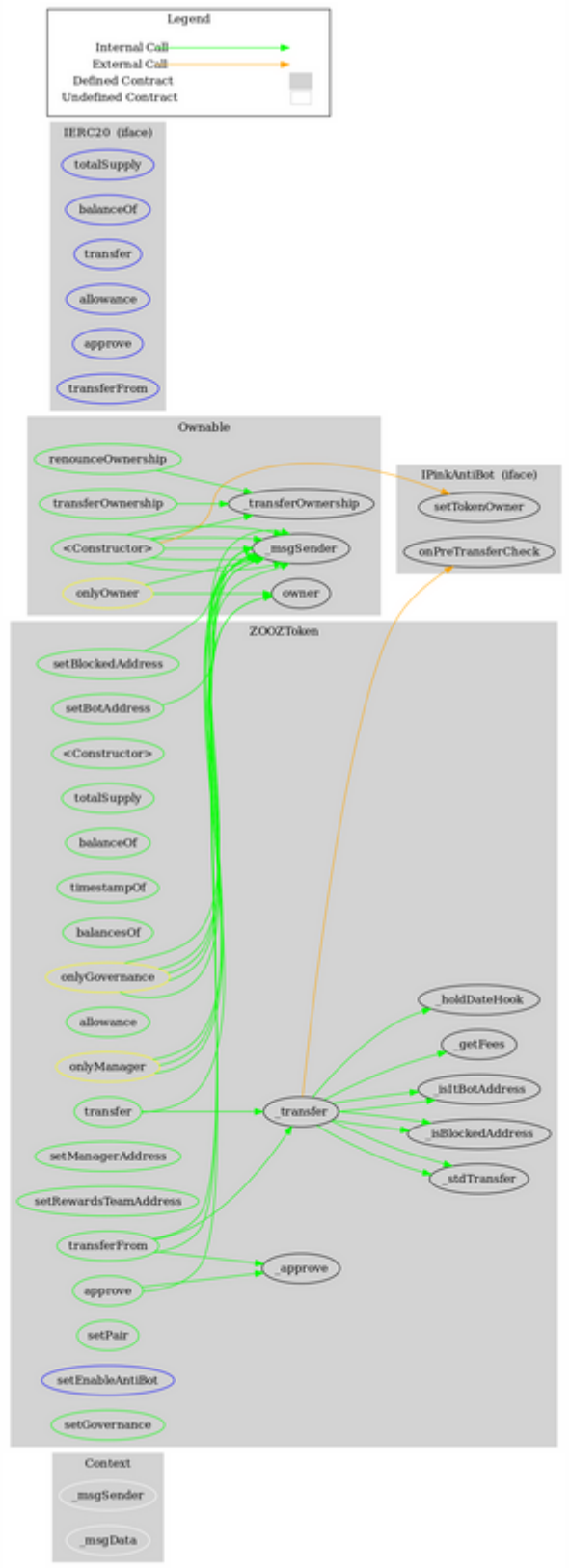
Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Ownable	Implementation	Context		
		Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
IPinkAntiBot	Interface			
	setTokenOwner	External	✓	-
	onPreTransferCheck	External	✓	-

ZOOZToken	Implementation	Ownable, IERC20		
		Public	✓	-
	totalSupply	Public		-
	balanceOf	Public		-
	timestampOf	Public		-
	balancesOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	_approve	Private	✓	
	_transfer	Private	✓	
	_isBlockedAddress	Internal		
	_isItBotAddress	Internal		
	_getFees	Internal		
	_holdDateHook	Internal	✓	
	_stdTransfer	Private	✓	
	setManagerAddress	Public	✓	onlyManager
	setRewardsTeamAddress	Public	✓	onlyManager
	setBlockedAddress	Public	✓	onlyGovernance
	setBotAddress	Public	✓	onlyGovernance
	setPair	Public	✓	onlyManager
	setEnableAntiBot	External	✓	onlyManager
	setGovernance	Public	✓	onlyOwner

Inheritance Graph



Flow Graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
IERC20 (iface)
totalSupply
balanceOf
transfer
allowance
approve
transferFrom
Ownable
renounceOwnership
transferOwnership
<Constructor>
onlyOwner
_transferOwnership
_msgSender
owner
IPinkAntiBot (iface)
setTokenOwner
onPreTransferCheck
ZOOZToken
setBlockedAddress
setBotAddress
<Constructor>
totalSupply
balanceOf
timestampOf
balancesOf
onlyGovernance
allowance
onlyManager
transfer
setManagerAddress
setRewardsTeamAddress
transferFrom
approve
setPair
setEnableAntiBot
setGovernance
_transfer
_approve
holdDateHook
_getFees
isItBotAddress
_isBlockedAddress
_stdTransfer
Context
_msgSender
_msgData

Summary

There are some functions that can be abused by the owner like stopping 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 fee percentage decreases over time, as the time elapsed since the last transaction of the holder. If the time elapsed is less than or equal to 1 week, the fee percentage is 14%. After 1 week, the fee percentage decreases to 10% for the next 3 weeks (1 month total). After 3 months, the fee percentage decreases again to 5%, and after 6 months, the fee percentage decreases to 2%. Eventually, after more than 6 months the fee percentage reaches 0.

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The Cyberscope team

https://www.cyberscope.io