Cyberscope

Audit Report

DeepToken

December 2022

Github https://github.com/Deeplink-Network/Staking

Commit ab56a7e7cde209bdad1c70a24ce8ce257c04413d

Audited by © cyberscope

Table of Contents

Contract Review

Contract Name	DeepToken
Testing Deploy	https://testnet.bscscan.com/token/0x25d58e7afc5e3344a7b23ef0e062d809658ecab1
Symbol	DEEP
Decimals	18

Audit Updates

Initial Audit	15 Dec 2022

Source Files

Filename	SHA256
@openzeppelin/contracts/access/Ownable.sol	9353af89436556f7ba8abb3f37a6677249aa4df6024fbfaa94f79ab2f44f3231
@openzeppelin/contracts/token/ERC20/ERC20.sol	5031430cc2613c32736d598037d3075985a2a09e61592a013dbd09a5bc2041b8
@openzeppelin/contracts/token/ERC20/extensions/ERC20Capped.sol	00d9364a71bfb7590fdeb7e097fe84159f4fc002c4f603b036c61f91e6368861
@openzeppelin/contracts/token/ERC20/extensions/IERC20Metadata.sol	af5c8a77965cc82c33b7ff844deb9826166689e55dc037a7f2f790d057811990
@openzeppelin/contracts/token/ERC20/IERC20.sol	94f23e4af51a18c2269b355b8c7cf4db8003d075c9c541019eb8dcf4122864d5
@openzeppelin/contracts/utils/Context.sol	1458c260d010a08e4c20a4a517882259a23a4baa0b5bd9add9fb6d6a1549814a
contracts/DeepToken.sol	e830f16acbdc86e9a99c24aa026e81a76178ef5c4cddb76d3c6a85fa05b96a39

Contract 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	unresolved
●	BT	Burns Tokens	unresolved
●	BC	Blacklists Addresses	Passed

MT - Mints Tokens

Criticality	minor / informative
Location	contracts/DeepToken.sol#L47
Status	unresolved

Description

The contract minter has the authority to mint tokens.

```
function mint(address _account, uint256 _amount) public
onlyMinter {
    require(
        minted[msg.sender] + _amount <=
allocation[msg.sender],
        "Not able to mint more tokens"
    );
    minted[msg.sender] += _amount;
    _mint(_account, _amount);
}
```

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.

BT - Burns Tokens

Criticality	minor / informative
Location	contracts/DeepToken.sol#L56
Status	unresolved

Description

The contract owner has the authority to burn tokens from a specific address.

```
function burn(address to, uint256 amount) public
onlyOwner {
  _burn(to, amount);
}
```

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.

Contract Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
●	L04	Conformance to Solidity Naming Conventions	unresolved

L04 - Conformance to Solidity Naming Conventions

Criticality	minor / informative
Location	contracts/DeepToken.sol#L56,47,56,33,38,33,38,47
Status	unresolved

Description

Solidity defines a naming convention that should be followed. Rule exceptions:

- Allow constant variable name/symbol/decimals to be lowercase.
- Allow _ at the beginning of the mixed_case match for private variables and unused parameters.

```
_amount
_account
_account
_account
_account
_isMinter
_amount
_amount
```

Recommendation

Follow the Solidity naming convention.
https://docs.soliditylang.org/en/v0.8.17/style-guide.html#naming-conventions.

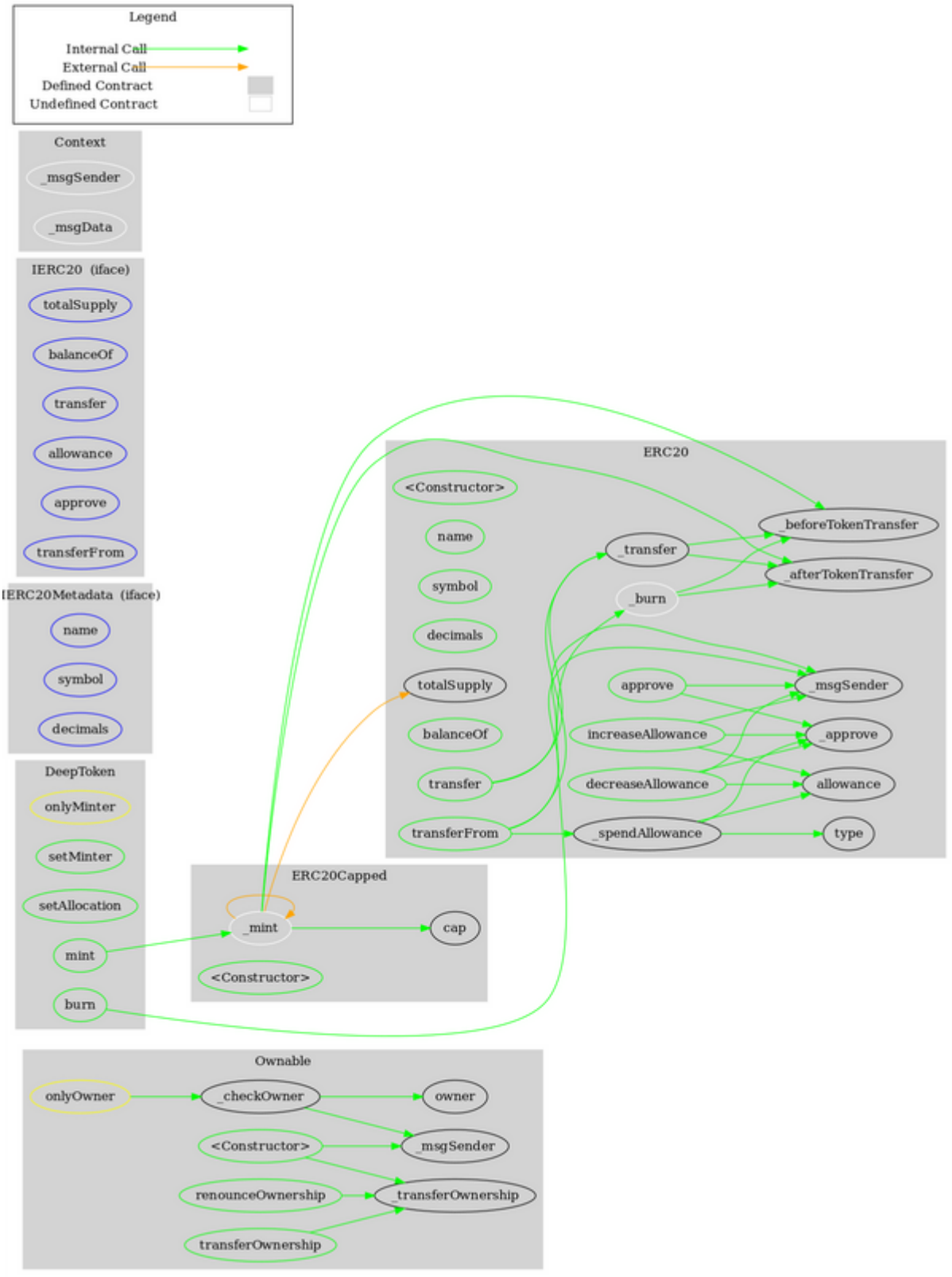
Contract Functions

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Ownable	Implementation	Context		
		Public	✓	-
	owner	Public		-
	_checkOwner	Internal		
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
ERC20	Implementation	Context, IERC20, IERC20Metadata		
		Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	

	_mint	Internal	✓	
	_burn	Internal	✓	
	_approve	Internal	✓	
	_spendAllowance	Internal	✓	
	_beforeTokenTransfer	Internal	✓	
	_afterTokenTransfer	Internal	✓	
ERC20Capped	Implementation	ERC20		
		Public	✓	-
	cap	Public		-
	_mint	Internal	✓	
IERC20Metadata	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		

DeepToken	Implementation	ERC20Capped, Ownable		
		Public	✓	ERC20Capped ERC20
	setMinter	Public	✓	onlyOwner
	setAllocation	Public	✓	onlyOwner
	mint	Public	✓	onlyMinter
	burn	Public	✓	onlyMinter

Contract Flow



Summary

There are some functions that can be abused by the owner like mint tokens and burn tokens from any address. if the contract owner abuses the mint functionality, then the contract will be highly inflated. 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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