Cyberscope

Audit Report

Crypts Crew

April 2024

Network Base

Audited by © cyberscope

Analysis

Critical Medium Minor / Informative Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	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
●	DPS	Deprecated Pragma Statement	Unresolved
●	IDI	Immutable Declaration Improvement	Unresolved
●	L02	State Variables could be Declared Constant	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L09	Dead Code Elimination	Unresolved
●	L16	Validate Variable Setters	Unresolved
●	L17	Usage of Solidity Assembly	Unresolved

Table of Contents

Review

Contract Name	DxStandardToken
Compiler Version	v0.8.7+commit.e28d00a7
Optimization	200 runs
Address	
Network	BASE
Symbol	Cryp
Decimals	18
Total Supply	10,000,000,000
Badge Eligibility	Yes

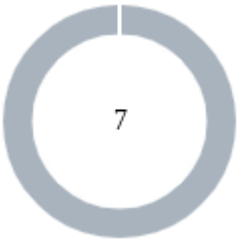
Audit Updates

Initial Audit	09 Apr 2024

Source Files

Filename	SHA256
DxStandardToken.sol	171b2e0408eba3df114c4a4c7ea3819f6315907b8bf59e99046106f5bab13fd8

Findings Breakdown



Critical	0
Medium	0
Minor / Informative	7

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	0	0	0	0
Medium	0	0	0	0
Minor / Informative	7	0	0	0

DPS - Deprecated Pragma Statement

Criticality	Minor / Informative
Location	DxStandardToken.sol#L12
Status	Unresolved

Description

The contract under assessment make use of the pragma statement `pragma experimental ABIEncoderV2;` , indicating the intention to utilize the experimental feature ABIEncoderV2 for handling complex data types within function arguments and return values. However, it's crucial to note that as of Solidity version 0.8.0, this pragma statement has been deprecated and serves no functional purpose. The ABIEncoderV2 functionality is now enabled by default in Solidity starting from version 0.8.0.

```
pragma experimental ABIEncoderV2;
```

Recommendation

The team is advised to remove the pragma statement `pragma experimental ABIEncoderV2;` as it no longer serves any functional purpose and may lead to confusion. Updating the contract codebase to remove deprecated features ensures code cleanliness, reduces ambiguity, and aligns with best practices for Solidity development.

IDI - Immutable Declaration Improvement

Criticality	Minor / Informative
Location	DxStandardToken.sol#L479,480,483
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.

```
_decimals
_creator
mintingFinishedPermanent
```

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.

L02 - State Variables could be Declared Constant

Criticality	Minor / Informative
Location	DxStandardToken.sol#L462
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.

```
bool public mintedByDxsale = true
```

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	DxStandardToken.sol#L468
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.

```
address public _creator
```

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.

L09 - Dead Code Elimination

Criticality	Minor / Informative
Location	DxStandardToken.sol#L250,274,299,309,328,338,355,365,380,390,405,429,441,685
Status	Unresolved

Description

In Solidity, dead code is code that is written in the contract, but is never executed or reached during normal contract execution. Dead code can occur for a variety of reasons, such as:

- Conditional statements that are always false.
- Functions that are never called.
- Unreachable code (e.g., code that follows a return statement).

Dead code can make a contract more difficult to understand and maintain, and can also increase the size of the contract and the cost of deploying and interacting with it.

```
function isContract(address account) internal view returns (bool) {
        // This method relies on extcodesize/address.code.length, which
returns 0
        // for contracts in construction, since the code is only stored
at the end
        // of the constructor execution.

        return account.code.length > 0;
    }

function sendValue(address payable recipient, uint256 amount) internal {
        require(address(this).balance >= amount, "Address: insufficient
balance");

        (bool success, ) = recipient.call{value: amount}("");
        require(success, "Address: unable to send value, recipient may
have reverted");
    }
```

Recommendation

To avoid creating dead code, it's important to carefully consider the logic and flow of the contract and to remove any code that is not needed or that is never executed. This can help improve the clarity and efficiency of the contract.

L16 - Validate Variable Setters

Criticality	Minor / Informative
Location	DxStandardToken.sol#L480
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.

```
_creator = creator_
```

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.

L17 - Usage of Solidity Assembly

Criticality	Minor / Informative
Location	DxStandardToken.sol#L446
Status	Unresolved

Description

Using assembly can be useful for optimizing code, but it can also be error-prone. It's important to carefully test and debug assembly code to ensure that it is correct and does not contain any errors.

Some common types of errors that can occur when using assembly in Solidity include Syntax, Type, Out-of-bounds, Stack, and Revert.

```
assembly {
                let returndata_size := mload(returndata)
                revert(add(32, returndata), returndata_size)
            }
```

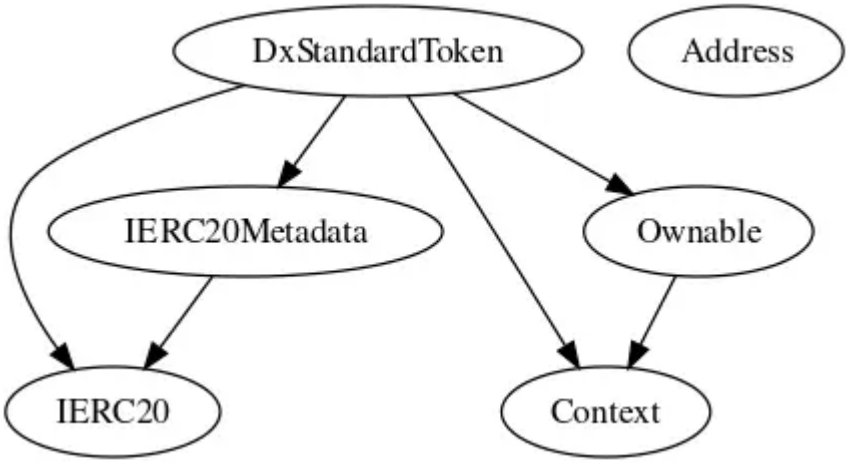
Recommendation

It is recommended to use assembly sparingly and only when necessary, as it can be difficult to read and understand compared to Solidity code.

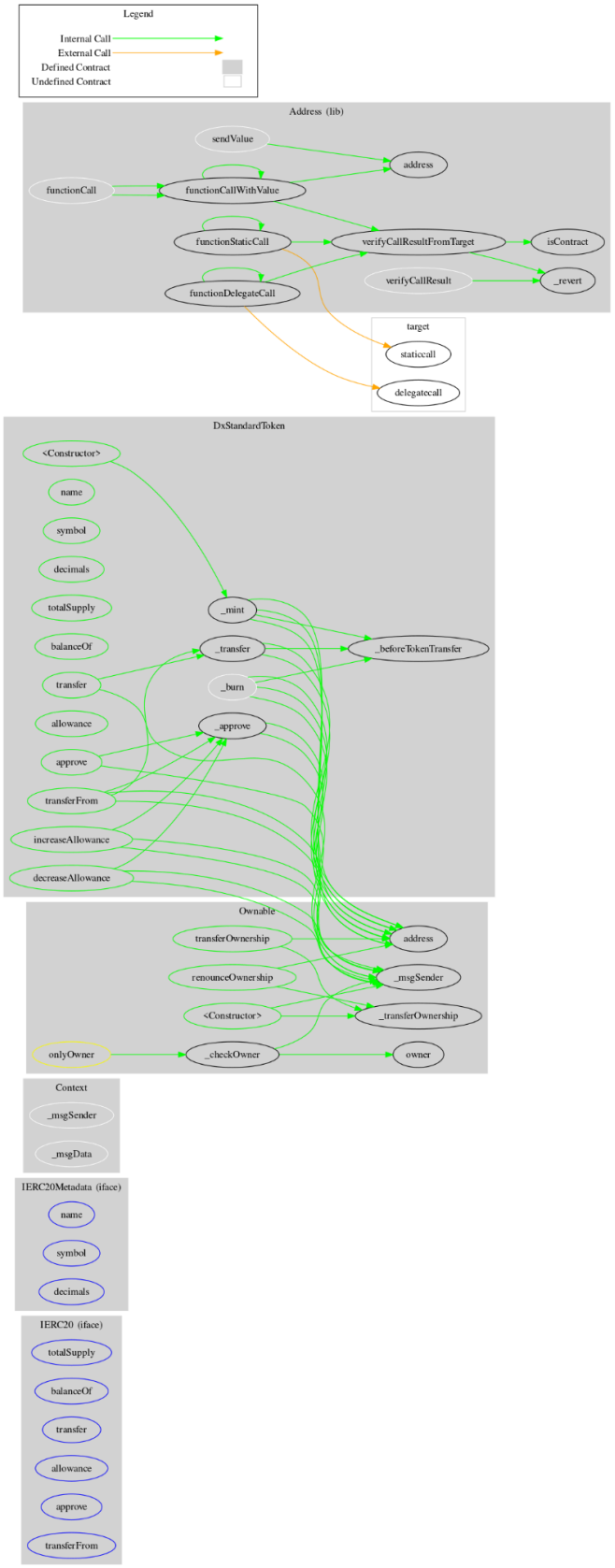
Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
DxStandardToken	Implementation	Context, IERC20, IERC20Metadata, Ownable		
		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	✓	
	_beforeTokenTransfer	Internal	✓	

Inheritance Graph



Flow Graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
Address (lib)
sendValue
address
functionCall
functionCallWithValue
functionStaticCall
verifyCallResultFromTarget
isContract
verifyCallResult
_revert
functionDelegateCall
target
staticcall
delegatecall
DxStandardToken
<Constructor>
name
symbol
decimals
totalSupply
balanceOf
transfer
allowance
approve
transferFrom
increaseAllowance
decreaseAllowance
_mint
_transfer
_beforeTokenTransfer
_burn
_approve
Ownable
transferOwnership
address
renounceOwnership
_msgSender
<Constructor>
_transferOwnership
onlyOwner
_checkOwner
owner
Context
_msgSender
_msgData
IERC20Metadata (iface)
name
symbol
decimals
IERC20 (iface)
totalSupply
balanceOf
transfer
allowance
approve
transferFrom

Summary

Crypts Crew contract implements a token mechanism. This audit investigates security issues, business logic concerns and potential improvements. Crypts Crew is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler error or critical issues. The contract Owner does not have any privileges.

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The Cyberscope team

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