AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

NET FREE COIN

DATED : 12 Feb, 2024

MANUAL TESTING

Centralization – The owner can Pause the token.

Severity: High

Function: pause

Status: Open

Overview:

The owner can pause the token for an unlimited period of time which can lock the user's token.

```
function pause() public onlyOwner {
        _pause();
    }
```

Suggestion:

It is recommended that there should be a locking period.

AUDIT SUMMARY

Project name – NET FREE COIN

Date: 12 Feb, 2024

Scope of Audit- Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

Audit Status: **Passed With High Risk**

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	1	0	0	2
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0

USED TOOLS

Tools:

1- Manual Review:
A line by line code review has been performed by audit ace team.

2- BSC Test Network: All tests were conducted on the BSC Test network, and each test has a corresponding transaction attached to it. These tests can be found in the "Functional Tests" section of the report.

3- Slither :
The code has undergone static analysis using Slither.

Testnet version:
The tests were performed using the contract deployed on the BSC Testnet, which can be found at the following address:
https://testnet.bscscan.com/address/0x7339440cae557c2b8dded1d8dee3d8d016a0ad6b#code

Token Information

Token Name : NET FREE COIN

Token Symbol: NFC

Decimals: 18

Token Supply: 100000000000

Network: BscScan

Token Type: BEP-20

Token Address:
0x42FFDd33BB079eD662b28206D21387aeC8F1aa16

Checksum:
Ae1c3a4fbb6e83e8393a57617b5a5b331

Owner:
0x22f4bcebBd2f989a450AA51210ceb0f4675578dF
(at time of writing the audit)

Deployer:
0x22f4bcebBd2f989a450AA51210ceb0f4675578dF

TOKEN OVERVIEW

Fees:

Buy Fee: 0-0%

Sell Fee: 0-0%

Transfer Fee: 0-0%

Fees Privilege: Owner

Ownership: Owned

Minting: Yes

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Note: The minting will be possible in the contract but not more than the max total supply which is mentioned in the contract i.e; 100000000000

AUDIT METHODOLOGY

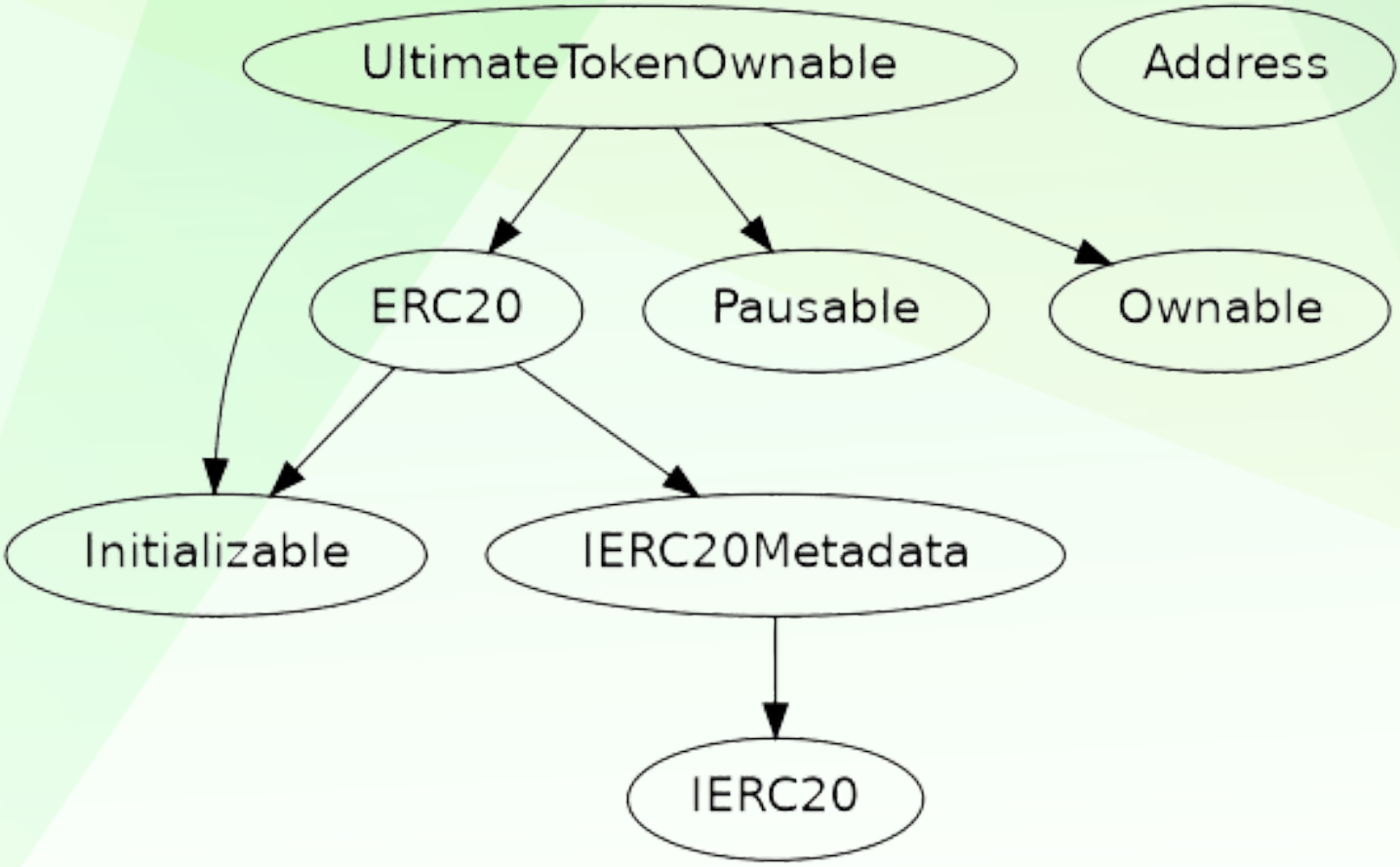
The auditing process will follow a routine as special considerations by Auditace:

- Review of the specifications, sources, and instructions provided to Auditace to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
- Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
- Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Auditace describe.
- Test coverage analysis determines whether the test cases are covering the code and how much code isexercised when we run the test cases.
- Symbolic execution is analysing a program to determine what inputs cause each part of a program to execute.
- Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.

VULNERABILITY CHECKLIST

- Return values of low-level calls
- Private modifier
- Multiple Sends
- Using Suicide
- Gas Limitand Loops
- Address hardcoded
- Exception Disorder
- Using inline assembly
- Divide before multiply
- Missing Zero Address Validation
- Compiler version not fixed
- **Gasless Send**
- Using block.timestamp
- Re-entrancy
- Tautology or contradiction
- Timestamp Dependence
- Revert/require functions
- Use of tx.origin
- Integer overflow/underflow
- Dangerous strict equalities
- Using SHA3
- Using throw

INHERITANCE TREE



STATIC ANALYSIS

A static analysis of the code was performed using Slither.

No issues were found.

```
INFO:Detectors:
UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._owner (UltimateTokenOwnable.sol#775) shadows:
        - Ownable._owner (UltimateTokenOwnable.sol#112) (state variable)
UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._name (UltimateTokenOwnable.sol#776) shadows:
        - ERC20._name (UltimateTokenOwnable.sol#605) (state variable)
UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._symbol (UltimateTokenOwnable.sol#777) shadows:
        - ERC20._symbol (UltimateTokenOwnable.sol#606) (state variable)
UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._decimals (UltimateTokenOwnable.sol#778) shadows:
        - ERC20._decimals (UltimateTokenOwnable.sol#607) (state variable)
UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._maxSupply (UltimateTokenOwnable.sol#780) shadows:
        - ERC20._maxSupply (UltimateTokenOwnable.sol#603) (state variable)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#local-variable-shadowing
INFO:Detectors:
Address._revert(bytes,string) (UltimateTokenOwnable.sol#372-384) uses assembly
        - INLINE ASM (UltimateTokenOwnable.sol#377-380)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#assembly-usage
INFO:Detectors:
Address._revert(bytes,string) (UltimateTokenOwnable.sol#372-384) is never used and should be removed
Address.functionCall(address,bytes) (UltimateTokenOwnable.sol#230-232) is never used and should be removed
Address.functionCall(address,bytes,string) (UltimateTokenOwnable.sol#240-246) is never used and should be removed
Address.functionCallWithValue(address,bytes,uint256) (UltimateTokenOwnable.sol#259-261) is never used and should be removed
Address.functionCallWithValue(address,bytes,uint256,string) (UltimateTokenOwnable.sol#269-278) is never used and should be removed
Address.functionDelegateCall(address,bytes) (UltimateTokenOwnable.sol#311-313) is never used and should be removed
Address.functionDelegateCall(address,bytes,string) (UltimateTokenOwnable.sol#321-328) is never used and should be removed
Address.functionStaticCall(address,bytes) (UltimateTokenOwnable.sol#286-288) is never used and should be removed
Address.functionStaticCall(address,bytes,string) (UltimateTokenOwnable.sol#296-303) is never used and should be removed
Address.sendValue(address,uint256) (UltimateTokenOwnable.sol#205-210) is never used and should be removed
Address.verifyCallResult(bool,bytes,string) (UltimateTokenOwnable.sol#360-370) is never used and should be removed
Address.verifyCallResultFromTarget(address,bool,bytes,string) (UltimateTokenOwnable.sol#336-352) is never used and should be removed
Initializable._getInitializedVersion() (UltimateTokenOwnable.sol#561-563) is never used and should be removed
Initializable._isInitializing() (UltimateTokenOwnable.sol#568-570) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
INFO:Detectors:
Pragma version^0.8.19 (UltimateTokenOwnable.sol#7) necessitates a version too recent to be trusted. Consider deploying with 0.8.18.
solc-0.8.24 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
INFO:Detectors:
Low level call in Address.sendValue(address,uint256) (UltimateTokenOwnable.sol#205-210):
        - (success) = recipient.call{value: amount}() (UltimateTokenOwnable.sol#208)
Low level call in Address.functionCallWithValue(address,bytes,uint256,string) (UltimateTokenOwnable.sol#269-278):
        - (success,returndata) = target.call{value: value}(data) (UltimateTokenOwnable.sol#276)
Low level call in Address.functionStaticCall(address,bytes,string) (UltimateTokenOwnable.sol#296-303):
        - (success,returndata) = target.staticcall(data) (UltimateTokenOwnable.sol#301)
Low level call in Address.functionDelegateCall(address,bytes,string) (UltimateTokenOwnable.sol#321-328):
        - (success,returndata) = target.delegatecall(data) (UltimateTokenOwnable.sol#326)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
```

```
INFO:Detectors:
Pragma version^0.8.19 (UltimateTokenOwnable.sol#7) necessitates a version too recent to be trusted. Consider deploying with 0.8.18.
solc-0.8.24 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity
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Low level call in Address.functionDelegateCall(address,bytes,string) (UltimateTokenOwnable.sol#321-328):
        - (success,returndata) = target.delegatecall(data) (UltimateTokenOwnable.sol#326)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls
INFO:Detectors:
Parameter UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._owner (UltimateTokenOwnable.sol#775) is not in mixedCase
Parameter UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._name (UltimateTokenOwnable.sol#776) is not in mixedCase
Parameter UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._symbol (UltimateTokenOwnable.sol#777) is not in mixedCase
Parameter UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._decimals (UltimateTokenOwnable.sol#778) is not in mixedCase
Parameter UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._initialSupply (UltimateTokenOwnable.sol#779) is not in mixedCase
Parameter UltimateTokenOwnable.initialize(address,string,string,uint8,uint256,uint256)._maxSupply (UltimateTokenOwnable.sol#780) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions
INFO:Slither:UltimateTokenOwnable.sol analyzed (8 contracts with 93 detectors), 32 result(s) found
```

FUNCTIONAL TESTING

1- Approve (passed):
https://testnet.bscscan.com/tx/0xd06433bf328639345385d2642e5e56419033093fdf52cf0924193750ff18e55f

2- Increase Allowance (passed):
https://testnet.bscscan.com/tx/0xb9bef52635b500df42f4d9bc22c52c10e27c1a3ba716f4616a90f103859bb761

3- Decrease Allowance (passed):
https://testnet.bscscan.com/tx/0x2f6a2965a91f48aa0c00d88daec9fc1b92b33985a0dc87e4307572a30bad0f64

4- Mint (passed):
https://testnet.bscscan.com/tx/0xfb35a62594b3f55ad9f11d21054291cf3577373f56d308438c666969bae2c8f3

5- Pause (passed):
https://testnet.bscscan.com/tx/0x830ce539c84e65519bc2a656a4444606a34f3dba522b6d02c60b739974ac89c4

POINTS TO NOTE

- The owner can transfer ownership.
- The owner can renounce ownership.
- The owner can pause/unpause token.

CLASSIFICATION OF RISK

Severity	Description
Critical	These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
High-Risk	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.
Medium-Risk	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.
Low-Risk	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.
Gas Optimization /Suggestion	A vulnerability that has an informational character but is not affecting any of the code.

Findings

Severity	Found
Critical	0
High-Risk	1
Medium-Risk	0
Low-Risk	0
Gas Optimization / Suggestions	2

MANUAL TESTING

Centralization – The owner can Pause the token.

Severity: High

Function: pause

Status: Open

Overview:

The owner can pause the token for an unlimited period of time which can lock the user's token.

```
function pause() public onlyOwner {
        _pause();
    }
```

Suggestion:

It is recommended that there should be a locking period.

MANUAL TESTING

Optimization

Severity: Informational

Function: Floating Pragma Solidity version

Status: Open

Overview:

It is considered best practice to pick one compiler version and stick with it. With a floating pragma, contracts may accidentally be deployed using an outdated.

```
pragma solidity ^0.8.19;
```

Suggestion:

Adding the latest constant version of solidity is recommended, as this prevents the unintentional deployment of a contract with an outdated compiler that contains unresolved bugs.

MANUAL TESTING

Optimization

Severity: Optimization

Function: Remove unused code.

Status: Open

Overview:

Unused variables are allowed in Solidity, and they do. not pose a direct security issue. It is the best practice. though to avoid them.

```
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 re-
verted");
    }
modifier reinitializer(uint8 version) {
        require(!_initializing && _initialized < version, "Initializable: contract
is already initialized");
        _initialized = version;
        _initializing = true;
        _;
        _initializing = false;
        emit Initialized(version);
    }
function _getInitializedVersion() internal view returns (uint8) {
        return _initialized;
    }
function _isInitializing() internal view returns (bool) {
        return _initializing;
    }
```

DISCLAIMER

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