AuditAce
FROM INCEPTION TO SUCCESS

Smart Contract Audit

FOR

WWD

DATED : 26 June 23'

HIGH RISK FINDING

Centralization – Trades must be enabled

Severity: High
function: enableTrading
Status: Not Resolved

Overview:

The smart contract owner must enable trades for holders. If trading remain disabled, no one would be able to buy/sell/transfer tokens.

```
function enableTrading() external onlyOwner {
    require(!tradingEnabled, "Trading is already enabled");
    tradingEnabled = true;
    startTradingBlock = block.number;
}
```

Suggestion

To mitigate this centralization issue, we propose the following options:

1. Renounce Ownership: Consider relinquishing control of the smart contract by renouncing ownership. This would remove the ability for a single entity to manipulate the router, reducing centralization risks.
2. Multi-signature Wallet: Transfer ownership to a multi-signature wallet. This would require multiple approvals for any changes to the mainRouter, adding an additional layer of security and reducing the centralization risk.

3. Transfer ownership to a trusted and valid 3rd party in order to guarantee enabling of the trades

AUDIT SUMMARY

Project name – WWD

Date: 26 June, 2023

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

Audit Status: Passed

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	1	0	0	0
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/token/0xAC359AaDe930096bdAad3976813C4572330c134E

Token Information

Token Name : WorldWarDoge

Token Symbol: WWD

Decimals: 18

Token Supply: 1,000,000,000

Token Address: ---

Checksum:
039415dc98eee91d346c1ba2e74a2f67f9376c5d

Owner:
0xB89020d6FCc5c97F6C4112f08d197e5363F918E8
(at time of writing the audit)

Deployer:
0x2Df07AE09dB8F01642FF749FCe2280Aa36478679

TOKEN OVERVIEW

Fees:

Buy Fees: 0%

Sell Fees: 2%

Transfer Fees: 0%

Fees Privilege: Owner

Ownership: Owned

Minting: none

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: - - including in fees

- excluding from fees

- initial distribution of the tokens

- enabling trades

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

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	0

INHERITANCE TREE
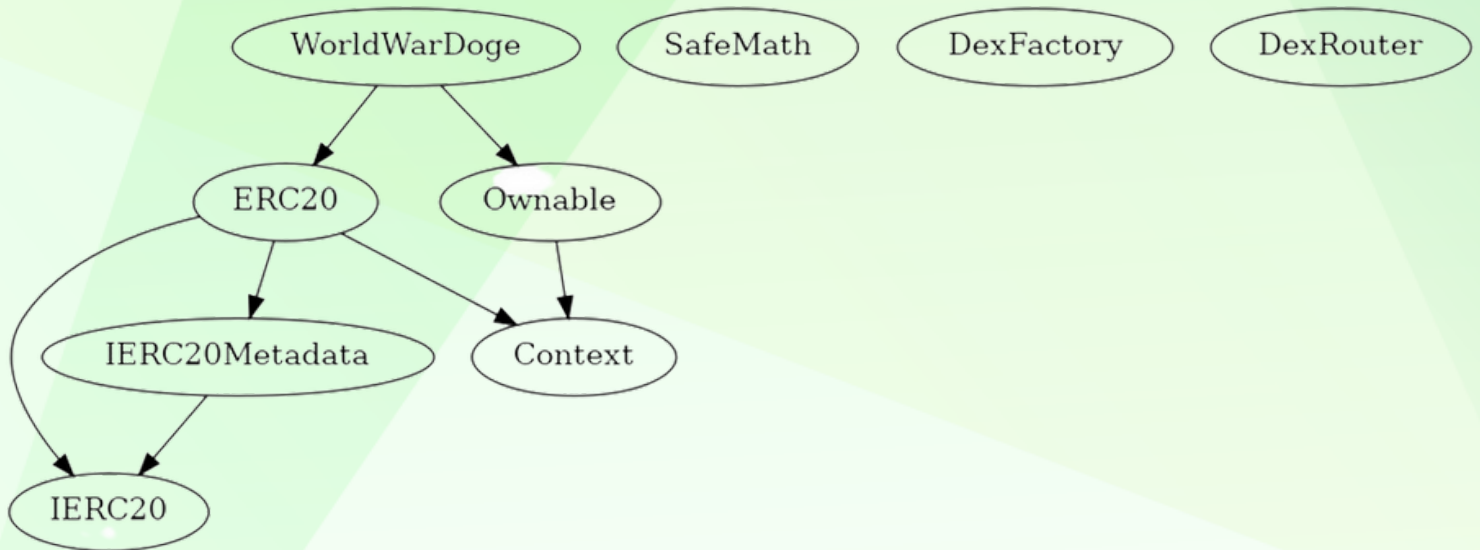
POINTS TO NOTE

- Owner is not able to change sell fees 2%
- Owner is not able to set fee on buy or transfers
- Owner is not able to blacklist an arbitrary address.
- Owner is not able to disable trades
- Owner is not able to set max buy/sell/transfer/hold amount to 0
- Owner is not able to mint new tokens
- Owner must enable trades manually

CONTRACT ASSESMENT

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
IERC20	Interface			
└	totalSupply	External ❗		NO ❗
└	balanceOf	External ❗		NO ❗
└	transfer	External ❗	🔴	NO ❗
└	allowance	External ❗		NO ❗
└	approve	External ❗	🔴	NO ❗
└	transferFrom	External ❗	🔴	NO ❗
IERC20Metadata	Interface	IERC20		
└	name	External ❗		NO ❗
└	symbol	External ❗		NO ❗
└	decimals	External ❗		NO ❗
Context	Implementation			
└	_msgSender	Internal 🔐		
└	_msgData	Internal 🔐		
ERC20	Implementation	Context, IERC20, IERC20Metadata		
└	<Constructor>	Public ❗	🔴	NO ❗
└	name	Public ❗		NO ❗
└	symbol	Public ❗		NO ❗
└	decimals	Public ❗		NO ❗
└	totalSupply	Public ❗		NO ❗
└	balanceOf	Public ❗		NO ❗
└	transfer	Public ❗	🔴	NO ❗
└	allowance	Public ❗		NO ❗
└	approve	Public ❗	🔴	NO ❗
└	transferFrom	Public ❗	🔴	NO ❗
└	increaseAllowance	Public ❗	🔴	NO ❗
└	decreaseAllowance	Public ❗	🔴	NO ❗
└	_transfer	Internal 🔐	🔴	
└	_mint	Internal 🔐	🔴	
└	_burn	Internal 🔐	🔴	
└	_approve	Internal 🔐	🔴	
└	_beforeTokenTransfer	Internal 🔐	🔴	
└	_afterTokenTransfer	Internal 🔐	🔴	
Ownable	Implementation	Context		
└	<Constructor>	Public ❗	🔴	NO ❗
└	owner	Public ❗		NO ❗

CONTRACT ASSESMENT

└	renounceOwnership	Public ❗	🔴	onlyOwner
└	transferOwnership	Public ❗	🔴	onlyOwner
└	_setOwner	Private 🔐	🔴	
SafeMath	Library			
└	tryAdd	Internal 🔒		
└	trySub	Internal 🔒		
└	tryMul	Internal 🔒		
└	tryDiv	Internal 🔒		
└	tryMod	Internal 🔒		
└	add	Internal 🔒		
└	sub	Internal 🔒		
└	mul	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
└	sub	Internal 🔒		
└	div	Internal 🔒		
└	mod	Internal 🔒		
DexFactory	Interface			
└	createPair	External ❗	🔴	NO❗
DexRouter	Interface			
└	factory	External ❗		NO❗
└	WETH	External ❗		NO❗
└	addLiquidityETH	External ❗	💵	NO❗
└	swapExactTokensForETHSupportingFeeOnTransferTokens	External ❗	🔴	NO❗
WorldWarDoge	Implementation	ERC20, Ownable		
└	<Constructor>	Public ❗	🔴	ERC20
└	enableTrading	External ❗	🔴	onlyOwner
└	setWhitelistStatus	External ❗	🔴	onlyOwner
└	checkWhitelist	External ❗		NO❗
└	_takeTax	Internal 🔒	🔴	
└	_transfer	Internal 🔒	🔴	
└	withdrawStuckETH	External ❗	🔴	onlyOwner
└	withdrawStuckTokens	External ❗	🔴	onlyOwner
└	<Receive Ether>	External ❗	💵	NO❗

CONTRACT ASSESMENT

Legend

Symbol	Meaning
🔴	Function can modify state
💵	Function is payable

STATIC ANALYSIS

```
Context._msgData() (contracts/Token.sol#31-33) is never used and should be removed
ERC20._burn(address,uint256) (contracts/Token.sol#139-154) is never used and should be removed
SafeMath.add(uint256,uint256) (contracts/Token.sol#249-251) is never used and should be removed
SafeMath.div(uint256,uint256) (contracts/Token.sol#261-263) is never used and should be removed
SafeMath.div(uint256,uint256,string) (contracts/Token.sol#276-281) is never used and should be removed
SafeMath.mod(uint256,uint256) (contracts/Token.sol#265-267) is never used and should be removed
SafeMath.mod(uint256,uint256,string) (contracts/Token.sol#283-288) is never used and should be removed
SafeMath.mul(uint256,uint256) (contracts/Token.sol#257-259) is never used and should be removed
SafeMath.sub(uint256,uint256) (contracts/Token.sol#253-255) is never used and should be removed
SafeMath.sub(uint256,uint256,string) (contracts/Token.sol#269-274) is never used and should be removed
SafeMath.tryAdd(uint256,uint256) (contracts/Token.sol#208-214) is never used and should be removed
SafeMath.tryDiv(uint256,uint256) (contracts/Token.sol#235-240) is never used and should be removed
SafeMath.tryMod(uint256,uint256) (contracts/Token.sol#242-247) is never used and should be removed
SafeMath.tryMul(uint256,uint256) (contracts/Token.sol#223-233) is never used and should be removed
SafeMath.trySub(uint256,uint256) (contracts/Token.sol#216-221) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

Pragma version^0.8.17 (contracts/Token.sol#6) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.20 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Low level call in WorldWarDoge.withdrawStuckETH() (contracts/Token.sol#402-408):
        - (success) = address(msg.sender).call{value: balance}() (contracts/Token.sol#406)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Function DexRouter.WETH() (contracts/Token.sol#298) is not in mixedCase
Parameter WorldWarDoge.setWhitelistStatus(address,bool)._wallet (contracts/Token.sol#360) is not in mixedCase
Parameter WorldWarDoge.setWhitelistStatus(address,bool)._status (contracts/Token.sol#360) is not in mixedCase
Parameter WorldWarDoge.checkWhitelist(address)._wallet (contracts/Token.sol#365) is not in mixedCase
Parameter WorldWarDoge.withdrawStuckTokens(address).ERC20_token (contracts/Token.sol#410) is not in mixedCase
Constant WorldWarDoge._totalSupply (contracts/Token.sol#319) is not in UPPER_CASE_WITH_UNDERSCORES
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

WorldWarDoge.burnAddress (contracts/Token.sol#336) should be constant
WorldWarDoge.sellTaxes (contracts/Token.sol#326) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant
```

Result => A static analysis of contract's source code has been performed using slither,
No major issues were found in the output

FUNCTIONAL TESTING

Router (PCS V2):

0xD99D1c33F9fC3444f8101754aBC46c52416550D1

1- Adding liquidity (passed):

https://testnet.bscscan.com/tx/0x00334c01765920eb6e98d2b7a66087
68689f5fa5403cadcfdd6f0fc6d50e9e97

2- Buying when excluded (0% tax) (passed):

https://testnet.bscscan.com/tx/0x43b5b860fbd2c1a57ee220e497202d
e72e4644ae99ccbb087eb50acc87f40e25

3- Selling when excluded (0% tax) (passed):

https://testnet.bscscan.com/tx/0x951f9548f01668694f25767988702e
fd13e5f4fb53b37b752cfee26c20784f8e

4- Transferring when excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0x3e2797d35d5141230584a5fd031816
57d48f42f4b251101d87205c09a54bcfc8

5- Buying when not excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0x0753929a51e54477514dc4aa02232b
6eded4560a7560b92827fd8a83469a8b42

6- Selling when not excluded from fees (2% tax) (passed):

https://testnet.bscscan.com/tx/0xefc1cb807f77705df2c489efdb1e0a3
a3b411ffc3a96036b960c9a8c347a4f86

FUNCTIONAL TESTING

7- Transferring when not excluded from fees (0% tax) (passed):

https://testnet.bscscan.com/tx/0x02630ea5f07bb9777c7271fad145c48
75b63f252a22fc5bf1cb525edf5b5699c

8- Burns (passed):

https://testnet.bscscan.com/tx/0xefc1cb807f77705df2c489efdb1e0a3
a3b411ffc3a96036b960c9a8c347a4f86

FUNCTIONAL TESTING

Centralization – Trades must be enabled

Severity: High
function: enableTrading
Status: Not Resolved

Overview:

The smart contract owner must enable trades for holders. If trading remain disabled, no one would be able to buy/sell/transfer tokens.

```
function enableTrading() external onlyOwner {
    require(!tradingEnabled, "Trading is already enabled");
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Suggestion

To mitigate this centralization issue, we propose the following options:

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3. Transfer ownership to a trusted and valid 3rd party in order to guarantee enabling of the trades

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