



Building the Futuristic **Blockchain Ecosystem**

Audit Report FOR



World War 4

OVERVIEW

The Expelee team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analysed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks. According to the smart contract audit:

 Audit Result	Passed
 KYC Verification	To be done yet
 Audit Date	20 Sep 2022

Why Passed with medium risk?

all the codebase has been reviewed, there was no issues that could disable the system, in terms of trading & centralization issues, there is a reasonable limit for buy & sell tax (6% maximum each), owner did not have privileges to disable trades or limit a user from buying/selling/transferring his/her tokens. the only concern is that owner currently holds 100% of total supply, this should not be a high risk concern as token just deployed and we are at very first steps

-Team Expelee

PROJECT DESCRIPTION

World War 4

One of the biggest goals of World War 4 is to create a gameplay that combines 2 features above and attracts all players.

Thereby, the game itself can create a community that balances between playing and earning.



worldwar4.us



WW4Announcment



WW4_official

*It's always good to check the social profiles of the project,
before making your investment.*

-Team Expelee

CONTRACT DETAILS

Contract Name

WORLDWAR4TOKEN

Token Type

ERC20

Network

BSC

Language

Solidity

Contract Address (Verified)

0xea258F698773e64ab508C8D87eb87D17ED14d97c

Total Supply

1,000,000,000

Decimals

18

Compiler

v0.8.7+commit.e28d00a7

License

MIT license

Contract SHA-256 Checksum:

bae375669a4ba371472f5f913666e4c5005c6b6feb557311ffdb80fc98e38132

Token Name

World War 4 Token

Token Symbol

WW4

AUDIT METHODOLOGY



Audit Details

Our comprehensive audit report provides a full overview of the audited system's architecture, smart contract codebase, and details on any vulnerabilities found within the system.



Audit Goals

The audit goal is to ensure that the project is built to protect investors and users, preventing potentially catastrophic vulnerabilities after launch, that lead to scams and rugpulls.



Code Quality

Our analysis includes both automatic tests and manual code analysis for the following aspects:

- Exploits
- Back-doors
- Vulnerability
- Accuracy
- Readability



Tools

- DE
- Open Zeppelin
- Code Analyzer
- Solidity Code
- Compiler
- Hardhat

FUNCTION OVERVIEW

Can Take Back Ownership	Not Detected
Owner Change Balance	Not Detected
Blacklist	Not Detected
Modify Fees	Detected
Proxy	Not Detected
Whitelisted	Detected
Anti-Whale	Not Detected
Trading Cooldown	Not Detected
Transfer Pausable	Not Detected
Cannot Sell All	Not Detected
Hidden Owner	Not Detected
Mint	Not Detected

OWNER CURRENTLY HOLDS 100% OF TOTAL SUPPLY, TOKEN DISTRIBUTION TO HAPPEN YET

VULNERABILITY CHECKLIST

Design Logic	Passed
Compiler warnings.	Passed
Private user data leaks	Passed
Timestamp dependence	Passed
Integer overflow and underflow	Passed
Race conditions & reentrancy. Cross-function race conditions	Passed
Possible delays in data delivery	Passed
Oracle calls	Passed
Front running	Passed
DoS with Revert	Passed
DoS with block gas limit	Passed
Methods execution permissions	Passed
Economy model	Passed
Impact of the exchange rate on the logic	Passed
Malicious Event log	Passed
Scoping and declarations	Passed
Uninitialized storage pointers	Passed
Arithmetic accuracy	Passed
Cross-function race conditions	Passed
Safe Zeppelin module	Passed
Fallback function security	Passed

RISK CLASSIFICATION

When performing smart contract audits, our specialists look for known vulnerabilities as well as logical and access control issues within the code. The exploitation of these issues by malicious actors may cause serious financial damage to projects that failed to get an audit in time. We categorize these vulnerabilities by the following levels:

High Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

Medium Risk

Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

Low Risk

Issues on this level are minor details and warning that can remain unfixed.

Informational

Information level is to offer suggestions for improvement of efficacy or security for features with a risk free factor.

AUDIT SUMMARY

Ownership:

current owner of WW4 is:

0xf8dbc8eeb851dfda4aacd8b76fb7f689a3d5fd9c

Owner can:

change fees but not more than 6% (12% in total)

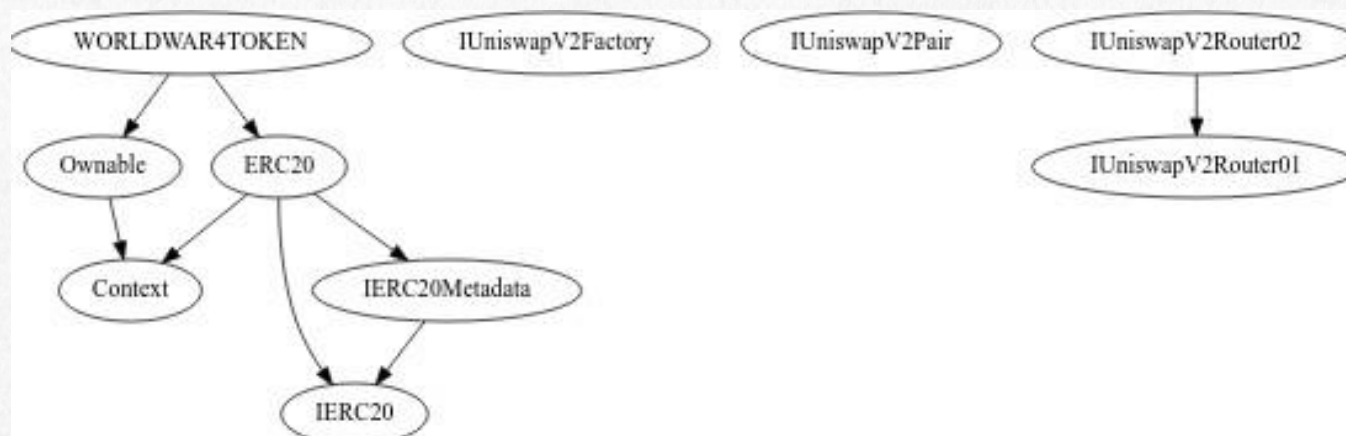
exclude and include wallets from taxes

set a threshold for swap and liquify amount

Contract & Inheritance Tree

all of below contracts are in this audit scope

WORLDWAR4TOKEN.sol



Local Blockchain Launch:

We added 200BNB with 10% of tokens as liquidity to uniswap pools, we performed 10 buys and 10 sells, here is the results:

as you can see in the pictures, taxes are getting accumulated in contract, a portion of them (20%) are sent to **Game** wallet.

you can also see that other 80% are accumulated inside the contract and after reaching a threshold amount, they get swapped to BNB and then sent to **Marketing** wallet

Sells

```
yarn run v1.22.15
warning ../.././package.json: No license field
$ hh run utils/Actions/sell.js --network localhost
0xf2AB1abFd8630e88c46197473EF260C9f9E016Af
● Action : Sell
  • Seller : 0x3C44CdDdB6a900fa2b585dd299e03d12FA4293BC
  • Sell Amount : 100000.0
  • Sell Tax : -66.69 %
  • Gas Used : 243331
  • Block Number : 35
  • Monitoring Wallets:
Contract : 2400.0 World War 4 Token
Contract : 0.0 ETH
Game Wallet : 18024.13309385919448274 World War 4 Token
Marketing Wallet : 0.147319967788552789 ETH
=====
● Action : Sell
  • Seller : 0x90F79bf6EB2c4f870365E785982E1f101E93b906
  • Sell Amount : 100000.0
  • Sell Tax : 3 %
  • Gas Used : 151765
  • Block Number : 37
  • Monitoring Wallets:
Contract : 4800.0 World War 4 Token
Contract : 0.0 ETH
Game Wallet : 18624.13309385919448274 World War 4 Token
Marketing Wallet : 0.147319967788552789 ETH
=====
● Action : Sell
  • Seller : 0x15d34AAf54267DB7D7c367839AAf71A00a2C6A65
  • Sell Amount : 100000.0
  • Sell Tax : 3 %
  • Gas Used : 151765
  • Block Number : 39
  • Monitoring Wallets:
Contract : 7200.0 World War 4 Token
Contract : 0.0 ETH
```


Buys

```
yarn run v1.22.15
warning ../../package.json: No license field
$ hh run utils/Actions/buy.js --network localhost
● Action : Buy
Trying to buy : 237837.382668510941701391 WW4
  • Buyer : 0x3C44CdDd86a900fa2b585dd299e03d12FA4293BC
  • Received Amount : 230702.26118845561345035 WW4
  • Buy Tax : 2.99 %
  • Gas Used : 138251
  • Monitored Wallets :
Contract : 58363.341751150046398338 WW4
Contract : 0.0 ETH
Game Wallet : 14590.835437787511599579 WW4
Marketing Wallet : 0.0 ETH
=====
● Action : Buy
Trying to buy : 236681.750746163536852748 WW4
  • Buyer : 0x90F79bf6EB2c4f870365E785982E1f101E93b906
  • Received Amount : 229581.298223778630747166 WW4
  • Buy Tax : 2.99 %
  • Gas Used : 138263
  • Monitored Wallets :
Contract : 64043.703769057971282804 WW4
Contract : 0.0 ETH
Game Wallet : 16010.925942264492820695 WW4
Marketing Wallet : 0.0 ETH
=====
● Action : Buy
Trying to buy : 235534.525265783610340917 WW4
  • Buyer : 0x15d34AAf54267DB7D7c367839AAf71A00a2C6A65
  • Received Amount : 228468.48950781010203069 WW4
  • Buy Tax : 2.99 %
  • Gas Used : 138263
  • Monitored Wallets :
Contract : 69696.532375436777930986 WW4
Contract : 0.0 ETH
Game Wallet : 17424.13309385919448274 WW4
Marketing Wallet : 0.0 ETH
=====
```

MANUAL AUDIT

Severity Criteria

Expelee assesses the severity of disclosed vulnerabilities according to a methodology based on [OWASP](#) standards.

Vulnerabilities are divided into three primary risk categories: . **high, medium, low**

High-level considerations for vulnerabilities span the following key areas when conducting assessments:

- Malicious Input Handling
- Escalation of privileges
- Arithmetic
- Gas use

Overall Risk Severity				
Impact	HIGH	Medium	High	Critical
	MEDIUM	Low	Medium	High
	LOW	Note	Low	Medium
		LOW	MEDIUM	HIGH
	Likelihood			

Findings Summary

High Risk Findings: 0

Medium Risk Findings: 1

Low Risk Findings : 1

Suggestions & Discussions : 3

Gas Optimizations : 4

High Risk Findings

No high risks finding

Medium Risk Findings

Centralization - **Owner** currently holds **100%** of total supply. however, this should not be a high risk concern as token just deployed and we are at very first steps

Low Risk Findings

Logical - setting marketing wallet to a contract that doesn't accept ether can disable trades after contract balance reached a threshold

```
function changeWallets(address _marketingWallet, address _gameWallet) external
    onlyOwner
{
    marketingWallet = address(_marketingWallet); gameWallet =
    address(_gameWallet);
    emit MarketingWalletChanged(marketingWallet);
}
```

Gas Optimizations:

tradecooldown variable never used inside contract, delete this variable this line

of code is duplicated in constructor:

```
_isExcludedFromFees[address(this)] = true;
```

set **setAutomatedMarketMakerPair** as external, this function is public right now, but never used inside contract

function **swapAndLiquify** is never used inside the contract

Suggestions:

indexed keyword is not used in event arguments, for example at:

MarketingWalletChanged, **SwapAndLiquify**, use indexed keyword, this makes accessing event arguments much easier

Since not all of pancakeswap functions are needed in the contract, try to only import necessary functions like:

swapExactTokensForETHSupportingFeeOnTransferTokens

swapExactETHForTokens

addLiquidityETH

use camel case to define variables : **lasttrade** => lastTrade doing this makes variables more readable

ABOUT EXPELEE

Expelee is a product-based aspirational Web3 Start-up. Coping up with numerous solutions for blockchain Security and constructing a Web3 Ecosystem from Deal making platform to developer hosting open platform, while also developing our own commercial and sustainable blockchain.

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