



Cyberscope

## Audit Report

# Opulence OPEC

April 2022

Type ERC20

Network AVAX

Address 0x7f03D24d2fC79fECF668485e1c4e4C4B21044B42

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# Contract Review

<b>Contract Name</b>	OPEC_V2
<b>Compiler Version</b>	v0.8.9+commit.e5eed63a
<b>Optimization</b>	2000 runs
<b>Licence</b>	MIT
<b>Explorer</b>	<a href="https://snowtrace.io/address/0x7f03D24d2fC79fECF668485e1c4e4C4B21044B42">https://snowtrace.io/address/0x7f03D24d2fC79fECF668485e1c4e4C4B21044B42</a>
<b>Symbol</b>	OPEC
<b>Decimals</b>	18
<b>Total Supply</b>	6,000,000
<b>Domain</b>	opulence.network

## Source Files

Filename	SHA256
contract.sol	25385e490bbc6d5fd2e6dd5be01aefe43f3b1832266b6532b7c0ff57059188ba

## Audit Updates

Initial Audit	17th April 2022
Corrected	

# Contract Analysis

● Critical   ● Medium   ● Minor   ● Pass

Severity	Code	Description
●	ST	Contract Owner is not able to stop or pause transactions
●	OCTD	Contract Owner is not able to transfer tokens from specific address
●	OTUT	Owner Transfer User's Tokens
●	ELFM	Contract Owner is not able to increase fees more than a reasonable percent (25%)
●	ULTW	Contract Owner is not able to increase the amount of liquidity taken by dev wallet more than a reasonable percent
●	MT	Contract Owner is not able to mint new tokens
●	BT	Contract Owner is not able to burn tokens from specific wallet
●	BC	Contract Owner is not able to blacklist wallets from selling

## ST - Stop Transactions

Criticality	critical
Location	contract.sol#L1142,1154

### Description

The contract owner has the authority to stop the sales for all users excluding the owner. The owner may take advantage of it by setting the `_liquidity_sell_tax` to a high value. This will cause the contract to operate as a honeypot.

```
if (!_isExcludedFromFee[from] && to == address(_uniswapV2Pair)) {  
    fees = (amount / 100) * (_liquidity_sell_tax - passedDays * 10);  
    amount = amount.sub(fees);  
}
```

The contract owner has the authority to stop transactions for all users excluding the owner. The owner may take advantage of it by setting the `_balanceLimit` to zero.

```
if (!_isExcludedFromFee[to] && _isMaxLimit) {  
    require(amount + balanceOf(to) <= _balanceLimit, "OPEC: TRANSFER RECIPIENT  
BALANCE LIMIT");  
}
```

### Recommendation

The contract could embody a check for not allowing setting the `_maxTxAmount` less than a reasonable amount. A suggested implementation could check that the maximum amount should be more than a fixed percentage of the total supply.

Read about the fees manipulation in the [Exceed Limit Fees Manipulation](#) section.

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.

## ELFM - Exceed Limit Fees Manipulation

Criticality	critical
Location	contract.sol#L1115

### Description

The contract owner has the authority to increase over the allowed limit of 25%. The owner may take advantage of it by calling the `setUintParameter` function with `PROTOCOL_PARAMETER.SELL_TAX` and a high percentage value.

```
function setUintParameter(PROTOCOL_PARAMETER _parameter, uint256 _value)
external onlyManager {
    if (_parameter == PROTOCOL_PARAMETER.SELL_TAX) {
        _liquidity_sell_tax = _value;
    } else if (_parameter == PROTOCOL_PARAMETER.LIMIT_AMOUNT) {
        _balanceLimit = _value;
    } else if (_parameter == PROTOCOL_PARAMETER.LIMIT_BUY) {
        _maxBuyLimit = _value;
    }
}
```

### Recommendation

The contract could embody a check for the maximum acceptable value.

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.



## MT - Mint Tokens

<b>Criticality</b>	critical
<b>Location</b>	contract.sol#L1087

### Description

The contract owner has the authority to mint tokens. The owner may take advantage of it by calling the `setTaxFeePercent` function. As a result the contract tokens will be highly inflated

```
function mint(address account_, uint256 amount_) external onlyPolicy {  
    _mint(account_, amount_);  
}
```

### Recommendation

The owner should carefully manage the credentials of the owner's account. We advised considering an extra-strong security mechanism that the actions may be quarantined by many users instead of one. The owner could also renounce the contract ownership for a period of time or pass the access to the zero address.

## BC - Blacklisted Contracts

Criticality	medium
Location	contract.sol#L1099

### Description

The contract owner has the authority to stop contracts from transactions. The owner may take advantage of it by calling the `setCheckParameter` function.

```
require(!_isBlacklisted[from] && !_isBlacklisted[to], "OPEC: TRANSFER  
BLACKLIST");
```

### 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

Severity	Code	Description
●	L01	Public Function could be Declared External
●	L02	State Variables could be Declared Constant
●	L04	Conformance to Solidity Naming Conventions
●	L06	Missing Events Access Control
●	L09	Dead Code Elimination
●	L11	Unnecessary Boolean equality
●	L13	Divide before Multiply Operation

## L01 - Public Function could be Declared External

**Criticality**

minor

**Location**

contract.sol#L658,666,683,690,715,728,745,768,797,824 and 3 more

### Description

Public functions that are never called by the contract should be declared external to save gas.

```
transferOwnership  
renounceOwnership  
owner  
decreaseAllowance  
increaseAllowance  
transferFrom  
approve  
allowance  
transfer  
...
```

### Recommendation

Use the external attribute for functions never called from the contract

## L02 - State Variables could be Declared Constant

**Criticality**

minor

**Location**

contract.sol#L1033

### Description

Constant state variables should be declared constant to save gas.

```
_isSwapping
```

### Recommendation

Add the constant attribute to state variables that never change.

## L04 - Conformance to Solidity Naming Conventions

**Criticality**

minor

**Location**

contract.sol#L8,238,240,271,340,1091,1095,1099,1107,1115 and 22 more

### 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.

```
_liquidity_sell_tax  
_maxBuyLimit  
_balanceLimit  
_launchTime  
_isLaunched  
_isMaxLimit  
_isSwapping  
_isTaxable  
_policy  
...
```

### Recommendation

Follow the Solidity naming convention.

<https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions>

## L06 - Missing Events Access Control

**Criticality**

minor

**Location**

contract.sol#L1091

### Description

Detected missing events for critical access control parameters. There are functions that have no event emitted, so it is difficult to track off-chain changes.

```
_policy = _address
```

### Recommendation

Emit an event for critical parameter changes.

## L09 - Dead Code Elimination

<b>Criticality</b>	minor
<b>Location</b>	contract.sol#L902

### Description

Functions that are not used in the contract, and make the code's size bigger.

```
_burn
```

### Recommendation

Remove unused functions.



## L11 - Unnecessary Boolean equality

**Criticality**

minor

**Location**

contract.sol#L1043

### Description

The comparison to boolean constants is redundant. Boolean constants can be used directly and do not need to be compared to true or false.

```
require(bool,string)(_managers[msg.sender] == true,NOT MANAGER)
```

### Recommendation

Remove the equality to the boolean constant.

## L13 - Divide before Multiply Operation

**Criticality**

minor

**Location**

contract.sol#L1136

### Description

Performing divisions before multiplications may cause lose of prediction.

```
fees = (amount / 100) * (_liquidity_sell_tax - passedDays * 10)
```

### Recommendation

The multiplications should be prior to the divisions.

# Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
<b>IJoeRouter01</b>	Interface			
	factory	External		-
	WAVAX	External		-
	addLiquidity	External	✓	-
	addLiquidityAVAX	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityAVAX	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityAVAXWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactAVAXForTokens	External	Payable	-
	swapTokensForExactAVAX	External	✓	-
	swapExactTokensForAVAX	External	✓	-
	swapAVAXForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-
	getAmountsIn	External		-
<b>IJoeRouter02</b>	Interface	IJoeRouter01		
	removeLiquidityAVAXSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityAVAXWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactAVAXForTokensSupporting	External	Payable	-

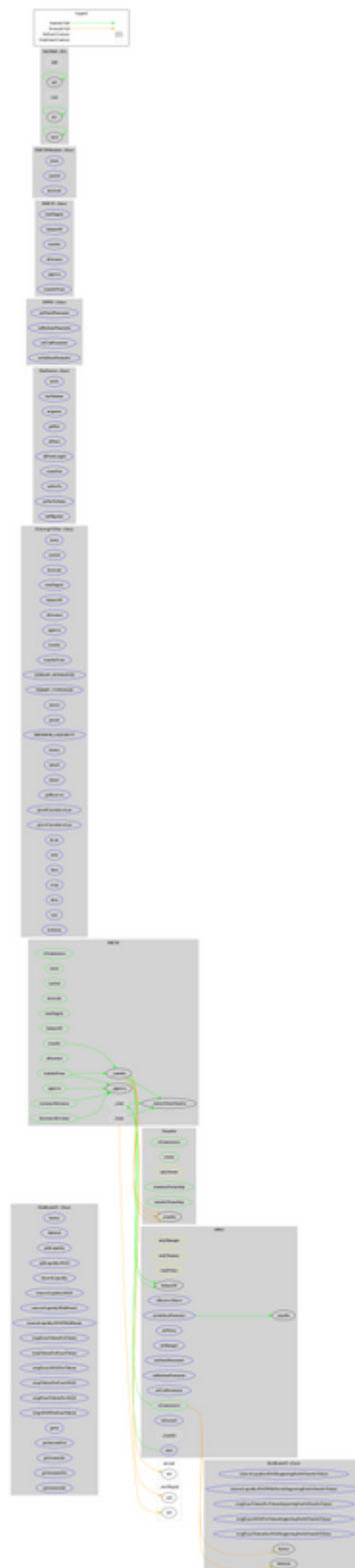
	FeeOnTransferTokens			
	swapExactTokensForAVAXSupporting FeeOnTransferTokens	External	✓	-
<b>IUniswapV2Pair</b>	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-
	PERMIT_TYPEHASH	External		-
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-
	mint	External	✓	-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
<b>IJoeFactory</b>	Interface			
	feeTo	External		-

	feeToSetter	External		-
	migrator	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
	setMigrator	External	✓	-
<b>IOPEC</b>	Interface			
	setCheckParameter	External	✓	-
	setBooleanParameter	External	✓	-
	setUintParameter	External	✓	-
	setAddressParameter	External	✓	-
<b>IERC20</b>	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
<b>IERC20Metadata</b>	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
<b>SafeMath</b>	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		

	div	Internal		
	mod	Internal		
	mod	Internal		
<b>ERC20</b>	Implementation	IERC20, IERC20Meta data		
	<Constructor>	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	✓	
<b>Ownable</b>	Implementation			
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
<b>OPEC</b>	Implementation	IOPEC, ERC20, Ownable		
	<Constructor>	Public	✓	ERC20
	<Receive Ether>	External	Payable	-
	mint	External	✓	onlyPolicy

	setPolicy	External	✓	onlyOwner
	setManager	External	✓	onlyOwner
	setCheckParameter	External	✓	onlyManager
	setBooleanParameter	External	✓	onlyManager
	setUintParameter	External	✓	onlyManager
	setAddressParameter	External	✓	onlyManager
	setLaunch	External	✓	onlyManager
	_transfer	Internal	✓	

# Contract Flow





## Domain Info

<b>Domain Name</b>	opulence.network
<b>Registry Domain ID</b>	ca60e761bf374ab8b76e8e0a6c6442e3-DONUTS
<b>Creation Date</b>	2021-11-28T19:20:22Z
<b>Updated Date</b>	2021-12-03T19:21:08Z
<b>Registry Expiry Date</b>	2022-11-28T19:20:22Z
<b>Registrar WHOIS Server</b>	whois.tucows.com
<b>Registrar URL</b>	<a href="http://www.tucows.com">http://www.tucows.com</a>
<b>Registrar</b>	Tucows Domains Inc.
<b>Registrar IANA ID</b>	69

The domain has been created 5 months before the creation of the audit. It will expire in 7 months.

There is no public billing information, the creator is protected by the privacy settings.

## Summary

There are some functions that can be abused by the owner, like manipulating fees, blacklisting addresses, stopping transactions and minting tokens. The contract can be converted into a honeypot and prevent users from selling if the owner abuses the admin functions. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

# Disclaimer

All the content provided in this document is for general information only and should not be used as financial advice or a reason to buy any investment.

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The Cyberscope team disclaims any liability for the resulting losses.

# About Cyberscope

Coinscope audit and K.Y.C. service has been rebranded to Cyberscope.

Coinscope is the leading early coin listing, voting and auditing authority firm. The audit process is analyzing and monitoring many aspects of the project. That way, it gives the community a good sense of security using an informative report and a generic score.

Cyberscope and Coinscope are aiming to make crypto discoverable and efficient globally. They provides all the essential tools to assist users draw their own conclusions.



The Cyberscope team

<https://www.cyberscope.io>