



Cyberscope

# Audit Report

## PiUnion

March 2022

Type           BEP20

Network       BSC

Address       0xaAd9e4FD545cB2518e5C0ee0d3dAD14D78cE4033

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## Contract Review

<b>Contract Name</b>	PiUnion
<b>Compiler Version</b>	v0.8.7+commit.e28d00a7
<b>Optimization</b>	200 runs
<b>Licence</b>	None
<b>Explorer</b>	<a href="https://bscscan.com/token/0xaAd9e4FD545cB2518e5C0ee0d3dAD14D78cE4033">https://bscscan.com/token/0xaAd9e4FD545cB2518e5C0ee0d3dAD14D78cE4033</a>
<b>Symbol</b>	PiUnion
<b>Decimals</b>	9
<b>Total Supply</b>	650,000,000,000
<b>Domain</b>	piunion.org

## Source Files

<b>Filename</b>	<b>SHA256</b>
<b>contract.sol</b>	4b7b6aff75da7b4d22683516e083719737495e513cfec9302ec44d181054864f

## Audit Updates

<b>Initial Audit</b>	28th March 2022
<b>Corrected</b>	

# 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	informative
Location	contract.sol#L658,760

### 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 `_totalTaxIfSelling` to a high percentage value.

```
else if(isMarketPair[recipient]) {  
    feeAmount = amount.mul(_totalTaxIfSelling).div(100);  
}
```

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 `_maxTxAmount` to zero.

```
if(!isTxLimitExempt[sender] && !isTxLimitExempt[recipient]) {  
    require(amount <= _maxTxAmount, "Transfer amount exceeds the maxTxAmount.");  
}
```

### Recommendation

The contract has renounced the ownership. Hence there are no threads.

## ELFM - Exceed Limit Fees Manipulation

<b>Criticality</b>	informative
<b>Location</b>	contract.sol#L545,553

### 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 `setSellTaxes` function with a high percentage value.

```
function setSellTaxes(uint256 newLiquidityTax, uint256 newMarketingTax, uint256
newTeamTax) external onlyOwner() {
    _sellLiquidityFee = newLiquidityTax;
    _sellMarketingFee = newMarketingTax;
    _sellTeamFee = newTeamTax;

    _totalTaxIfSelling =
    _sellLiquidityFee.add(_sellMarketingFee).add(_sellTeamFee);
}
```

### Recommendation

The contract has renounced the ownership. Hence there are no threads.

# 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
●	L05	Unused State Variable
●	L07	Missing Events Arithmetic
●	L09	Dead Code Elimination



## L01 - Public Function could be Declared External

<b>Criticality</b>	minor
<b>Location</b>	contract.sol#L161,166,172,482,486,490,494,502,506,511 and 10 more

### Description

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

```
transferFrom
transfer
changeRouterVersion
getCirculatingSupply
setSwapAndLiquifyByLimitOnly
setSwapAndLiquifyEnabled
setIsExcludedFromFee
setMarketPairStatus
approve
...
```

### Recommendation

Use the external attribute for functions never called from the contract

## L02 - State Variables could be Declared Constant

**Criticality**

minor

**Location**

contract.sol#L142,141,385,383,384

### Description

Constant state variables should be declared constant to save gas.

```
_symbol  
_name  
_decimals  
asdasd  
_lockTime
```

### Recommendation

Add the constant attribute to state variables that never change.

## L04 - Conformance to Solidity Naming Conventions

**Criticality**

minor

**Location**

contract.sol#L209,210,226,245,597,391,399,400,401,403 and 10 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.

```
_walletMax  
_maxTxAmount  
_totalDistributionShares  
_totalTaxIfSelling  
_totalTaxIfBuying  
_teamShare  
_marketingShare  
_liquidityShare  
_sellTeamFee  
...
```

### Recommendation

Follow the Solidity naming convention.

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

## L05 - Unused State Variable

**Criticality**

minor

**Location**

contract.sol#L141,142

### Description

There are segments that contain unused state variables.

```
_lockTime  
asdasd
```

### Recommendation

Remove unused state variables.

## L07 - Missing Events Arithmetic

**Criticality**

minor

**Location**

contract.sol#L545,553,561,569,581,585

### Description

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

```
minimumTokensBeforeSwap = newLimit
_walletMax = newLimit
_maxTxAmount = maxTxAmount
_liquidityShare = newLiquidityShare
_totalTaxIfSelling = _sellLiquidityFee.add(_sellMarketingFee).add(_sellTeamFee)
_totalTaxIfBuying = _buyLiquidityFee.add(_buyMarketingFee).add(_buyTeamFee)
```

### Recommendation

Emit an event for critical parameter changes.

## L09 - Dead Code Elimination

<b>Criticality</b>	minor
<b>Location</b>	contract.sol#L119,102,106,110,114,83,94

### Description

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

```
sendValue  
isContract  
functionCallWithValue  
functionCall  
_functionCallWithValue
```

### Recommendation

Remove unused functions.

# Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
<b>Context</b>	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
<b>IERC20</b>	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
<b>SafeMath</b>	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
	mod	Internal		
<b>Address</b>	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	

	_functionCallWithValue	Private	✓	
<b>Ownable</b>	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	waiveOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	getTime	Public		-
<b>IUniswapV2Factory</b>	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	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		-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
<b>IUniswapV2Router01</b>	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-
	getAmountsIn	External		-

IUniswapV2Router02	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
PiUnion	Implementation	Context, IERC20, Ownable		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	allowance	Public		-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	minimumTokensBeforeSwapAmount	Public		-
	approve	Public	✓	-
	_approve	Private	✓	
	setMarketPairStatus	Public	✓	onlyOwner
	setIsTxLimitExempt	External	✓	onlyOwner
	setIsExcludedFromFee	Public	✓	onlyOwner
	setBuyTaxes	External	✓	onlyOwner
	setSellTaxes	External	✓	onlyOwner
	setDistributionSettings	External	✓	onlyOwner
	setMaxTxAmount	External	✓	onlyOwner
	enableDisableWalletLimit	External	✓	onlyOwner
	setIsWalletLimitExempt	External	✓	onlyOwner
	setWalletLimit	External	✓	onlyOwner

	setNumTokensBeforeSwap	External	✓	onlyOwner
	setMarketingWalletAddress	External	✓	onlyOwner
	setTeamWalletAddress	External	✓	onlyOwner
	setSwapAndLiquifyEnabled	Public	✓	onlyOwner
	setSwapAndLiquifyByLimitOnly	Public	✓	onlyOwner
	getCirculatingSupply	Public		-
	transferToAddressETH	Private	✓	
	changeRouterVersion	Public	✓	onlyOwner
	<Receive Ether>	External	Payable	-
	transfer	Public	✓	-
	transferFrom	Public	✓	-
	_transfer	Private	✓	
	_basicTransfer	Internal	✓	
	swapAndLiquify	Private	✓	lockTheSwap
	swapTokensForEth	Private	✓	
	addLiquidity	Private	✓	
	takeFee	Internal	✓	

# Contract Flow



## Domain Info

<b>Domain Name</b>	piunion.org
<b>Registry Domain ID</b>	D402200000019431139-LROR
<b>Creation Date</b>	2022-03-27T07:10:46Z
<b>Updated Date</b>	2022-03-27T07:11:06Z
<b>Registry Expiry Date</b>	2023-03-27T07:10:46Z
<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 1 day before the creation of the audit. It will expire in 12 months.

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

## Summary

PiUnion is an interesting project that is aiming to develop an ecosystem. It has a friendly and growing community. The contract has renounced the ownership. Hence there are no functions that can be called from the contract owner.

## Disclaimer

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## 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>