Cyberscope

Audit Report

Kpro

March 2022

Type	BEP20
Network	BSC
Address	0x05D0178435adaB55B7D37D155f29d615Ea6dF202
Audited by	© cyberscope

Table of Contents

Contract Review

Contract Name	Kpro
Compiler Version	v0.7.4+commit.3f05b770
Optimization	200 runs
Licence	MIT
Explorer	https://bscscan.com/token/0x05D0178435adaB55B7D37D155f29d615Ea6dF202
Symbol	KPRO
Decimals	5
Total Supply	100,000
Domain	kpro.money

Source Files

Filename	**SHA256**
contract.sol	2b561a5c99fa75ac325a2265dc672b803c6991702c45c83debb6ac78c5037135

Audit Updates

Initial Audit	28th March 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

BC - Blacklisted Contracts

Criticality	medium
Location	contract.sol#L902

Description

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

```
    function setBotBlacklist(address _botAddress, bool _flag) external onlyOwner
{
        require(isContract(_botAddress), "Only contract address, not allowed
externally owned account");
        blacklist[_botAddress] = _flag;
    }
```

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
	MTS	Manipulate Total Supply
	CO	Code Optimization
	L01	Public Function could be Declared External
	L02	State Variables could be Declared Constant
	L04	Conformance to Solidity Naming Conventions
	L05	Unused State Variable
	L09	Dead Code Elimination
	L13	Divide before Multiply Operation
	L14	Uninitialized Variables in Local Scope

MTS - Manipulate Total Supply

Criticality	minor
Location	contract.sol#L510

Description

The total supply increased proportional to the time that has elapsed since the contract creation. This change will have a direct impact on the token price and Market Cap. This is a common feature in smart contracts called “rebase”.

```
for (uint256 i = 0; i < times; i++) {
    _totalSupply = _totalSupply
        .mul((10**RATE_DECIMALS).add(rebaseRate))
        .div(10**RATE_DECIMALS);
}
```

CO - Code Optimization

Criticality	minor
Location	contract.sol#L507

Description

There are code segments that could be optimized. A segment may be optimized so that it becomes a smaller size, consumes less memory, executes more rapidly, or performs fewer operations.

```
        if (deltaTimeFromInit < (365 days)) {
            rebaseRate = 2355;
        } else if (deltaTimeFromInit >= (365 days)) {
            rebaseRate = 211;
        } else if (deltaTimeFromInit >= ((15 * 365 days) / 10)) {
            rebaseRate = 14;
        } else if (deltaTimeFromInit >= (7 * 365 days)) {
            rebaseRate = 2;
        }
```

Recommendation

The code after the implementation of the first `else if` statement will never be reached hence can be removed. If the contract wants to take account more cases then the logic should be rewritten.

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L338,351,356,382,386,390,873,878,897

Description

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

```
setPairAddress
getLiquidityBacking
withdrawBNB
decimals
symbol
name
transferOwnership
renounceOwnership
owner
```

Recommendation

Use the external attribute for functions never called from the contract

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contract.sol#L432,433,404,402,403,425,430,423,421,424 and 2 more

Description

Constant state variables should be declared constant to save gas.

```
swapEnabled
rewardPoolFee
marketingFee
liquidityFee
kproInsuranceFundFee
feeDenominator
deflationaryFee
_symbol
_name
...
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L140,141,158,178,770,779,842,862,863,864 and 18 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.

```
_totalSupply
_lastAddLiquidityTime
_lastRebasedTime
_initRebaseStartTime
_autoAddLiquidity
_autoRebase
ZERO
DEAD
_isFeeExempt
...
```

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#L7

Description

There are segments that contain unused state variables.

```
MAX_INT256
```

Recommendation

Remove unused state variables.

L09 - Dead Code Elimination

Criticality	minor
Location	contract.sol#L35

Description

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

```
abs
```

Recommendation

Remove unused functions.

L13 - Divide before Multiply Operation

Criticality	minor
Location	contract.sol#L498,608,878

Description

Performing divisions before multiplications may cause lose of prediction.

```
liquidityBalance = _gonBalances[pair].div(_gonsPerFragment)
_gonBalances[autoLiquidityReceiver] =
_gonBalances[autoLiquidityReceiver].add(gonAmount.div(feeDenominator).mul(liqui
dityFee))
_gonBalances[address(this)] =
_gonBalances[address(this)].add(gonAmount.div(feeDenominator).mul(_rewardPoolFe
e.add(kproInsuranceFundFee)))
_gonBalances[deflationary] =
_gonBalances[deflationary].add(gonAmount.div(feeDenominator).mul(deflationaryFe
e))
feeAmount = gonAmount.div(feeDenominator).mul(_totalFee)
times = deltaTime.div(900)
```

Recommendation

The multiplications should be prior to the divisions.

L14 - Uninitialized Variables in Local Scope

Criticality	minor
Location	contract.sol#L501

Description

The are variables that are defined in the local scope and are not initialized.

```
rebaseRate
```

Recommendation

All the local scoped variables should be initialized.

Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
SafeMathInt	Library			
	mul	Internal		
	div	Internal		
	sub	Internal		
	add	Internal		
	abs	Internal		
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	transfer	External	✓	-
	approve	External	✓	-
	transferFrom	External	✓	-
IPancakeSwap Pair	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-

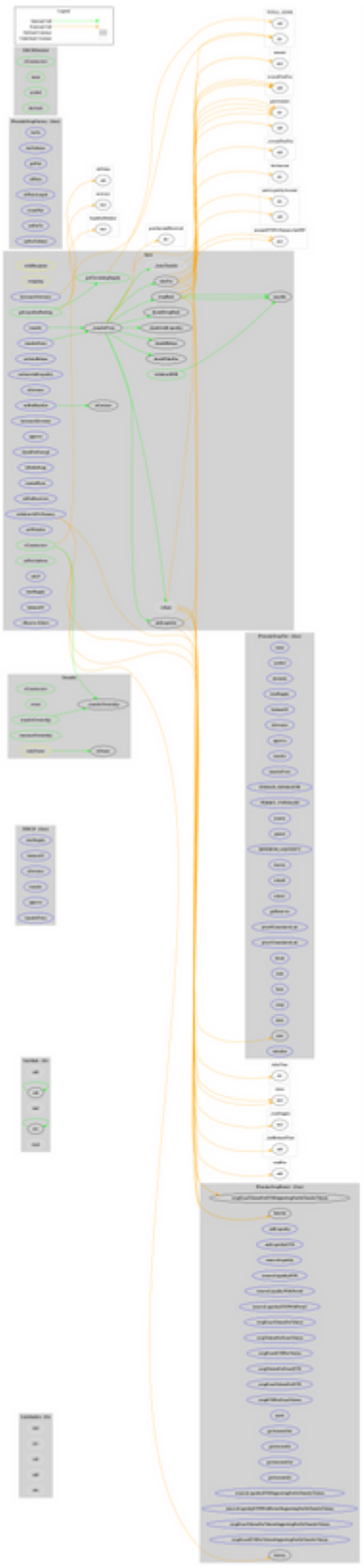
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-
	PERMIT_TYPEHASH	External		-
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-
	mint	External	✓	-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
IPancakeSwap Router	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		-
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
IPancakeSwapFactory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
Ownable	Implementation			
	<Constructor>	Public	✓	-
	owner	Public		-
	isOwner	Public		-
	renounceOwnership	Public	✓	onlyOwner

	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
ERC20Detailed	Implementation	IERC20		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
Kpro	Implementation	ERC20Detailed, Ownable		
	<Constructor>	Public	✓	ERC20Detailed Ownable
	rebase	Internal	✓	
	transfer	External	✓	validRecipient
	transferFrom	External	✓	validRecipient
	_basicTransfer	Internal	✓	
	_transferFrom	Internal	✓	
	takeFee	Internal	✓	
	addLiquidity	Internal	✓	swapping
	swapBack	Internal	✓	swapping
	withdrawAllToTreasury	External	✓	swapping onlyOwner
	shouldTakeFee	Internal		
	shouldRebase	Internal		
	shouldAddLiquidity	Internal		
	shouldSwapBack	Internal		
	setAutoRebase	External	✓	onlyOwner
	setAutoAddLiquidity	External	✓	onlyOwner
	allowance	External		-
	decreaseAllowance	External	✓	-
	increaseAllowance	External	✓	-
	approve	External	✓	-
	checkFeeExempt	External		-
	getCirculatingSupply	Public		-
	isNotInSwap	External		-

	manualSync	External	✓	-
	setFeeReceivers	External	✓	onlyOwner
	withdrawBNB	Public	✓	onlyOwner
	getLiquidityBacking	Public		-
	setWhitelist	External	✓	onlyOwner
	setBotBlacklist	External	✓	onlyOwner
	setPairAddress	Public	✓	onlyOwner
	setLP	External	✓	onlyOwner
	totalSupply	External		-
	balanceOf	External		-
	isContract	Internal		
	<Receive Ether>	External	Payable	-

Contract Flow



Domain Info

Domain Name	kpro.money
Registry Domain ID	d215e914deba4094915576f3f20556e5-DONUTS
Creation Date	2022-03-28T06:11:33Z
Updated Date	2022-03-28T06:11:36Z
Registry Expiry Date	2023-03-28T06:11:33Z
Registrar WHOIS Server	whois.namecheap.com
Registrar URL	https://www.namecheap.com/
Registrar	NameCheap, Inc.
Registrar IANA ID	1068

The domain has been created about 13 hours 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

The Smart Contract analysis reported one medium risk level issue. The contract owner can blacklist contracts. Apart from this the contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions. The contract raises the total supply and the corresponding holdings proportionally to the time that has elapsed. The taxes are fixed and can't be changed. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

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

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The Cyberscope team

https://www.cyberscope.io