



Cyberscope

Audit Report

babyluna

May 2022

Type BEP20

Network BSC

Address 0xc873A6F9FC824721458964b709877580bF53410a

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Contract Review

Contract Name	BABYTOKEN
Compiler Version	v0.8.4+commit.c7e474f2
Optimization	200 runs
Licence	MIT
Explorer	https://bscscan.com/token/0xc873A6F9FC824721458964b709877580bF53410a
Symbol	bbl
Decimals	18
Total Supply	100,000,000,000

Source Files

Filename	SHA256
contract.sol	610203b5ffcb749ab1dbe1f60aec6d1bc39148eb0ea77ce69bd935137ad22fe7

Audit Updates

Initial Audit	15th May 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

Contract Diagnostics

● Critical ● Medium ● Minor

Severity	Code	Description
●	L01	Public Function could be Declared External
●	L04	Conformance to Solidity Naming Conventions
●	L05	Unused State Variable
●	L07	Missing Events Arithmetic
●	L09	Dead Code Elimination
●	L12	Using Variables before Declaration
●	L14	Uninitialized Variables in Local Scope
●	L15	Local Scope Variable Shadowing

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L203,211,228,235,254,262,273,291,319,338,553,561,1399,1407,1424,1450,1458,1469,1487,1515,1534,1756,1764,1931,1935,1946,1954,2116,2319,2168,2187,2336,2421,2469,2724,2749,2771,2804,2830,2870,2874,2882,2894

Description

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

```
isExcludedFromDividends  
dividendTokenBalanceOf  
withdrawableDividendOf  
isExcludedFromFees  
updateGasForProcessing  
setAutomatedMarketMakerPair  
excludeMultipleAccountsFromFees  
updateUniswapV2Router  
updateDividendTracker  
...
```

Recommendation

Use the external attribute for functions never called from the contract.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L931,1315,1319,1328,1386,1391,1693,1725,1730,1774,1797,1798,1815,2106,2107,2108,2109,2168,2175,2187,2201,2086,2372,2601

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.

```
_marketingWalletAddress
_account
magnitude
_owner
_symbol
_name
_rewardToken
__DividendPayingToken_init
MINIMUM_LIQUIDITY
...
```

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#L1843,1774

Description

There are segments that contain unused state variables.

```
__gap  
MAX_INT256
```

Recommendation

Remove unused state variables.

L07 - Missing Events Arithmetic

Criticality

minor

Location

contract.sol#L2720,2786,2792,2798

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.

```
marketingFee = value
liquidityFee = value
totalFees = tokenRewardsFee.add(liquidityFee).add(marketingFee)
swapTokensAtAmount = amount
```

Recommendation

Emit an event for critical parameter changes.

L09 - Dead Code Elimination

Criticality

minor

Location

contract.sol#L845,879,859,1315,2220,416,1558,1889

Description

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

```
abs
_transfer
_burn
__Context_init
predictDeterministicAddress
cloneDeterministic
```

Recommendation

Remove unused functions.

L12 - Using Variables before Declaration

Criticality

minor

Location

contract.sol#L3036,3035,3034

Description

The contract is using a variable before the declaration. This is usually happening either if it has not been declared yet or the variable has been declared in a different scope.

```
iterations
claims
lastProcessedIndex
```

Recommendation

The variables should be declared before any usage of them.

L14 - Uninitialized Variables in Local Scope

Criticality

minor

Location

contract.sol#L3036,3034,3035

Description

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

```
claims  
iterations  
lastProcessedIndex
```

Recommendation

All the local scoped variables should be initialized.

L15 - Local Scope Variable Shadowing

Criticality

minor

Location

contract.sol#L2108,2109,2168,2175,2187,2201

Description

There are variables that are defined in the local scope containing the same name from an upper scope.

```
_owner  
_symbol  
_name
```

Recommendation

The local variables should have different names from the upper scoped variables.

Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
IERC20Metadata	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
ERC20	Implementation	Context, IERC20, IERC20Metadata		
	<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	✓	
	_afterTokenTransfer	Internal	✓	
Ownable	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	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		
Clones	Library			
	clone	Internal	✓	

	cloneDeterministic	Internal	✓	
	predictDeterministicAddress	Internal		
	predictDeterministicAddress	Internal		
IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IUniswapV2Router01	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	✓	-
IERC20Upgradeable	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
IERC20MetadataUpgradeable	Interface	IERC20Upgradeable		
	name	External		-
	symbol	External		-
	decimals	External		-
Initializable	Implementation			
ContextUpgradeable	Implementation	Initializable		
	__Context_init	Internal	✓	initializer
	__Context_init_unchained	Internal	✓	initializer
	_msgSender	Internal		
	_msgData	Internal		

ERC20Upgradable	Implementation	Initializable, ContextUpgradable, IERC20Upgradable, IERC20MetadataUpgradable		
	__ERC20_init	Internal	✓	initializer
	__ERC20_init_unchained	Internal	✓	initializer
	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	✓	
	_afterTokenTransfer	Internal	✓	
OwnableUpgradable	Implementation	Initializable, ContextUpgradable		
	__Ownable_init	Internal	✓	initializer
	__Ownable_init_unchained	Internal	✓	initializer
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_setOwner	Private	✓	

IUniswapV2Pair	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	✓	-
SafeMathInt	Library			
	mul	Internal		
	div	Internal		
	sub	Internal		
	add	Internal		
	abs	Internal		

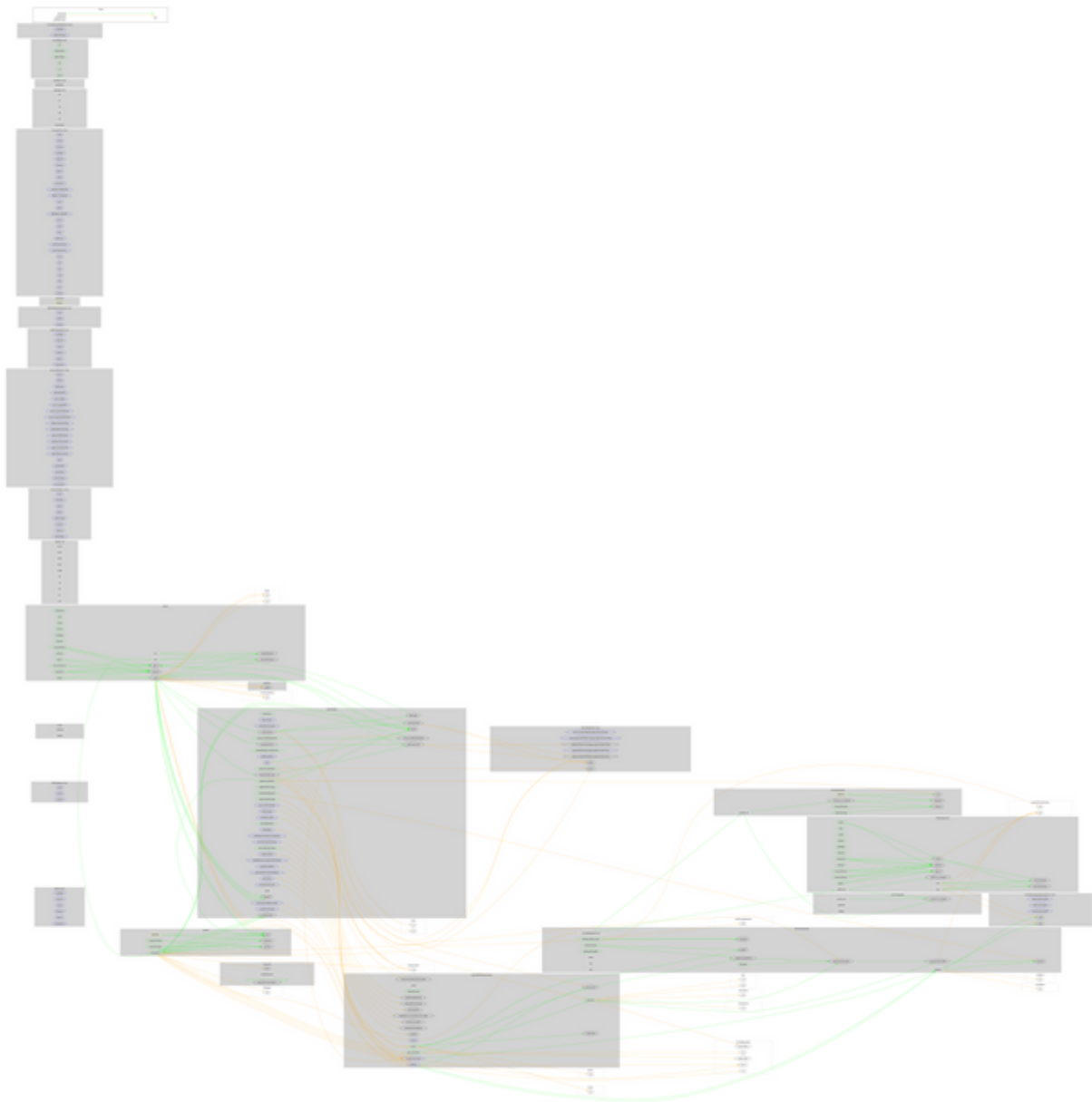
	toUint256Safe	Internal		
SafeMathUint	Library			
	toInt256Safe	Internal		
IterableMapping	Library			
	get	Public		-
	getIndexOfKey	Public		-
	getKeyAtIndex	Public		-
	size	Public		-
	set	Public	✓	-
	remove	Public	✓	-
DividendPayingTokenInterface	Interface			
	dividendOf	External		-
	withdrawDividend	External	✓	-
DividendPayingTokenOptionalInterface	Interface			
	withdrawableDividendOf	External		-
	withdrawnDividendOf	External		-
	accumulativeDividendOf	External		-
DividendPayingToken	Implementation	ERC20Upgradable, OwnableUpgradable, DividendPayingTokenInterface, DividendPayingTokenOptionalInterface		
	__DividendPayingToken_init	Internal	✓	initializer
	distributeCAKEDividends	Public	✓	onlyOwner

	withdrawDividend	Public	✓	-
	_withdrawDividendOfUser	Internal	✓	
	dividendOf	Public		-
	withdrawableDividendOf	Public		-
	withdrawnDividendOf	Public		-
	accumulativeDividendOf	Public		-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	_setBalance	Internal	✓	
BABYTOKENDividendTracker	Implementation	OwnableUp gradeable, DividendPay ingToken		
	initialize	External	✓	initializer
	_transfer	Internal		
	withdrawDividend	Public		-
	excludeFromDividends	External	✓	onlyOwner
	isExcludedFromDividends	Public		-
	updateClaimWait	External	✓	onlyOwner
	updateMinimumTokenBalanceForDividends	External	✓	onlyOwner
	getLastProcessedIndex	External		-
	getNumberOfTokenHolders	External		-
	getAccount	Public		-
	getAccountAtIndex	Public		-
	canAutoClaim	Private		
	setBalance	External	✓	onlyOwner
	process	Public	✓	-
	processAccount	Public	✓	onlyOwner
BaseToken	Implementation			
BABYTOKEN	Implementation	ERC20, Ownable, BaseToken		

	<Constructor>	Public	Payable	ERC20
	<Receive Ether>	External	Payable	-
	setSwapTokensAtAmount	External	✓	onlyOwner
	updateDividendTracker	Public	✓	onlyOwner
	updateUniswapV2Router	Public	✓	onlyOwner
	excludeFromFees	Public	✓	onlyOwner
	excludeMultipleAccountsFromFees	Public	✓	onlyOwner
	setMarketingWallet	External	✓	onlyOwner
	setTokenRewardsFee	External	✓	onlyOwner
	setLiquiditFee	External	✓	onlyOwner
	setMarketingFee	External	✓	onlyOwner
	setAutomatedMarketMakerPair	Public	✓	onlyOwner
	_setAutomatedMarketMakerPair	Private	✓	
	updateGasForProcessing	Public	✓	onlyOwner
	updateClaimWait	External	✓	onlyOwner
	getClaimWait	External		-
	updateMinimumTokenBalanceForDividends	External	✓	onlyOwner
	getMinimumTokenBalanceForDividends	External		-
	getTotalDividendsDistributed	External		-
	isExcludedFromFees	Public		-
	withdrawableDividendOf	Public		-
	dividendTokenBalanceOf	Public		-
	excludeFromDividends	External	✓	onlyOwner
	isExcludedFromDividends	Public		-
	getAccountDividendsInfo	External		-
	getAccountDividendsInfoAtIndex	External		-
	processDividendTracker	External	✓	-
	claim	External	✓	-
	getLastProcessedIndex	External		-
	getNumberOfDividendTokenHolders	External		-
	_transfer	Internal	✓	
	swapAndSendToFee	Private	✓	
	swapAndLiquify	Private	✓	
	swapTokensForEth	Private	✓	

	swapTokensForCake	Private	✓	
	addLiquidity	Private	✓	
	swapAndSendDividends	Private	✓	

Contract Flow



Summary

Babyluna is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler error or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions. There is also a limit of max 25% fees.

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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>