Cyberscope

Audit Report

TDOGE

November 2022

Type	BEP20
Network	BSC
Address	0x7497469d1FA62d41B6d6ef29Ec05C889C8Ac513B
Audited by	© cyberscope

Table of Contents

Contract Review

Contract Name	BABYTOKEN
Compiler Version	v0.8.17+commit.8df45f5f
Optimization	200 runs
Licence	MIT
Explorer	https://bscscan.com/token/0x7497469d1FA62d41B6d6ef29Ec05C889C8Ac513B
Symbol	TDOGE
Decimals	18
Total Supply	99,999,999,999

Source Files

Filename	**SHA256**
contract.sol	1302ef7d86aab498c671f64e5dfdc7765474f176c4ad50f625e563b7007b4259

Audit Updates

Initial Audit	28th November 2022
Corrected	

Contract Analysis

🔴 Critical 🟠 Medium ⚪ Minor / Informative 🔵 Pass

Severity	Code	Description	Status
🔵	ST	Stops Transactions	Passed
🔵	OCTD	Transfers Contract's Tokens	Passed
🔵	OTUT	Transfers User's Tokens	Passed
🔵	ELFM	Exceeds Fees Limit	Passed
🔵	ULTW	Transfers Liquidity to Team Wallet	Passed
🔵	MT	Mints Tokens	Passed
🔵	BT	Burns Tokens	Passed
🔴	BC	Blacklists Addresses	Unresolved

BC - Blacklists Addresses

Criticality	critical
Location	contract.sol#L2034
Status	Unresolved

Description

The contract owner has the authority to stop addresses from transactions. The owner may take advantage of it by calling the multipleBotlistAddress function.

```
require(!_isBlacklisted[from] && !_isBlacklisted[to], 'Blacklisted address');
```

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 / Informative

Severity	Code	Description	Status
●	PVC	Price Volatility Concern	Unresolved
●	RSML	Redundant SafeMath Library	Unresolved
●	US	Untrusted Source	Unresolved
●	MDA	Misleading Dead Address	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L05	Unused State Variable	Unresolved
●	L07	Missing Events Arithmetic	Unresolved
●	L09	Dead Code Elimination	Unresolved
●	L12	Using Variables before Declaration	Unresolved
●	L14	Uninitialized Variables in Local Scope	Unresolved
●	L15	Local Scope Variable Shadowing	Unresolved

PVC - Price Volatility Concern

Criticality	minor / informative
Location	contract.sol#L2188
Status	Unresolved

Description

The swapTokensAtAmount could produce a dramatically price volatility. If the variable set to a high number, then the contract will sell a huge amount of tokens in a single transaction.

```
function setSwapTokensAtAmount(uint256 amount) public onlyOwner {
    swapTokensAtAmount = amount;
}
```

Recommendation

The contract could ensure that it will not sell more than a reasonable amount of tokens once. A suggested implementation could check that the maximum amount should be less than a fixed percentage of the total supply.

RSML - Redundant SafeMath Library

Criticality	minor / informative
Location	contract.sol#L196
Status	Unresolved

Description

The Solidity versions that are greater than or equal to 0.8.0 do not need the use of SafeMath Library. The usage of the SafeMath library produces unnecessary additional gas.

```
library SafeMath {
...
}
```

Recommendation

The team is advised to remove the SafeMath library as it is safe to do math operations without it.

US - Untrusted Source

Criticality	minor / informative
Location	contract.sol#L2385
Status	Unresolved

Description

The contract uses an external contract in order to determine the transaction's flow. The external contract is untrusted. As a result it may produce security issues and harm the transactions.

```
dividendTracker.distributeCAKEDividends(dividends);
```

Recommendation

The contract should use a trusted external source. A trusted source could be either a commonly recognized or an audited contract. The contract could wrap this line of code in try-catch block to avoid security issues.

MDA - Misleading Dead Address

Criticality	minor / informative
Location	contract.sol#L2192
Status	Unresolved

Description

The deadWallet address should be immutable. The setDeadWallet function is misleading, as the contract owner could set the deadWallet variable to any address.

```
function setDeadWallet(address addr) public onlyOwner {
    deadWallet = addr;
}
```

Recommendation

The team is advised to remove this function entirely from the contract.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor / informative
Location	contract.sol#L1459,101,1723,831,112,848,1458,1437,161,1909,830,1111,2185,1908,1914,1106,92,1413,1519,1538,1911,1460,1526,117,666,1907,1552,88,1457
Status	Unresolved

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.

```
_name
__gap
_account
PERMIT_TYPEHASH
__Ownable_init
MINIMUM_LIQUIDITY
_rewardToken
magnitude
AmountMarketingFee
...
```

Recommendation

Follow the Solidity naming convention.
https://docs.soliditylang.org/en/v0.8.17/style-guide.html#naming-conventions.

L05 - Unused State Variable

Criticality	minor / informative
Location	contract.sol#L253,161
Status	Unresolved

Description

There are segments that contain unused state variables.

```
MAX_INT256
__gap
```

Recommendation

Remove unused state variables.

L07 - Missing Events Arithmetic

Criticality	minor / informative
Location	contract.sol#L2188,2206,2197
Status	Unresolved

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.

```
swapTokensAtAmount = amount
sellTokenRewardsFee = rewardsFee
buyTokenRewardsFee = rewardsFee
```

Recommendation

Emit an event for critical parameter changes.

L09 - Dead Code Elimination

Criticality	minor / informative
Location	contract.sol#L377,299,357,608,1278,343,1571,88
Status	Unresolved

Description

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

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

Recommendation

Remove unused functions.

L12 - Using Variables before Declaration

Criticality	minor / informative
Location	contract.sol#L2293
Status	Unresolved

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.

```
claims
iterations
lastProcessedIndex
```

Recommendation

The variables should be declared before any usage of them.

L14 - Uninitialized Variables in Local Scope

Criticality	minor / informative
Location	contract.sol#L2259,2293,2255
Status	Unresolved

Description

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

```
DFee
iterations
lastProcessedIndex
fees
claims
```

Recommendation

All the local scoped variables should be initialized.

L15 - Local Scope Variable Shadowing

Criticality	minor / informative
Location	contract.sol#L1459,1519,1538,1986,1552,1460,1526
Status	Unresolved

Description

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

```
_name
_owner
totalSupply
_symbol
```

Recommendation

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

Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Ownable	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	getTime	Public		-
	_transferOwnership	Internal	✓	
Initializable	Implementation			
ContextUpgradeable	Implementation	Initializable		
	__Context_init	Internal	✓	initializer
	__Context_init_unchained	Internal	✓	initializer
	_msgSender	Internal		
	_msgData	Internal		
OwnableUpgradeable	Implementation	Initializable, ContextUpgradeable		
	__Ownable_init	Internal	✓	initializer
	__Ownable_init_unchained	Internal	✓	initializer
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_setOwner	Private	✓	

IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
IERC20Metadata	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
	mod	Internal		
SafeMathInt	Library			
	mul	Internal		
	div	Internal		
	sub	Internal		
	add	Internal		
	abs	Internal		
	toUint256Safe	Internal		
SafeMathUint	Library			
	toInt256Safe	Internal		

Clones	Library			
	clone	Internal	✓	
	cloneDeterministic	Internal	✓	
	predictDeterministicAddress	Internal		
	predictDeterministicAddress	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	✓	
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	✓	-
IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-

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	✓	-
IterableMapping	Library			
	get	Public		-
	getIndexOfKey	Public		-
	getKeyAtIndex	Public		-
	size	Public		-

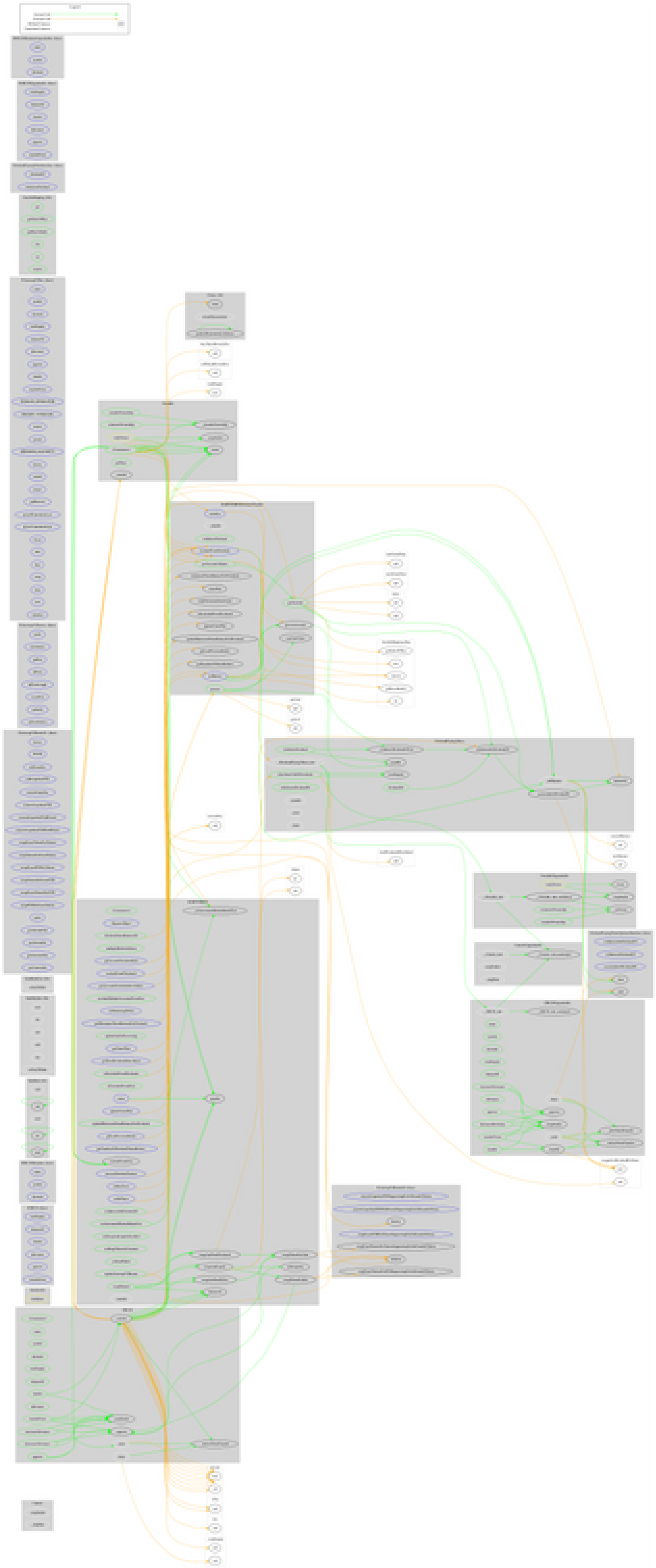
	set	Public	✓	-
	remove	Public	✓	-
DividendPayingTokenInterface	Interface			
	dividendOf	External		-
	withdrawDividend	External	✓	-
DividendPayingTokenOptionalInterface	Interface			
	withdrawableDividendOf	External		-
	withdrawnDividendOf	External		-
	accumulativeDividendOf	External		-
IERC20Upgradeable	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
IERC20MetadataUpgradeable	Interface	IERC20Upgradeable		
	name	External		-
	symbol	External		-
	decimals	External		-
ERC20Upgradeable	Implementation	Initializable, ContextUpgradeable, IERC20Upgradeable, IERC20MetadataUpgradeable		

	__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	✓	
DividendPayingToken	Implementation	ERC20Upgradeable, OwnableUpgradeable, 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	OwnableUpgradeable, DividendPayingToken		
	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
BABYTOKEN	Implementation	ERC20, Ownable		
	<Constructor>	Public	Payable	ERC20
	<Receive Ether>	External	Payable	-
	updateMinimumTokenBalanceForDividends	Public	✓	onlyOwner
	multipleBotlistAddress	Public	✓	onlyOwner
	getMinimumTokenBalanceForDividends	External		-
	updateUniswapV2Router	Public	✓	onlyOwner
	excludeFromFees	Public	✓	onlyOwner
	excludeMultipleAccountsFromFees	Public	✓	onlyOwner

	setMarketingWallet	External	✓	onlyOwner
	setAutomatedMarketMakerPair	Public	✓	onlyOwner
	_setAutomatedMarketMakerPair	Private	✓	
	updateGasForProcessing	Public	✓	onlyOwner
	updateClaimWait	External	✓	onlyOwner
	getClaimWait	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		-
	swapManual	Public	✓	onlyOwner
	setSwapAndLiquifyEnabled	Public	✓	onlyOwner
	setSwapTokensAtAmount	Public	✓	onlyOwner
	setDeadWallet	Public	✓	onlyOwner
	setBuyTaxes	External	✓	onlyOwner
	setSelTaxes	External	✓	onlyOwner
	_transfer	Internal	✓	
	swapAndSendToFee	Private	✓	
	swapAndLiquify	Private	✓	
	swapTokensForEth	Private	✓	
	swapTokensForCake	Private	✓	
	addLiquidity	Private	✓	
	swapAndSendDividends	Private	✓	

Contract Flow



Summary

The Smart Contract analysis reported one critical severity issue. The contract owner has the authority to massively blacklist addresses. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats. There is also a limit of max 25% buy/sell fees.

Disclaimer

The information provided in this report does not constitute investment, financial or trading advice and you should not treat any of the document's content as such. This report may not be transmitted, disclosed, referred to or relied upon by any person for any purposes nor may copies be delivered to any other person other than the Company without Cyberscope's prior written consent. This report is not nor should be considered an "endorsement" or "disapproval" of any particular project or team. This report is not nor should be regarded as an indication of the economics or value of any "product" or "asset" created by any team or project that contracts Cyberscope to perform a security assessment. This document does not provide any warranty or guarantee regarding the absolute bug-free nature of the technology analyzed, nor do they provide any indication of the technologies proprietors' business, business model or legal compliance. This report should not be used in any way to make decisions around investment or involvement with any particular project. This report represents an extensive assessment process intending to help our customers increase the quality of their code while reducing the high level of risk presented by cryptographic tokens and blockchain technology.

Blockchain technology and cryptographic assets present a high level of ongoing risk Cyberscope's position is that each company and individual are responsible for their own due diligence and continuous security Cyberscope's goal is to help reduce the attack vectors and the high level of variance associated with utilizing new and consistently changing technologies and in no way claims any guarantee of security or functionality of the technology we agree to analyze. The assessment services provided by Cyberscope are subject to dependencies and are under continuing development. You agree that your access and/or use including but not limited to any services reports and materials will be at your sole risk on an as-is where-is and as-available basis Cryptographic tokens are emergent technologies and carry with them high levels of technical risk and uncertainty. The assessment reports could include false positives false negatives and other unpredictable results. The services may access and depend upon multiple layers of third parties.

About Cyberscope

Cyberscope is a blockchain cybersecurity company that was founded with the vision to make web3.0 a safer place for investors and developers. Since its launch, it has worked with thousands of projects and is estimated to have secured tens of millions of investors’ funds.

Cyberscope is one of the leading smart contract audit firms in the crypto space and has built a high-profile network of clients and partners.

The Cyberscope team

https://www.cyberscope.io