

Audit Report

MegaDoge

February 2022

Type	BEP20
Network	BSC
Address	0x46D52A36698309850CeFdAf700922c328e80245e
Audited by	© coinscope

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Contract Review

Contract Name	MEGADOGE
Compiler Version	v0.8.11+commit.d7f03943
Optimization	200 runs
Licence	Unlicense
Explorer	https://bscscan.com/token/0x46D52A36698309850CeFdAf700922c328e80245e
Symbol	MDOGE
Decimals	9
Total Supply	1,000,000,000,000
Source	contract.sol
Domain	megadoge.info

Audit Updates

Initial Audit	13th February 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	medium
Location	contract.sol#L1728

Description

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(from != owner() && to != owner())
    require(amount <= maxTxAmount, "Transfer amount exceeds the maxTxAmount.");
```

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.

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#L1584,1591

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 `setMarketingFee` function with a high percentage value.

```
function setMarketingFee(uint8 value) external onlyOwner{
    marketingFee = value;
    totalFees = DOGERewardsFee  + marketingFee;

}
```

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.

BC - Blacklisted Contracts

Criticality	medium
Location	contract.sol#L1727

Description

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

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

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L760,768,953,961,978,1004 and 19 more

Description

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

```
process
getAccountAtIndex
dividendTokenBalanceOf
...
```

Recommendation

Use the external attribute for functions never called from the contract

L05 - Unused State Variable

Criticality	minor
Location	contract.sol#L375

Description

There are segments that contain unused state variables.

```
MAX_INT256
```

Recommendation

Remove unused state variables.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L17,194,195,212,1347,1354 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.

```
_account
_marketingWallet
DOGERewardsFee
...
```

Recommendation

Follow the Solidity naming convention.
https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions

L09 - Dead Code Elimination

Criticality	minor
Location	contract.sol#L702,1381,244,642,602,668 and 9 more

Description

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

```
mul
div
abs
...
```

Recommendation

Remove unused functions.

L12 - Using Variables before Declaration

Criticality	minor
Location	contract.sol#L1789

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
lastProcessedIndex
iterations
```

Recommendation

The variables should be declared before any usage of them.

L07 - Missing Events Arithmetic

Criticality	minor
Location	contract.sol#L1584,1591,1643,1715

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.

```
maxTxAmount = Amount * 10 ** 9
swapTokensAtAmount = amount
marketingFee = value
...
```

Recommendation

Emit an event for critical parameter changes.

L15 - Local Scope Variable Shadowing

Criticality	minor
Location	contract.sol#L1299,1347,1354,1361,1371

Description

The 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.

L14 - Uninitialized Variables in Local Scope

Criticality	minor
Location	contract.sol#L1789

Description

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

```
lastProcessedIndex
iterations
claims
```

Recommendation

All the local scoped variables should be initialized.

Contract Functions

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
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	Internal		
	getIndexOfKey	Internal		
	getKeyAtIndex	Internal		
	size	Internal		
	set	Internal	✓	
	remove	Internal	✓	
DividendPayingTokenOptionalInterface	Interface			
	withdrawableDividendOf	External		-
	withdrawnDividendOf	External		-
	accumulativeDividendOf	External		-
DividendPayingTokenInterface	Interface			
	dividendOf	External		-
	withdrawDividend	External	✓	-
SafeMathInt	Library			
	mul	Internal		
	div	Internal		
	sub	Internal		
	add	Internal		
	abs	Internal		

	toUint256Safe	Internal		
SafeMathUint	Library			
	toInt256Safe	Internal		
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		
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Ownable	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_setOwner	Private	✓	
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-

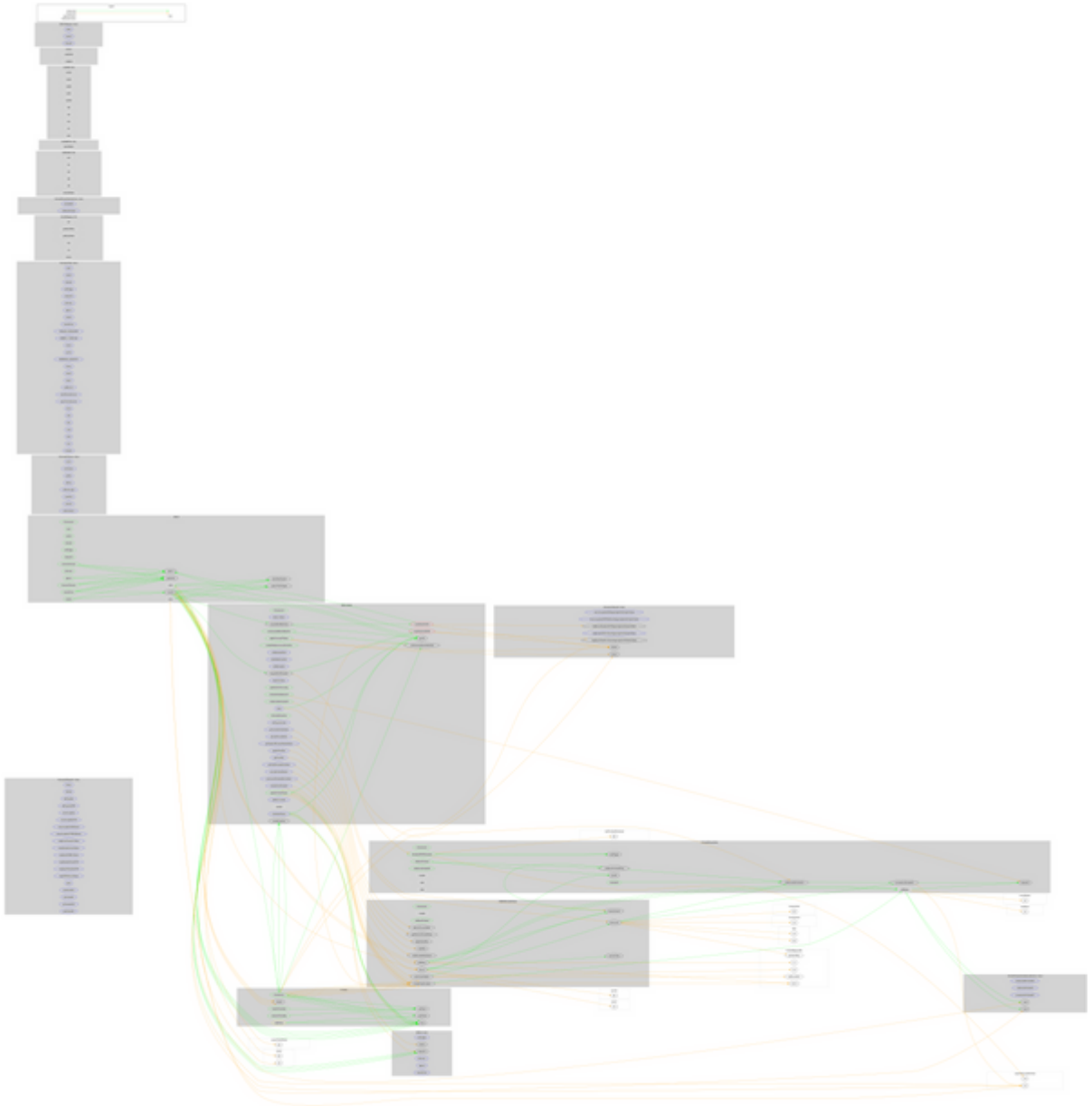
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
IERC20Metadata	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
ERC20	Implementation	Context, IERC20, IERC20Metadata		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	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	✓	

DividendPayingToken	Implementation	ERC20, Ownable, DividendPayingTokenInterface, DividendPayingTokenOptionalInterface		
	<Constructor>	Public	✓	ERC20
	distributeDOGEDividends	Public	✓	onlyOwner
	withdrawDividend	Public	✓	-
	_withdrawDividendOfUser	Internal	✓	
	dividendOf	Public		-
	withdrawableDividendOf	Public		-
	withdrawnDividendOf	Public		-
	accumulativeDividendOf	Public		-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	_setBalance	Internal	✓	
MEGADOGE	Implementation	ERC20, Ownable		
	<Constructor>	Public	✓	ERC20
	<Receive Ether>	External	Payable	-
	updateDividendTracker	Public	✓	onlyOwner
	updateUniswapV2Router	Public	✓	onlyOwner
	excludeFromFees	Public	✓	onlyOwner
	excludeMultipleAccountsFromFees	Public	✓	onlyOwner
	setMarketingWallet	External	✓	onlyOwner
	setDOGERewardsFee	External	✓	onlyOwner
	setMarketingFee	External	✓	onlyOwner
	setAutomatedMarketMakerPair	Public	✓	onlyOwner
	blacklistAddress	External	✓	onlyOwner
	_setAutomatedMarketMakerPair	Private	✓	
	updateGasForProcessing	Public	✓	onlyOwner
	updateClaimWait	External	✓	onlyOwner

	getClaimWait	External		-
	getTotalDividendsDistributed	External		-
	isExcludedFromFees	Public		-
	setSwapAtAmount	External	✓	onlyOwner
	withdrawableDividendOf	Public		-
	dividendTokenBalanceOf	Public		-
	excludeFromDividends	External	✓	onlyOwner
	getAccountDividendsInfo	External		-
	getAccountDividendsInfoAtIndex	External		-
	processDividendTracker	External	✓	-
	claim	External	✓	-
	getLastProcessedIndex	External		-
	getNumberOfDividendTokenHolders	External		-
	claimStuckTokens	External	✓	onlyOwner
	setMaxTxAmount	External	✓	onlyOwner
	_transfer	Internal	✓	
	swapTokensForEth	Private	✓	
	swapAndSendMarketing	Private	✓	
	swapTokensForDOGE	Private	✓	
	swapAndSendDividends	Private	✓	
TOKENDividendTracker	Implementation	Ownable, DividendPayingToken		
	<Constructor>	Public	✓	DividendPayingToken
	_transfer	Internal		
	withdrawDividend	Public		-
	excludeFromDividends	External	✓	onlyOwner
	updateClaimWait	External	✓	onlyOwner
	getLastProcessedIndex	External		-
	getNumberOfTokenHolders	External		-
	getAccount	Public		-
	getAccountAtIndex	Public		-
	canAutoClaim	Private		
	setBalance	External	✓	onlyOwner

	process	Public	✓	-
	processAccount	Public	✓	onlyOwner

Contract Flow



Summary

MegaDoge is the memetoken that rewards you with DogeCoin while you hold. There are some functions that can be abused by the owner, like manipulating fees, stopping transactions and blacklisting contracts. 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 is aiming to make crypto discoverable and efficient globally. It provides all the essential tools to assist users draw their own conclusions.



The Coinscope.co team

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