Audit Report

OmniCat

December 2021

Type	BEP20
Address	0xceFD47ebF50a5D4A369B0ef1D85646bFf8DAF021
Audited by	© coinscope

Table of Contents

Contract Review

Contract Name	OmniCat
Compiler Version	v0.8.4+commit.c7e474f2
Optimization	200 runs
Licence	
Explorer	https://bscscan.com/token/0xceFD47ebF50a5D4A369B0ef1D85646bFf8DAF021
Symbol	OCAT
Decimals	8
Total Supply	100,000,000,000
Source	contracts/OmniCat.sol, @openzeppelin/contracts/utils/Address.sol, @openzeppelin/contracts/utils/Context.sol, @openzeppelin/contracts/token/ERC20/IERC20.sol, @openzeppelin/contracts/access/Ownable.sol, @openzeppelin/contracts/utils/math/SafeMath.sol, contracts/libs/IPancakeSwapV2Factory.sol, contracts/libs/IPancakeSwapV2Pair.sol, contracts/libs/IPancakeSwapV2Router01.sol, contracts/libs/IPancakeSwapV2Router02.sol, contracts/libs/intToString.sol, @chainlink/contracts/src/v0.8/interfaces/AggregatorV3Interface.sol
Domain	omnicat.app

Audit Updates

Initial Audit	31st December 2021
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 - Contract Owner is not able to stop or pause transactions

Criticality	medium
Location	contract.sol#L409

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.

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
●	L09	Dead Code Elimination
●	L07	Missing Events Arithmetic

L01 - Public Function could be Declared External

Criticality	minor
Location	@openzeppelin/contracts/access/Ownable.sol#L389,L304,L300 and 22 more

Description

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

```
isExcludedFromFee
totalBurned
totalRewards
...
```

Recommendation

Use the external attribute for functions never called from the contract

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contracts/OmniCat.sol#L68,L73,L72 and 5 more

Description

Constant state variables should be declared constant to save gas.

```
_tTotal
_symbol
_name
...
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contracts/OmniCat.sol#L6,L5,L7 and 20 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.

```
_i
intToString
WETH
...
```

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	@openzeppelin/contracts/utils/Address.sol#L34,L46,L75 and 17 more

Description

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

```
trySub
tryMul
tryMod
...
```

Recommendation

Remove unused functions.

L07 - Missing Events Arithmetic

Criticality	minor
Location	contracts/OmniCat.sol#L294,L289,L284 and 1 more

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 = _tTotal.mul(maxTxPercent).div(10 ** 2)
_burnFee = burnFee
_charityFee = charityFee
...
```

Recommendation

Emit an event for critical parameter changes.

Contract Functions

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
AggregatorV3Interface	Interface			
	decimals	External		-
	description	External		-
	version	External		-
	getRoundData	External		-
	latestRoundData	External		-
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	✓	-
Address	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	

	functionCallWithValue	Internal	✓	
	functionStaticCall	Internal		
	functionStaticCall	Internal		
	functionDelegateCall	Internal	✓	
	functionDelegateCall	Internal	✓	
	verifyCallResult	Internal		
Context	Implementation			
	_msgSender	Internal		
	_msgData	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		
intToString	Library			
	uint2str	Internal		
IPancakeSwap V2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-

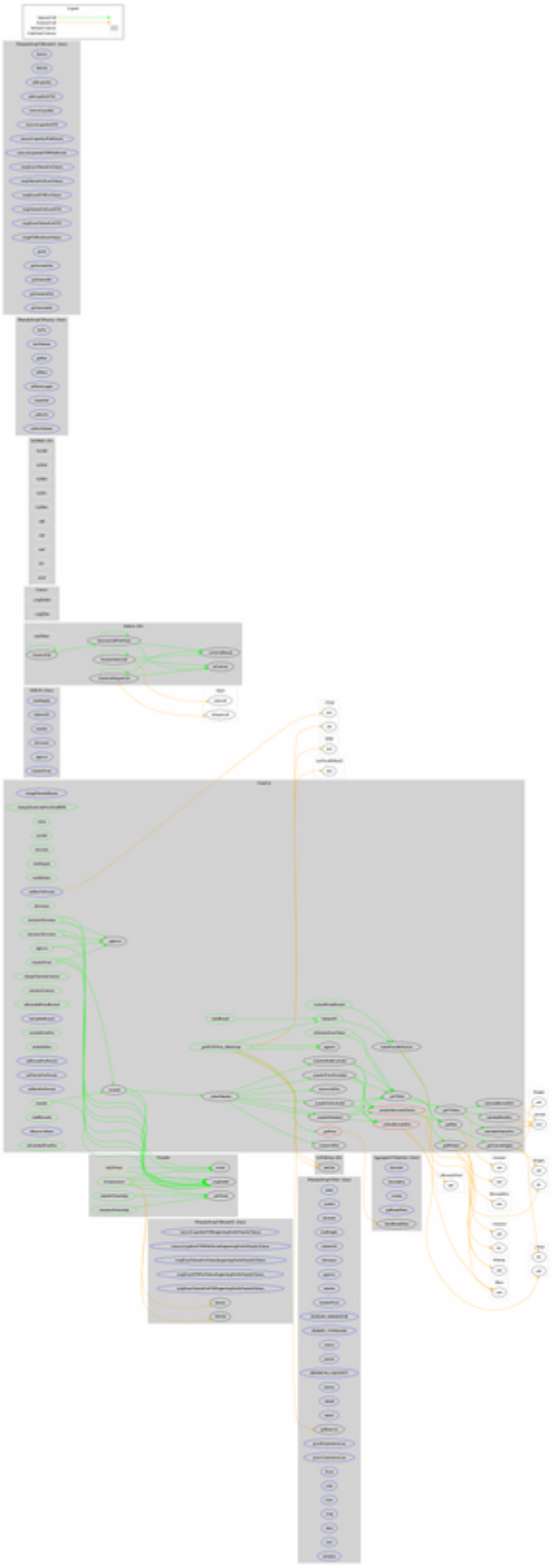
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IPancakeSwapV2Pair	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	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	✓	-
IPancakeSwapV2Router01	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		-
IPancakeSwapV2Router02	Interface	IPancakeSwapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
OmniCat	Implementation	Context, IERC20, Ownable		
	<Constructor>	Public	✓	-

	changePancakeRouter	External	✓	onlyOwner
	changeChainLinkPriceFeedBNB	Public	✓	onlyOwner
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	_getPrice	Private		
	totalHolders	Public		-
	_getOCATPrice_Marketcap	Public		-
	append	Internal		
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	reflectionFromToken	Public		-
	tokenFromReflection	Public		-
	changeCharitiesContract	Public	✓	onlyOwner
	charitiesContract	Public		-
	isExcludedFromReward	Public		-
	excludeFromReward	Public	✓	onlyOwner
	includeInReward	External	✓	onlyOwner
	excludeFromFee	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	setRewardFeePercent	External	✓	onlyOwner
	setCharityFeePercent	External	✓	onlyOwner
	setBurnFeePercent	External	✓	onlyOwner
	setMaxTxPercent	External	✓	onlyOwner
	totalRewards	Public		-
	totalBurned	Public		-
	<Receive Ether>	External	Payable	-
	_reflectRewardsFee	Private	✓	
	_getValues	Private		

	_getTValues	Private		
	_getRValues	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	calculateRewardFee	Private		
	calculateCharityFee	Private		
	calculateBurnFee	Private		
	removeAllFee	Private	✓	
	restoreAllFee	Private	✓	
	isExcludedFromFee	Public		-
	_approve	Private	✓	
	_transfer	Private	✓	
	_tokenTransfer	Private	✓	
	_transferBurnAndCharity	Private	✓	
	_transferStandard	Private	✓	
	_transferFromExcluded	Private	✓	
	_transferToExcluded	Private	✓	
	_transferBothExcluded	Private	✓	

Contract Flow



Domain Info

Domain Name	omnicat.app
Registry Domain ID	46E258FFB-APP
Creation Date	2021-06-28T22:16:03Z
Updated Date	2021-10-28T20:01:46Z
Registry Expiry Date	2022-06-28T22:16:03Z
Registrar WHOIS Server	whois.nic.google
Registrar URL	https://www.godaddy.com/
Registrar	GoDaddy.com, LLC
Registrar IANA ID	146

The domain has been created 6 months before the creation of the audit. It will expire in 6 months.

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

Summary

OmniCat is aiming to be a community charities driven cryptocurrency that strives to become a pioneer in providing assistance to cats in need. The project has a friendly and growing community. The contract analysis reported no compiler errors and only one medium threat issue. The Contract Owner can indirectly stop the transactions for everyone else by exploiting the anti-whale mechanism. He can also change fees but there are limitations to what he can set. There are some informative comments that do not affect the contract security. 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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The Coinscope.co team

https://www.coinscope.co