



# Audit Report

## **Dendy Metaverse**

January 2022

Type	BEP20
Network	BSC
Address	0x2364631Ea3231194E790F14dD13277889cfd1275
Audited by	© coinscope

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## Contract Review

<b>Contract Name</b>	DendyMetaverse
<b>Compiler Version</b>	v0.6.12+commit.27d51765
<b>Optimization</b>	200 runs
<b>Licence</b>	MIT
<b>Explorer</b>	<a href="https://bscscan.com/token/0x2364631ea3231194e790f14dd13277889cfd1275">https://bscscan.com/token/0x2364631ea3231194e790f14dd13277889cfd1275</a>
<b>Symbol</b>	MetaDND
<b>Decimals</b>	9
<b>Total Supply</b>	100,000,000
<b>Source</b>	contract.sol
<b>Domain</b>	dendymetaverse.games

## Audit Updates

<b>Initial Audit</b>	1st January 2022
<b>Corrected</b>	

# Contract Analysis

● Critical   
 ● Medium   
 ● Minor   
 ● Pass

Severity	Code	Description
<span style="color: orange;">●</span>	ST	Contract Owner is not able to stop or pause transactions
<span style="color: darkblue;">●</span>	OCTD	Contract Owner is not able to transfer tokens from specific address
<span style="color: darkblue;">●</span>	OTUT	Owner Transfer User's Tokens
<span style="color: darkblue;">●</span>	ELFM	Contract Owner is not able to increase fees more than a reasonable percent (25%)
<span style="color: darkblue;">●</span>	ULTW	Contract Owner is not able to increase the amount of liquidity taken by dev wallet more than a reasonable percent
<span style="color: darkblue;">●</span>	MT	Contract Owner is not able to mint new tokens
<span style="color: darkblue;">●</span>	BT	Contract Owner is not able to burn tokens from specific wallet
<span style="color: orange;">●</span>	BC	Contract Owner is not able to blacklist wallets from selling

## ST - Stop Transactions

Criticality	medium
Location	contract.sol#L977

### 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.

## BC - Blacklisted Contracts

<b>Criticality</b>	medium
<b>Location</b>	contract.sol#L969

### Description

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

```
function _transfer(  
    address from,  
    address to,  
    uint256 amount  
)  
private  
preventBlacklisted(_msgSender(), "DendyMetaverse: Address is blacklisted")  
preventBlacklisted(from, "DendyMetaverse: From address is blacklisted")  
preventBlacklisted(to, "DendyMetaverse: To address is blacklisted")
```

### 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
●	L07	Missing Events Arithmetic



## L01 - Public Function could be Declared External

**Criticality**

minor

**Location**

contract.sol#L1143,L943,L939 and 29 more

### Description

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

```
feeTiersLength  
isBlacklisted  
isExcludedFromFee  
...
```

### Recommendation

Use the external attribute for functions never called from the contract

## L05 - Unused State Variable

<b>Criticality</b>	minor
<b>Location</b>	contract.sol#L231

### Description

There are segments that contains unused state variable.

DendyMetaverse

### Recommendation

Remove unused state variables.

## L04 - Conformance to Solidity Naming Conventions

**Criticality**

minor

**Location**

contract.sol#L522,L517,L515 and 48 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.

```
_maxTxAmount  
_burnAddress  
WBNB  
...
```

### 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#L23,L28,L40 and 16 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**

contract.sol#L859

### 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 ** 4)
```

### Recommendation

Emit an event for critical parameter changes.

# Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
<b>SafeMathUpgradeable</b>	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		
<b>AddressUpgradeable</b>	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionStaticCall	Internal		
	functionStaticCall	Internal		
	_verifyCallResult	Private		

<b>Initializable</b>	Implementation			
	_isConstructor	Private		
<b>ContextUpgradeable</b>	Implementation	Initializable		
	__Context_init	Internal	✓	initializer
	__Context_init_unchained	Internal	✓	initializer
	_msgSender	Internal		
	_msgData	Internal		
<b>OwnableUpgradeable</b>	Implementation	Initializable, ContextUpgradeable		
	__Ownable_init	Internal	✓	initializer
	__Ownable_init_unchained	Internal	✓	initializer
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
<b>IERC20</b>	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
<b>IUniswapV2Factory</b>	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-

<b>IUniswapV2Pair</b>	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	✓	-
<b>IUniswapV2Router01</b>	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-



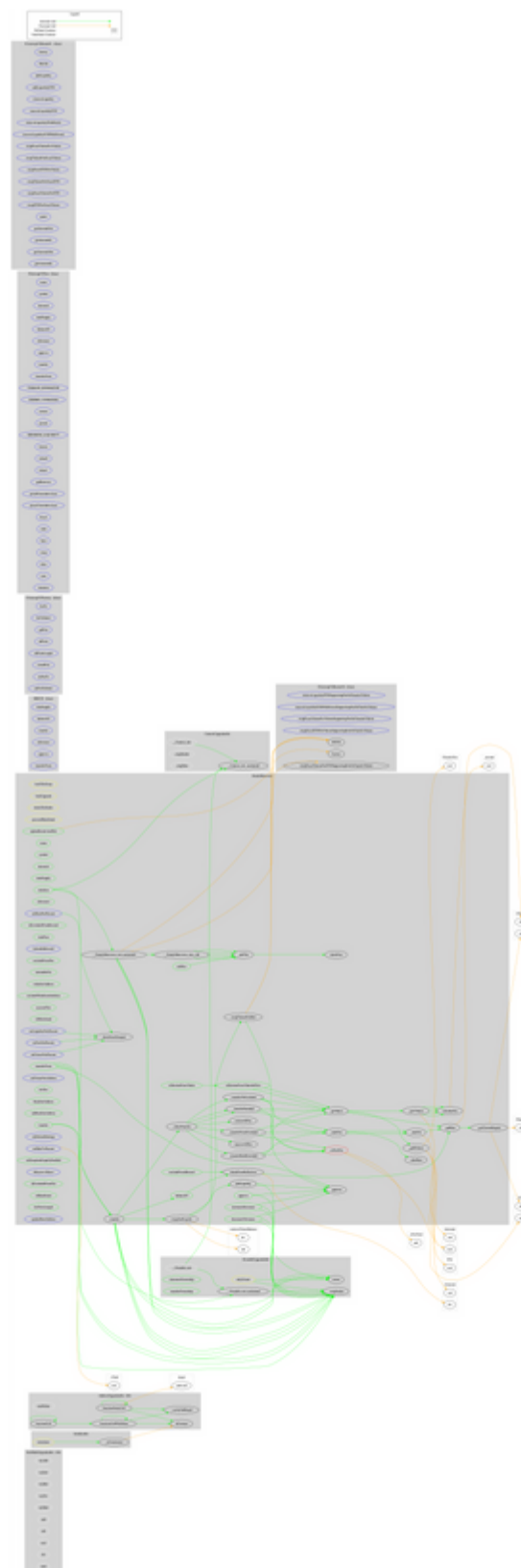
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-
	getAmountsIn	External		-
<b>IUniswapV2Router02</b>	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
<b>DendyMetaverse</b>	Implementation	IERC20, Initializable, ContextUpgradeable, OwnableUpgradeable		
	initialize	Public	✓	initializer
	__DendyMetaverse_init_unchained	Internal	✓	initializer
	__DendyMetaverse_tiers_init	Internal	✓	initializer

	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	isExcludedFromReward	Public		-
	totalFees	Public		-
	reflectionFromTokenInTiers	Public		-
	reflectionFromToken	Public		-
	tokenFromReflection	Public		-
	excludeFromReward	Public	✓	onlyOwner
	includeInReward	External	✓	onlyOwner
	excludeFromFee	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	whitelistAddress	Public	✓	onlyOwner checkTierIndex preventBlacklisted
	excludeWhitelistedAddress	Public	✓	onlyOwner
	accountTier	Public		-
	isWhitelisted	Public		-
	checkFees	Internal		
	checkFeesChanged	Internal		
	setLiquidityFeePercent	External	✓	onlyOwner checkTierIndex
	setTaxFeePercent	External	✓	onlyOwner checkTierIndex
	setOwnerFeePercent	External	✓	onlyOwner checkTierIndex
	setBurnFeePercent	External	✓	onlyOwner checkTierIndex

	setOwnerFeeAddress	External	✓	onlyOwner checkTierIndex
	addTier	Public	✓	onlyOwner
	_addTier	Internal	✓	
	feeTier	Public		checkTierIndex
	blacklistAddress	Public	✓	onlyOwner
	unBlacklistAddress	Public	✓	onlyOwner
	updateRouterAndPair	Public	✓	onlyOwner
	setDefaultSettings	External	✓	onlyOwner
	setMaxTxPercent	External	✓	onlyOwner
	setSwapAndLiquifyEnabled	Public	✓	onlyOwner
	<Receive Ether>	External	Payable	-
	_reflectFee	Private	✓	
	_getValues	Private		
	_getTValues	Private		
	_getRValues	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	calculateFee	Private		
	removeAllFee	Private	✓	
	restoreAllFee	Private	✓	
	isExcludedFromFee	Public		-
	isBlacklisted	Public		-
	_approve	Private	✓	preventBlacklis ted preventBlacklis ted
	_transfer	Private	✓	preventBlacklis ted preventBlacklis ted preventBlacklis ted
	swapAndLiquify	Private	✓	lockTheSwap
	swapTokensForBnb	Private	✓	
	addLiquidity	Private	✓	
	_tokenTransfer	Private	✓	
	_transferBothExcluded	Private	✓	

	_transferStandard	Private	✓	
	_transferToExcluded	Private	✓	
	_transferFromExcluded	Private	✓	
	_takeFees	Private	✓	
	_takeFee	Private	✓	
	_takeBurn	Private	✓	
	feeTiersLength	Public		-
	updateBurnAddress	External	✓	onlyOwner

# Contract Flow



## Domain Info

<b>Domain Name</b>	dendymetaverse.games
<b>Registry Domain ID</b>	81e71b1d21dc4e97979a13757e678d7e-DONUTS
<b>Creation Date</b>	2021-12-02T19:14:27Z
<b>Updated Date</b>	2021-12-07T19:15:02Z
<b>Registry Expiry Date</b>	2022-12-02T19:14:27Z
<b>Registrar WHOIS Server</b>	whois.tucows.com
<b>Registrar URL</b>	<a href="http://www.tucows.com">http://www.tucows.com</a>
<b>Registrar</b>	Tucows Domains Inc.
<b>Registrar IANA ID</b>	69

The domain has been created 30 days before the creation of the audit. It will expire in 11 months.

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

## Summary

The Dendy Metaverse is aiming to be a decentralized open-source metaplatfrom. The token has a friendly and growing community. There are some functions that can be abused by the owner, like manipulating fees and indirectly stopping the transactions and blacklisting addresses. 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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## About Coinscope

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.

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

<https://www.coinscope.co>