Audit Report

LionsLounge

January 2022

Type	BEP20
Network	BSC
Address	0x600B883AF87599396862F9cA2fC204C7c109E774
Audited by	© coinscope

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Contract Review

Contract Name	LionsLounge
Compiler Version	v0.8.7+commit.e28d00a7
Optimization	200 runs
Licence	MIT
Explorer	https://bscscan.com/token/0x600B883AF8759939686 2F9cA2fC204C7c109E774
Symbol	LSL
Decimals	18
Total Supply	100,000,000,000,000
Source	contract.sol
Domain	decentralion.com

Audit Updates

Initial Audit	14th January 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	critical
Location	contract.sol#L662

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 `_maxSellTxAmount` or `_maxBuyTxAmount` the to zero.

If the `_maxSellTxAmount` is set to zero, the contract will behave like a honeypot since the holders will not be able to sell their tokens.

```
function checkTxLimit(address sender, uint256 amount, address recipient, bool
isSell) internal view {
    if (recipient != owner){
        if(isSell){
            require(amount <= _maxSellTxAmount || isTxLimitExempt[sender] ||
isTxLimitExempt[recipient], "TX Limit Exceeded");
        } else {
            require(amount <= _maxBuyTxAmount || isTxLimitExempt[sender] ||
isTxLimitExempt[recipient], "TX Limit Exceeded");
        }
    }
}
```

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#L925,L936

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 `setSellFees` or the `setBuyFees` function with a high percentage value.

```
function setSellFees(uint256 _liquidityFeeSell, uint256 _buybackFeeSell, uint256
_reflectionFeeSell, uint256 _marketingFeeSell, uint256 _devFeeSell, uint256
_feeDenominator) external authorized {
    liquidityFeeSell = _liquidityFeeSell;
    buybackFeeSell = _buybackFeeSell;
    reflectionFeeSell = _reflectionFeeSell;
    marketingFeeSell = _marketingFeeSell;
    devFeeSell = _devFeeSell;
    totalFeeSell =
_liquidityFeeSell.add(_buybackFeeSell).add(_reflectionFeeSell).add(_marketingFee
Sell).add(_devFeeSell);
    feeDenominator = _feeDenominator;
}
```

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#L580

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[recipient] && !isBlacklisted[sender], '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
	L02	State Variables could be Declared Constant
	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#L981,L758,L752 and 5 more

Description

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

```
getUnpaidEarnings
blacklistAddress
cooldownEnabled
...
```

Recommendation

Use the external attribute for functions never called from the contract

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contract.sol#L494,L459,L413 and 7 more

Description

Constant state variables should be declared constant to save gas.

```
tradingOpen
deadBlocks
_totalSupply
...
```

Recommendation

Add the constant attribute to state variables that never change.

L05 - Unused State Variable

Criticality	minor
Location	contract.sol#L397

Description

There are segments that contains unused state variable.

```
BUSD
```

Recommendation

Remove unused state variables.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L456,L455,L422 and 50 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.

```
GREEDDuration
GREEDTriggeredAt
_allowances
...
```

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#L834,L809,L879 and 1 more

Description

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

```
triggerAutoBuyback
shouldAutoBuyback
launched
...
```

Recommendation

Remove unused functions.

L07 - Missing Events Arithmetic

Criticality	minor
Location	contract.sol#L959,L953,L936 and 9 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.

```
targetLiquidity = _target
swapThreshold = _totalSupply * _amount / 10000
liquidityFeeSell = _liquidityFeeSell
...
```

Recommendation

Emit an event for critical parameter changes.

Contract Functions

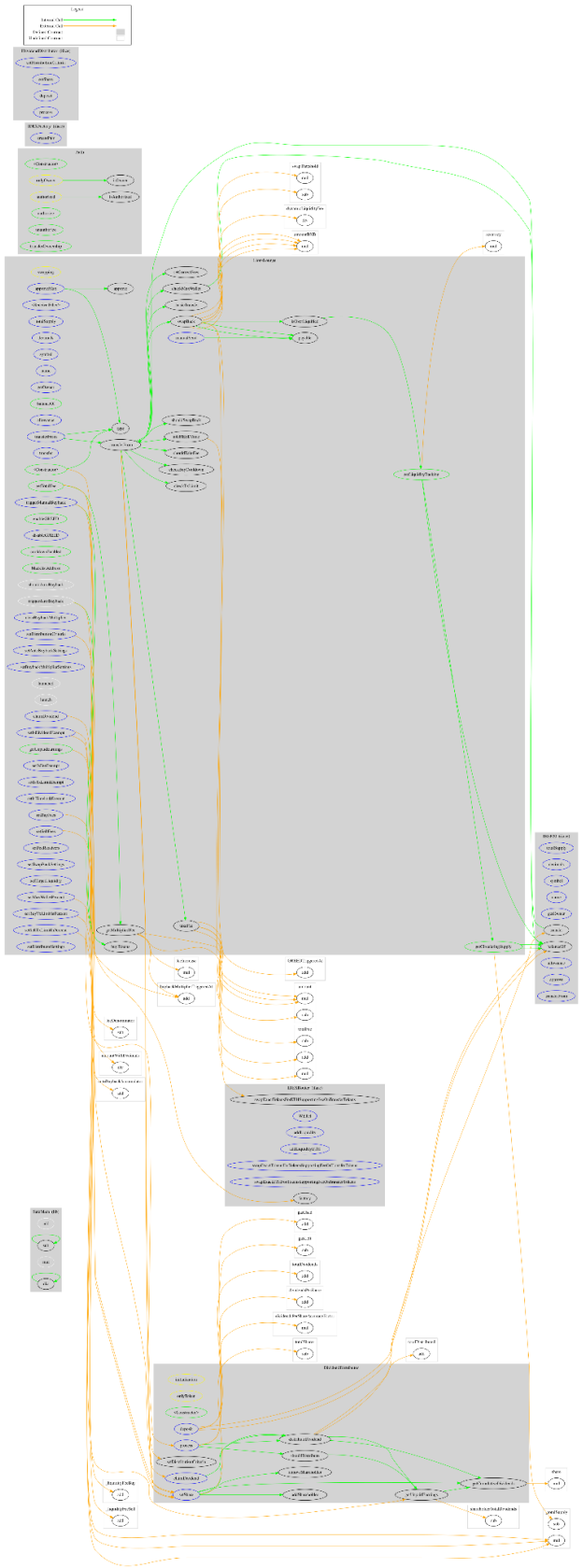
Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
IBEP20	Interface			
	totalSupply	External		-
	decimals	External		-
	symbol	External		-
	name	External		-
	getOwner	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
Auth	Implementation			
	<Constructor>	Public	✓	-
	authorize	Public	✓	onlyOwner
	unauthorize	Public	✓	onlyOwner
	isOwner	Public		-
	isAuthorized	Public		-
	transferOwnership	Public	✓	onlyOwner
IDEXFactory	Interface			

	createPair	External	✓	-
IDEXRouter	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
IDividendDistributor	Interface			
	setDistributionCriteria	External	✓	-
	setShare	External	✓	-
	deposit	External	Payable	-
	process	External	✓	-
DividendDistributor	Implementation	IDividendDistributor		
	<Constructor>	Public	✓	-
	setDistributionCriteria	External	✓	onlyToken
	setShare	External	✓	onlyToken
	deposit	External	Payable	onlyToken
	process	External	✓	onlyToken
	shouldDistribute	Internal		
	distributeDividend	Internal	✓	
	claimDividend	External	✓	onlyToken
	getUnpaidEarnings	Public		-
	getCumulativeDividends	Internal		
	addShareholder	Internal	✓	
	removeShareholder	Internal	✓	
LionsLounge	Implementation	IBEP20,		

		Auth		
	<Constructor>	Public	✓	Auth
	<Receive Ether>	External	Payable	-
	totalSupply	External		-
	decimals	External		-
	symbol	External		-
	name	External		-
	getOwner	External		-
	balanceOf	Public		-
	allowance	External		-
	approve	Public	✓	-
	approveMax	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	setMaxWalletPercent	External	✓	onlyOwner
	_transferFrom	Internal	✓	
	_basicTransfer	Internal	✓	
	setCorrectFees	Internal	✓	
	inGREEDTime	Public		-
	checkTxLimit	Internal		
	checkBuyCooldown	Internal	✓	
	checkMaxWallet	Internal		
	shouldTakeFee	Internal		
	getTotalFee	Public		-
	getMultipliedFee	Public		-
	takeFee	Internal	✓	
	shouldSwapBack	Internal		
	enableGREED	Public	✓	authorized
	disableGREED	External	✓	authorized
	cooldownEnabled	Public	✓	authorized
	blacklistAddress	Public	✓	authorized
	swapBack	Internal	✓	swapping
	shouldAutoBuyback	Internal		
	triggerManualBuyback	External	✓	authorized
	clearBuybackMultiplier	External	✓	authorized

	triggerAutoBuyback	Internal	✓	
	buyTokens	Internal	✓	swapping
	setAutoBuybackSettings	External	✓	authorized
	setBuybackMultiplierSettings	External	✓	authorized
	launched	Internal		
	launch	Internal	✓	
	setBuyTxLimitInPercent	External	✓	authorized
	setSellTxLimitInPercent	External	✓	authorized
	setIsDividendExempt	External	✓	authorized
	setIsFeeExempt	External	✓	authorized
	setIsTxLimitExempt	External	✓	authorized
	setIsTimelockExempt	External	✓	authorized
	setBuyFees	External	✓	authorized
	setSellFees	External	✓	authorized
	setFeeReceivers	External	✓	authorized
	setSwapBackSettings	External	✓	authorized
	setTargetLiquidity	External	✓	authorized
	manualSend	External	✓	authorized
	setDistributionCriteria	External	✓	authorized
	claimDividend	External	✓	-
	getUnpaidEarnings	Public		-
	setDistributorSettings	External	✓	authorized
	getCirculatingSupply	Public		-
	getLiquidityBacking	Public		-
	isOverLiquified	Public		-

Contract Flow



Domain Info

Domain Name	decentralion.com
Registry Domain ID	2635167601_DOMAIN_COM-VRSN
Creation Date	2021-08-20T13:14:23Z
Updated Date	2021-08-20T13:16:02Z
Registry Expiry Date	
Registrar WHOIS Server	whois.1api.net
Registrar URL	http://www.1api.net
Registrar	1API GmbH
Registrar IANA ID	1387

The domain has been created 5 months before the creation of the audit.

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

Summary

LionsLounge is a BSC token with rewards distribution mechanism. The token has a friendly and growing community. There are some functions that can be abused by the owner, like manipulating fees, stopping transactions, blacklisting wallets and stopping users from selling. 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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