



Cyberscope

# Audit Report

## **Moon Knight**

June 2022

Type       BEP20

Network    BSC

Address    0x3016C67a1451FC8F4FdBAe8e6ea099144c7db757

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# Contract Review

<b>Contract Name</b>	MoonKnight
<b>Compiler Version</b>	v0.8.13+commit.abaa5c0e
<b>Optimization</b>	200 runs
<b>Licence</b>	
<b>Explorer</b>	<a href="https://bscscan.com/token/0x3016C67a1451FC8F4FdBAe8e6ea099144c7db757">https://bscscan.com/token/0x3016C67a1451FC8F4FdBAe8e6ea099144c7db757</a>
<b>Symbol</b>	MK9
<b>Decimals</b>	9
<b>Total Supply</b>	1,000,000,000
<b>Domain</b>	moonknightbsc.xyz

## Source Files

<b>Filename</b>	<b>SHA256</b>
@openzeppelin/contracts/access/Ownable.sol	75e3c97011e75627ffb36f4a2799a4e887e1a3e27ed427490e82d7b6f51cc5c9
@openzeppelin/contracts/token/ERC20/IERC20.sol	94f23e4af51a18c2269b355b8c7cf4db8003d075c9c541019eb8dcf4122864d5
@openzeppelin/contracts/utils/Context.sol	1458c260d010a08e4c20a4a517882259a23a4baa0b5bd9add9fb6d6a1549814a
@openzeppelin/contracts/utils/math/S	0dc33698a1661b22981abad8e5c6f5ebca0dfe5ec14916369a2935d888ff257a

<b>afeMath.sol</b>	
<b>contracts/MoonKnight.sol</b>	ece3f207236123f13920b29dff73f9c18411ff93776a1aca4b2ef6afda8b5be4

## Audit Updates

<b>Initial Audit</b>	12th May 2022
<b>Corrected</b>	10th June 2022

# 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

# 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
●	L05	Unused State Variable
●	L07	Missing Events Arithmetic

## L01 - Public Function could be Declared External

<b>Criticality</b>	minor
<b>Location</b>	contracts/MoonKnight.sol#L130

### Description

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

```
balanceOf
```

### Recommendation

Use the external attribute for functions never called from the contract.



## L02 - State Variables could be Declared Constant

**Criticality**

minor

**Location**

contracts/MoonKnight.sol#L54,55,62

### Description

Constant state variables should be declared constant to save gas.

```
_totalSupply  
ZERO  
DEAD
```

### Recommendation

Add the constant attribute to state variables that never change.

## L04 - Conformance to Solidity Naming Conventions

<b>Criticality</b>	minor
<b>Location</b>	contracts/MoonKnight.sol#L24,304,305,306,307,319,320,326,54,55,56,58,59,60,62,63,65,66

### 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.

```
_allowances  
_balances  
_maxTxAmount  
_totalSupply  
_decimals  
_symbol  
_name  
WETH  
ZERO  
...
```

### Recommendation

Follow the Solidity naming convention.

<https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions>

## L05 - Unused State Variable

**Criticality**

minor

**Location**

contracts/MoonKnight.sol#L54,55

### Description

There are segments that contain unused state variables.

ZERO  
DEAD

### Recommendation

Remove unused state variables.

## L07 - Missing Events Arithmetic

<b>Criticality</b>	minor
<b>Location</b>	contracts/MoonKnight.sol#L290,303,326

### 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.

```
swapThreshold = _amount  
liquidityFee = _liquidityFee  
_maxTxAmount = amount
```

### Recommendation

Emit an event for critical parameter changes.

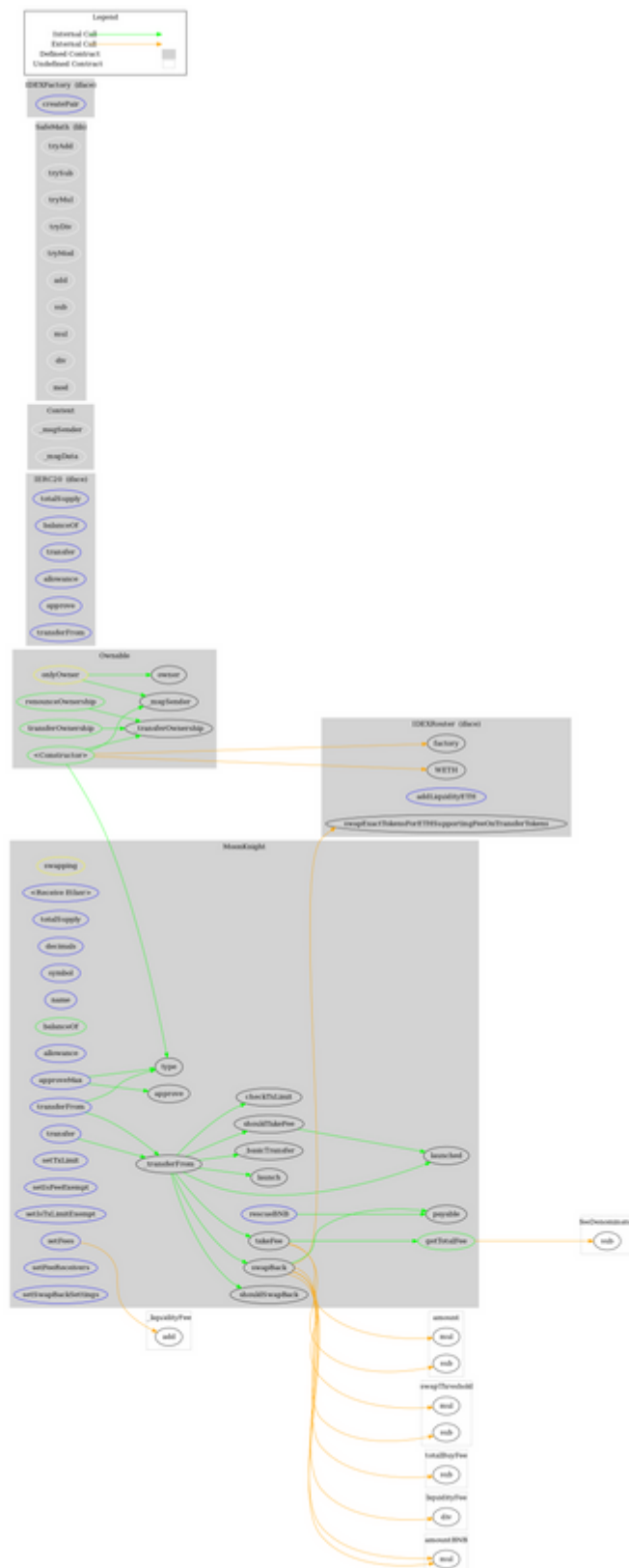
# Contract Functions

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
<b>Ownable</b>	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
<b>IERC20</b>	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
<b>Context</b>	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
<b>SafeMath</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>IDEXFactory</b>	Interface			
	createPair	External	✓	-
<b>IDEXRouter</b>	Interface			
	factory	External		-
	WETH	External		-
	addLiquidityETH	External	Payable	-
	swapExactTokensForETHSupporting FeeOnTransferTokens	External	✓	-
<b>MoonKnight</b>	Implementation	IERC20, Ownable		
	<Constructor>	Public	✓	-
	<Receive Ether>	External	Payable	-
	totalSupply	External		-
	decimals	External		-
	symbol	External		-
	name	External		-
	balanceOf	Public		-
	allowance	External		-
	approve	Public	✓	-
	approveMax	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	_transferFrom	Internal	✓	
	_basicTransfer	Internal	✓	
	checkTxLimit	Internal		
	shouldTakeFee	Internal		
	getTotalFee	Public		-
	takeFee	Internal	✓	

	shouldSwapBack	Private		
	swapBack	Private	✓	swapping
	launched	Private		
	launch	Internal	✓	
	setTxLimit	External	✓	onlyOwner
	setIsFeeExempt	External	✓	onlyOwner
	setIsTxLimitExempt	External	✓	onlyOwner
	setFees	External	✓	onlyOwner
	setFeeReceivers	External	✓	onlyOwner
	setSwapBackSettings	External	✓	onlyOwner
	rescueBNB	External	✓	onlyOwner

# Contract Flow





## Domain Info

<b>Domain Name</b>	moonknightbsc.xyz
<b>Registry Domain ID</b>	D296129236-CNIC
<b>Creation Date</b>	2022-05-10T15:16:55.0Z
<b>Updated Date</b>	2022-05-11T09:27:42.0Z
<b>Registry Expiry Date</b>	2023-05-10T23:59:59.0Z
<b>Registrar WHOIS Server</b>	whois.namecheap.com
<b>Registrar URL</b>	<a href="https://namecheap.com">https://namecheap.com</a>
<b>Registrar</b>	Namecheap
<b>Registrar IANA ID</b>	1068

The domain has been created 2 days before the creation of the audit. It will expire in 12 months.

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

## Summary

Moon Knight is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler error or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions. There is also a limit of max 10% fees.

## Disclaimer

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## About Cyberscope

Coinscope audit and K.Y.C. service has been rebranded to Cyberscope.

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.

Cyberscope and Coinscope are aiming to make crypto discoverable and efficient globally. They provides all the essential tools to assist users draw their own conclusions.



The Cyberscope team

<https://www.cyberscope.io>