Cyberscope

Audit Report

Asuna Hentai

April 2022

Type	BEP20
Network	BSC
Address	0x4e79e344D78B12B5B371E52b0FA4b1Db749cBc08
Audited by	© cyberscope

Table of Contents

Contract Review

Contract Name	AsunaHentai
Compiler Version	v0.6.12+commit.27d51765
Optimization	200 runs
Licence	MIT
Explorer	https://bscscan.com/token/0x4e79e344d78b12b5b371e52b0fa4b1db749cbc08
Symbol	ASUNA
Decimals	18
Total Supply	1,000,000,000,000,000
Domain	asunahentai.io

Source Files

Filename	**SHA256**
contract.sol	c425bb63e3a5ad53e55d3359a0e03575c8aa32eb3649b3b943e56161f4d37b3e

Audit Updates

Initial Audit	28th April 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#L839,853,883

Description

The contract owner has the authority to stop the sales for all users excluding the owner. The owner may take advantage of it by setting the `_sellAdvestisementFee` to a high value.

```
}else if(isSell){
    _taxFee = _sellTaxFee;
    _advestisementFee = _sellAdvestisementFee;
}
```

The contract owner has the authority to allow transactions only for specific users. The owner may take advantage of it by adding addresses to the `antibotModeWhitelist` and enabling the `isAntibotModeEnabled`

```
if (from == owner() || from == airdropContract) return;
require(antibotModeWhitelist[from] && antibotModeWhitelist[to], "Address not in antibot mode whitelist");
```

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 antibotModeWhitelist should not be able to be manipulated after the launch of the non-whitelist trading.

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#L696

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 `setAdvestisementFeePercent` function with a high percentage value.

```
function setAdvestisementFeePercent(uint256 buyAdvestisementFee, uint256
sellAdvestisementFee) external onlyOwner() {
    _sellAdvestisementFee = sellAdvestisementFee;
    _buyAdvestisementFee = buyAdvestisementFee;
}
```

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.

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
	L07	Missing Events Arithmetic
	L09	Dead Code Elimination

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L429,438,444,449,457,555,559,563,567,571,575,580,585,589,594,600,605,610,614,620,671,676,682,812,824,828,832

Description

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

```
setAntibotModeWhitelist
setAirdropContract
turnOffAntibotMode
isExcludedFromFee
includeInFee
manageAmmPairs
excludeFromFee
reflectionFromToken
totalFees
...
```

Recommendation

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

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contract.sol#L502,500,501,496

Description

Constant state variables should be declared constant to save gas.

```
_tTotal
_symbol
_name
_decimals
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L477,774,780,786,828,504,505,509,510,522,527

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
_advestisementFee
_sellAdvestisementFee
_sellTaxFee
_buyAdvestisementFee
_buyTaxFee
_airdropContract
_amount
WETH
...
```

Recommendation

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

L07 - Missing Events Arithmetic

Criticality	minor
Location	contract.sol#L686,692,696,701

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 ** 3)
_sellAdvestisementFee = sellAdvestisementFee
_burnFee = fee
_buyTaxFee = buyTaxFee
```

Recommendation

Emit an event for critical parameter changes.

L09 - Dead Code Elimination

Criticality	minor
Location	contract.sol#L355,315,325,340,350,262,289

Description

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

```
sendValue
isContract
functionCallWithValue
functionCall
_functionCallWithValue
```

Recommendation

Remove unused functions.

Contract Functions

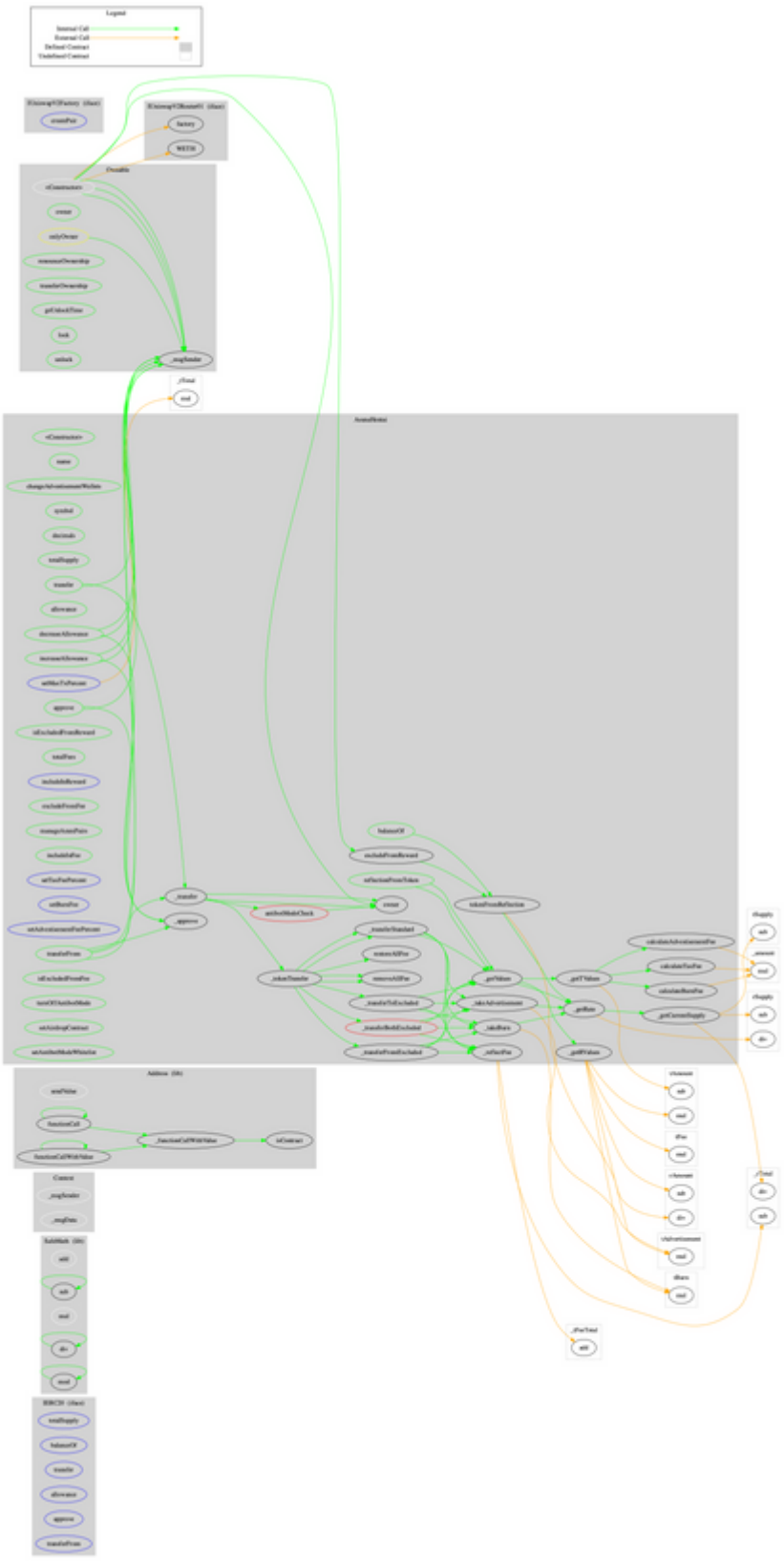
Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
	mod	Internal		
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Address	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	

	_functionCallWithValue	Private	✓	
Ownable	Implementation	Context		
	<Constructor>	Internal	✓	
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	geUnlockTime	Public		-
	lock	Public	✓	onlyOwner
	unlock	Public	✓	-
IUniswapV2Factory	Interface			
	createPair	External	✓	-
IUniswapV2Router01	Interface			
	factory	External		-
	WETH	External		-
AsunaHentai	Implementation	Context, IERC20, Ownable		
	<Constructor>	Public	✓	-
	name	Public		-
	changeAdvestisementWallets	Public	✓	onlyOwner
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	isExcludedFromReward	Public		-

	totalFees	Public		-
	reflectionFromToken	Public		-
	tokenFromReflection	Public		-
	excludeFromReward	Public	✓	onlyOwner
	includeInReward	External	✓	onlyOwner
	_transferBothExcluded	Private	✓	
	excludeFromFee	Public	✓	onlyOwner
	manageAmmPairs	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	setTaxFeePercent	External	✓	onlyOwner
	setBurnFee	External	✓	onlyOwner
	setAdvestisementFeePercent	External	✓	onlyOwner
	setMaxTxPercent	External	✓	onlyOwner
	_reflectFee	Private	✓	
	_getValues	Private		
	_getTValues	Private		
	_getRValues	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	_takeAdvertisement	Private	✓	
	_takeBurn	Private	✓	
	calculateTaxFee	Private		
	calculateAdvestisementFee	Private		
	calculateBurnFee	Private		
	removeAllFee	Private	✓	
	restoreAllFee	Private	✓	
	isExcludedFromFee	Public		-
	_approve	Private	✓	
	turnOffAntibotMode	Public	✓	onlyOwner
	setAirdropContract	Public	✓	onlyOwner
	setAntibotModeWhitelist	Public	✓	onlyOwner
	antibotModeCheck	Private		
	_transfer	Private	✓	
	_tokenTransfer	Private	✓	
	_transferStandard	Private	✓	

	_transferToExcluded	Private	✓	
	_transferFromExcluded	Private	✓	

Contract Flow



Domain Info

Domain Name	asunahentai.io
Registry Domain ID	81ff37bd156349caba7872f796045d05-DONUTS
Creation Date	2022-04-24T18:34:08Z
Updated Date	2022-04-24T18:34:08Z
Registry Expiry Date	2023-04-24T18:34:08Z
Registrar WHOIS Server	whois.porkbun.com
Registrar URL	http://porkbun.com
Registrar	Porkbun LLC
Registrar IANA ID	1861

The domain has been created 4 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

There are some functions that can be abused by the owner, like manipulating fees and stopping transactions. The contract can be converted into a honeypot and prevent users from selling if the owner abuses the admin functions. 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 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