

Smart Contract
Audit Report





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# **AUDITED DETAILS**

## | Audited Project

Project name	Token ticker	Blockchain
Loong	Loong	Ethereum

## Addresses

Contract address	0x613Df740e9DeD8d50A044a2B259c99c44C9DD929
Contract deployer address	0x5e41bc5922370522800103F826c3BB9CD5D83f1a

## Project Website

https://longerc.com/

### Codebase

https://etherscan.io/address/0x613Df740e9DeD8d50A044a2B259c99c44C9DD929#code



### **SUMMARY**

Loong "The 120 year old dragon" has come to ERC20.

Join the community on this fresh launch with a team who has done millions of market cap several times!

### Contract Summary

#### **Documentation Quality**

Loong provides a very good documentation with standard of solidity base code.

• The technical description is provided clearly and structured and also dont have any high risk issue.

#### **Code Quality**

The Overall quality of the basecode is standard.

 Standard solidity basecode and rules are already followed by Loong with the discovery of several low issues.

#### **Test Coverage**

Test coverage of the project is 100% (Through Codebase)

### Audit Findings Summary

- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 87, 102, 110, 111, 125, 179, 179, 180, 180, 206, 206, 207, 356, 362, 364, 430, 560, 560, 560, 576, 576, 577, 581, 581, 582 and 586.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 16.
- SWC-110 SWC-123 | It is recommended to use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 402, 403, 431 and 587.



## CONCLUSION

We have audited the Loong project released on January 2023 to discover issues and identify potential security vulnerabilities in Loong Project. This process is used to find technical issues and security loopholes which might be found in the smart contract.

The security audit report provides a satisfactory result with some low-risk issues.

The issues found in the Loong smart contract code do not pose a considerable risk. The writing of the contract is close to the standard of writing contracts in general. The low-risk issues found are some arithmetic operation issues, a floating pragma is set and out of bounds array access which the index access expression can cause an exception in case of the use of an invalid array index value.



# **AUDIT RESULT**

Article	Category	Description	Result	
Default Visibility	SWC-100 SWC-108	Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously.	PASS	
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.		
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	PASS	
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	ISSUE FOUND	
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS	
Unprotected Ether Withdrawal	SWC-105	Due to missing or insufficient access controls, malicious parties can withdraw from the contract.		
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	PASS	
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	PASS	
Uninitialized Storage Pointer	SWC-109	Uninitialized local storage variables can point to unexpected storage locations in the contract.		
Assert Violation	SWC-110 SWC-123	Properly functioning code should never reach a failing assert statement.	ISSUE FOUND	
Deprecated Solidity Functions	SWC-111	1 Deprecated built-in functions should never be used. P		
Delegate call to Untrusted Callee	SWC-112	Delegatecalls should only be allowed to trusted addresses.	PASS	



DoS (Denial of Service)	SWC-113 SWC-128	Execution of the code should never be blocked by a specific contract state unless required.	PASS
Race Conditions	SWC-114	Race Conditions and Transactions Order Dependency should not be possible.	
Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	
Signature Unique ID	SWC-117 SWC-121 SWC-122	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.	PASS
Incorrect Constructor Name	SWC-118	Constructors are special functions that are called only once during the contract creation.	
Shadowing State Variable	SWC-119	State variables should not be shadowed.	
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	
Write to Arbitrary Storage Location	SWC-124	The contract is responsible for ensuring that only authorized user or contract accounts may write to sensitive storage locations.	
Incorrect Inheritance Order	SWC-125  When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/.		PASS
Insufficient Gas Griefing	SWC-126	Insufficient gas griefing attacks can be performed on contracts which accept data and use it in a sub-call on another contract.	
Arbitrary Jump Function	SWC-127	As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value.	PASS



Typographical Error	SWC-129	A typographical error can occur for example when the intent of a defined operation is to sum a number to a variable.	
Override control character	SWC-130	Malicious actors can use the Right-To-Left-Override unicode character to force RTL text rendering and confuse users as to the real intent of a contract.	
Unused variables	SWC-131 SWC-135	Unused variables are allowed in Solidity and they do not pose a direct security issue.	PASS
Unexpected Ether balance	SWC-132	Contracts can behave erroneously when they strictly assume a specific Ether balance.	
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.	
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	



# **SMART CONTRACT ANALYSIS**

Started	Tuesday Jan 10 2023 22:24:21 GMT+0000 (Coordinated Universal Time)		
Finished	Wednesday Jan 11 2023 00:23:15 GMT+0000 (Coordinated Universal Time)		
Mode	Standard		
Main Source File	Loong.sol		

## Detected Issues

ID	Title	Severity	Status
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "%" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged



SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged



LINE 87

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
86  function add(uint256 a, uint256 b) internal pure returns (uint256) {
87   uint256 c = a + b;
88   require(c >= a, "SafeMath: addition overflow");
89   return c;
90  }
91
```



**LINE 102** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
101 require(b <= a, errorMessage);
102 uint256 c = a - b;
103 return c;
104 }
105
106</pre>
```



**LINE 110** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
109  }
110  uint256 c = a * b;
111  require(c / a == b, "SafeMath: multiplication overflow");
112  return c;
113  }
114
```



**LINE 111** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
110    uint256    c = a * b;
111    require(c / a == b, "SafeMath: multiplication overflow");
112    return c;
113    }
114
115
```



**LINE 125** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
124 require(b > 0, errorMessage);
125 uint256 c = a / b;
126 return c;
127 }
128 }
129
```



**LINE** 179

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
uint256 private constant MAX = ~uint256(0);
uint256 private constant _tTotal = 1000000000 * 10**9;
uint256 private _rTotal = (MAX - (MAX % _tTotal));
uint256 private _tFeeTotal;
uint256 private _MFeeOnBuy = 0;
```



**LINE** 179

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
uint256 private constant MAX = ~uint256(0);
uint256 private constant _tTotal = 1000000000 * 10**9;
uint256 private _rTotal = (MAX - (MAX % _tTotal));
uint256 private _tFeeTotal;
uint256 private _MFeeOnBuy = 0;
```



**LINE 180** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
uint256 private constant _tTotal = 100000000 * 10**9;
uint256 private _rTotal = (MAX - (MAX % _tTotal));
uint256 private _tFeeTotal;
uint256 private _MFeeOnBuy = 0;
uint256 private _taxFeeOnBuy = 10;
```



**LINE 180** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
uint256 private constant _tTotal = 100000000 * 10**9;
uint256 private _rTotal = (MAX - (MAX % _tTotal));
uint256 private _tFeeTotal;
uint256 private _MFeeOnBuy = 0;
uint256 private _taxFeeOnBuy = 10;
```



**LINE 206** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
uint256 public _maxTxAmount = _tTotal;
uint256 public _maxWalletSize = _tTotal * 2 / 100;
uint256 public _swapTokensAtAmount = _tTotal / 1000;
uint256 public _swapTokensAtAmount = _tTotal / 1000;
event MaxTxAmountUpdated(uint256 _maxTxAmount);
```



**LINE 206** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
uint256 public _maxTxAmount = _tTotal;
uint256 public _maxWalletSize = _tTotal * 2 / 100;
uint256 public _swapTokensAtAmount = _tTotal / 1000;
uint256 public _swapTokensAtAmount = _tTotal / 1000;
event MaxTxAmountUpdated(uint256 _maxTxAmount);
```



**LINE 207** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
uint256 public _maxWalletSize = _tTotal * 2 / 100;
uint256 public _swapTokensAtAmount = _tTotal / 1000;

event MaxTxAmountUpdated(uint256 _maxTxAmount);

modifier lockTheSwap {

211
```



**LINE 356** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
355  if(to != uniswapV2Pair) {
356   require(balanceOf(to) + amount < _maxWalletSize, "TOKEN: Balance exceeds wallet
size!");
357  }
358
359  uint256 contractTokenBalance = balanceOf(address(this));
360</pre>
```



**LINE 362** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
361
362 if(contractTokenBalance >= _swapTokensAtAmount*8)
363 {
364  contractTokenBalance = _swapTokensAtAmount*8;
365 }
366
```



**LINE 364** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
363 {
364 contractTokenBalance = _swapTokensAtAmount*8;
365 }
366
367 if (canSwap && !inSwap && from != uniswapV2Pair && swapEnabled &&
!_isExcludedFromFee[from] && !_isExcludedFromFee[to]) {
368
```



**LINE 430** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
function blockBots(address[] memory bots_) public onlyOwner {
for (uint256 i = 0; i < bots_.length; i++) {
  bots[bots_[i]] = true;
}

432  }

433  }

434</pre>
```



**LINE 560** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
559 _taxFeeOnSell = taxFeeOnSell;
560 uint256 totalFee = _MFeeOnBuy+_MFeeOnSell+_taxFeeOnBuy+_taxFeeOnSell;
561 require (totalFee <= 25, "Total Fees cannot be more than 25%");
562 }
563
564
```



**LINE 560** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
559 _taxFeeOnSell = taxFeeOnSell;
560 uint256 totalFee = _MFeeOnBuy+_MFeeOnSell+_taxFeeOnBuy+_taxFeeOnSell;
561 require (totalFee <= 25, "Total Fees cannot be more than 25%");
562 }
563
564
```



**LINE 560** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
559 _taxFeeOnSell = taxFeeOnSell;
560 uint256 totalFee = _MFeeOnBuy+_MFeeOnSell+_taxFeeOnBuy+_taxFeeOnSell;
561 require (totalFee <= 25, "Total Fees cannot be more than 25%");
562 }
563
564
```



**LINE 576** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
575 function setMaxTxnAmount(uint256 maxTxAmount) public onlyOwner {
576   _maxTxAmount = _tTotal*maxTxAmount/100;
577   require (_maxTxAmount>= _tTotal/100);
578  }
579
580
```



**LINE 576** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
function setMaxTxnAmount(uint256 maxTxAmount) public onlyOwner {
    _maxTxAmount = _tTotal*maxTxAmount/100;
    require (_maxTxAmount>= _tTotal/100);
}

578  }

579

580
```



**LINE 577** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
576 _maxTxAmount = _tTotal*maxTxAmount/100;
577 require (_maxTxAmount>= _tTotal/100);
578 }
579
580 function setMaxWalletSize(uint256 maxWalletSize) public onlyOwner {
581
```



**LINE 581** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
function setMaxWalletSize(uint256 maxWalletSize) public onlyOwner {
    _maxWalletSize = _tTotal*maxWalletSize/100;
    require (_maxWalletSize>= _tTotal/100);
}

83
}

84
585
```



**LINE 581** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
function setMaxWalletSize(uint256 maxWalletSize) public onlyOwner {
    _maxWalletSize = _tTotal*maxWalletSize/100;
    require (_maxWalletSize>= _tTotal/100);
}

83
}

84
585
```



**LINE 582** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
581 _maxWalletSize = _tTotal*maxWalletSize/100;
582 require (_maxWalletSize>= _tTotal/100);
583 }
584
585 function excludeMultipleAccountsFromFees(address[] calldata accounts, bool excluded) public onlyOwner {
586
```



**LINE 586** 

#### **low SEVERITY**

This plugin produces issues to support false positive discovery within mythril.

#### Source File

- Loong.sol

```
585 function excludeMultipleAccountsFromFees(address[] calldata accounts, bool
excluded) public onlyOwner {
586   for(uint256 i = 0; i < accounts.length; i++) {
587    _isExcludedFromFee[accounts[i]] = excluded;
588  }
589  }
590</pre>
```



### SWC-103 | A FLOATING PRAGMA IS SET.

LINE 16

#### **low SEVERITY**

The current pragma Solidity directive is ""^0.8.9"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

#### Source File

- Loong.sol

```
15  // SPDX-License-Identifier: Unlicensed
16  pragma solidity ^0.8.9;
17
18  abstract contract Context {
19  function _msgSender() internal view virtual returns (address) {
20
```



**LINE 402** 

#### **low SEVERITY**

The index access expression can cause an exception in case of use of invalid array index value.

#### Source File

- Loong.sol

```
401 address[] memory path = new address[](2);
402 path[0] = address(this);
403 path[1] = uniswapV2Router.WETH();
404 _approve(address(this), address(uniswapV2Router), tokenAmount);
405 uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
406
```



**LINE 403** 

#### **low SEVERITY**

The index access expression can cause an exception in case of use of invalid array index value.

#### Source File

- Loong.sol

```
path[0] = address(this);

403  path[1] = uniswapV2Router.WETH();

404  _approve(address(this), address(uniswapV2Router), tokenAmount);

405  uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
406  tokenAmount,
407
```



**LINE 431** 

#### **low SEVERITY**

The index access expression can cause an exception in case of use of invalid array index value.

#### Source File

- Loong.sol

```
430  for (uint256 i = 0; i < bots_.length; i++) {
431  bots[bots_[i]] = true;
432  }
433  }
434
435</pre>
```



**LINE 587** 

#### **low SEVERITY**

The index access expression can cause an exception in case of use of invalid array index value.

#### Source File

- Loong.sol

```
586    for(uint256 i = 0; i < accounts.length; i++) {
587     _isExcludedFromFee[accounts[i]] = excluded;
588    }
589    }
590
591</pre>
```



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This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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Sysfixed is a blockchain security certification organization established in 2021 with the objective to provide smart contract security services and verify their correctness in blockchain-based protocols. Sysfixed automatically scans for security vulnerabilities in Ethereum and other EVM-based blockchain smart contracts. Sysfixed a comprehensive range of analysis techniques—including static analysis, dynamic analysis, and symbolic execution—can accurately detect security vulnerabilities to provide an in-depth analysis report. With a vibrant ecosystem of world-class integration partners that amplify developer productivity, Sysfixed can be utilized in all phases of your project's lifecycle. Our team of security experts is dedicated to the research and improvement of our tools and techniques used to fortify your code.