Beast Token

Smart Contract Audit Report

SYSFIXED

08 Jan 2023

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Beast Token	$BEAST	Binance Smart Chain

Addresses

Contract address	0x99a31079D0D56A02145B8Bc3d56152E84970eB6F
Contract deployer address	0xbDAB0514587ef28A67C8b7eb8eB8ED0591591a2D

Project Website

https://beastplatform.org/

Codebase

https://bscscan.com/address/0x99a31079D0D56A02145B8Bc3d56152E84970eB6F#code

SUMMARY

As we love art, we will endorse all of our community artworks by providing a NFT marketplace where people will be able to create their own NFT on Beast Platform. Big Buy Competition $2,500 prize - contribution of 5 BNB or more, $1,500 prize - contribution of 2 to 4 BNB, $500 prize - contribution of .1 to 1 BNB. This competition will carry on til 1 week after launch. Fast Track for CMC & CG at the time of launch.

Contract Summary

Documentation Quality

Beast Token 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 Beast Token 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 842, 842, 855, 855, 968, 981, 994, 1044, 1044, 1099, 1099, 1099, 1114, 1116, 1127, 1127, 1128, 1133 and 1198.
- 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 1055, 1056, 1189 and 1190.

CONCLUSION

We have audited the Beast Token project released on January 2023 to discover issues and identify potential security vulnerabilities in Beast Token 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 Beast Token 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, 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.	ISSUE FOUND
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.	PASS
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.	PASS
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.	PASS
Assert Violation	SWC-110 SWC-123	Properly functioning code should never reach a failing assert statement.	ISSUE FOUND
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	PASS
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.	PASS
Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	PASS
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	PASS
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.	PASS
Shadowing State Variable	SWC-119	State variables should not be shadowed.	PASS
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	PASS
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.	PASS
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.	PASS
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.	PASS
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.	PASS
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.	PASS
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	PASS
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.	PASS
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	PASS

SMART CONTRACT ANALYSIS

Started	Saturday Jan 07 2023 12:35:33 GMT+0000 (Coordinated Universal Time)
Finished	Sunday Jan 08 2023 15:52:13 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	Beast Token.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-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
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SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 842

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
841   //Supply Definition.
842   uint256 private _tTotal = 1_000_000 * 10**18;
843   uint256 private _tFeeTotal;
844   //Token Definition.
845   string private constant _name = "Beast Token";
846
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 842

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Source File

- Beast Token.sol

Locations

```
841   //Supply Definition.
842   uint256 private _tTotal = 1_000_000 * 10**18;
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844   //Token Definition.
845   string private constant _name = "Beast Token";
846
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 855

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
854
855   uint256 private minimumTokensBeforeSwap = 100 * 10**_decimals;
856
857   //Oracle Price Update, Manual Process.
858   uint256 public swapOutput = 0;
859
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 855

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
854
855   uint256 private minimumTokensBeforeSwap = 100 * 10**_decimals;
856
857   //Oracle Price Update, Manual Process.
858   uint256 public swapOutput = 0;
859
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 968

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
967   _msgSender(),
968   _allowances[sender][_msgSender()] - amount
969   );
970   return true;
971   }
972
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 981

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
980   spender,
981   _allowances[_msgSender()][spender] + addedValue
982   );
983   return true;
984   }
985
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 994

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
993   spender,
994   _allowances[_msgSender()][spender] - subtractedValue
995   );
996   return true;
997   }
998
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 1044

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1043
1044   uint256 ethForMarketing = (initialBalance * marketingTokensCollected) /
1045   walletsTotal;
1046
1047   transferToAddressETH(marketingWalletAddress, ethForMarketing);
1048
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 1044

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1043
1044   uint256 ethForMarketing = (initialBalance * marketingTokensCollected) /
1045   walletsTotal;
1046
1047   transferToAddressETH(marketingWalletAddress, ethForMarketing);
1048
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1099

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1098   // if(totalSwapableSaleFee==0) { return; }
1099   marketingTokensCollected += (amount * _saleMarketingFee) / 100;
1100   }
1101   //transfer with no tax.
1102   function _transferBothExcluded(
1103
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 1099

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1098   // if(totalSwapableSaleFee==0) { return; }
1099   marketingTokensCollected += (amount * _saleMarketingFee) / 100;
1100   }
1101   //transfer with no tax.
1102   function _transferBothExcluded(
1103
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 1099

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1098   // if(totalSwapableSaleFee==0) { return; }
1099   marketingTokensCollected += (amount * _saleMarketingFee) / 100;
1100   }
1101   //transfer with no tax.
1102   function _transferBothExcluded(
1103
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 1114

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1113   }
1114   _tOwned[sender] = _tOwned[sender] - tAmount;
1115
1116   _tOwned[recipient] = _tOwned[recipient] + tTransferAmount;
1117
1118
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 1116

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1115
1116   _tOwned[recipient] = _tOwned[recipient] + tTransferAmount;
1117
1118   emit Transfer(sender, recipient, tTransferAmount);
1119   }
1120
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 1127

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1126   //uint256 tFee = calculateTaxFee(tAmount);
1127   uint256 tLiquidity = (tAmount * totalSwapableSaleFee) / 100;
1128   uint256 tTransferAmount = (tAmount) - tLiquidity;
1129   return (tTransferAmount, tLiquidity);
1130   }
1131
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 1127

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1126   //uint256 tFee = calculateTaxFee(tAmount);
1127   uint256 tLiquidity = (tAmount * totalSwapableSaleFee) / 100;
1128   uint256 tTransferAmount = (tAmount) - tLiquidity;
1129   return (tTransferAmount, tLiquidity);
1130   }
1131
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 1128

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1127   uint256 tLiquidity = (tAmount * totalSwapableSaleFee) / 100;
1128   uint256 tTransferAmount = (tAmount) - tLiquidity;
1129   return (tTransferAmount, tLiquidity);
1130   }
1131
1132
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 1133

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1132   function _takeLiquidity(uint256 tLiquidity) private {
1133   _tOwned[address(this)] = _tOwned[address(this)] + tLiquidity;
1134   //emit Transfer(address(0), address(this), tLiquidity);
1135   }
1136
1137
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 1198

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1197   deadWallet, // Burn address
1198   block.timestamp + 300
1199   );
1200   emit SwapETHForTokens(amount, path);
1201   }
1202
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1055

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1054   address[] memory path = new address[](2);
1055   path[0] = address(this);
1056   path[1] = uniswapV2Router.WETH();
1057   _approve(address(this), address(uniswapV2Router), tokenAmount);
1058
1059
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1056

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1055   path[0] = address(this);
1056   path[1] = uniswapV2Router.WETH();
1057   _approve(address(this), address(uniswapV2Router), tokenAmount);
1058
1059   // make the swap
1060
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1189

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1188   address[] memory path = new address[](2);
1189   path[0] = uniswapV2Router.WETH();
1190   path[1] = address(this);
1191   // make the swap
1192   uniswapV2Router.swapExactETHForTokensSupportingFeeOnTransferTokens{
1193
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1190

low SEVERITY

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

Source File

- Beast Token.sol

Locations

```
1189   path[0] = uniswapV2Router.WETH();
1190   path[1] = address(this);
1191   // make the swap
1192   uniswapV2Router.swapExactETHForTokensSupportingFeeOnTransferTokens{
1193   value: amount
1194
```

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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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