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AUDIT COMPANY

Smart Contract Security Audit

TechRate

November, 2021

Audit Details

Audited project

Hero Inu

Deployer address

0x5c3c73fdbe192b3358f1da7243cc335d6a00553c

Client contacts:

Hero Inu team

Blockchain

Ethereum

Project website:

https://www.hero-inu.com

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at 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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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

Background

TechRate was commissioned by Hero Inu to perform an audit of smart contracts:

https://etherscan.io/address/0x97bFC1700bAF347659b525336B967AA375c05b01#code

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

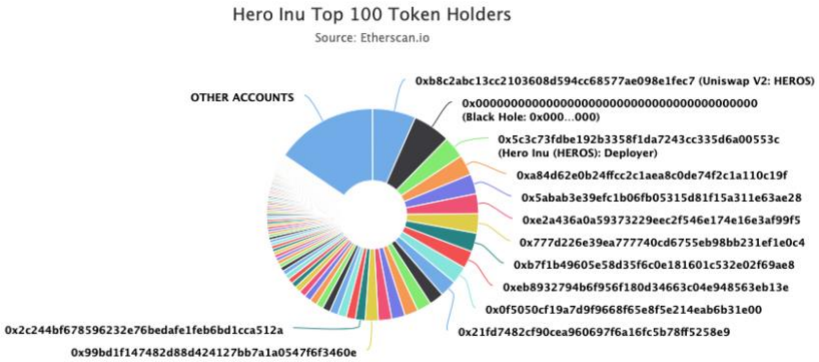
Contracts Details

Token contract details for 30.11.2021

Contract name	Hero Inu
Contract address	0x97bFC1700bAF347659b525336B967AA375c05b01
Total supply	100,000,000,000,000,000
Token ticker	HEROS
Decimals	9
Token holders	1,039
Transactions count	4,792
Top 100 holders dominance	84.46%
Marketing	0x99bd1f147482d88d424127bb7a1a0547f6f3460e
Charity	0x1437f8a610a189365af3fc440ed67d78b7a3fe33
Total fees	5577788958418943006004171
Uniswap V2 pair	0xb8c2abc13cc2103608d594cc68577ae098e1fec7
Contract deployer address	0x5c3c73fdbe192b3358f1da7243cc335d6a00553c
Contract's current owner address	0x5c3c73fdbe192b3358f1da7243cc335d6a00553c

Hero Inu Token Distribution

The top 100 holders collectively own 84.46% (84,457,308,116,957,400.00 Tokens) of Hero Inu | Token Total Supply: 100,000,000,000,000,000.00 Token | Total Token Holders: 1,039

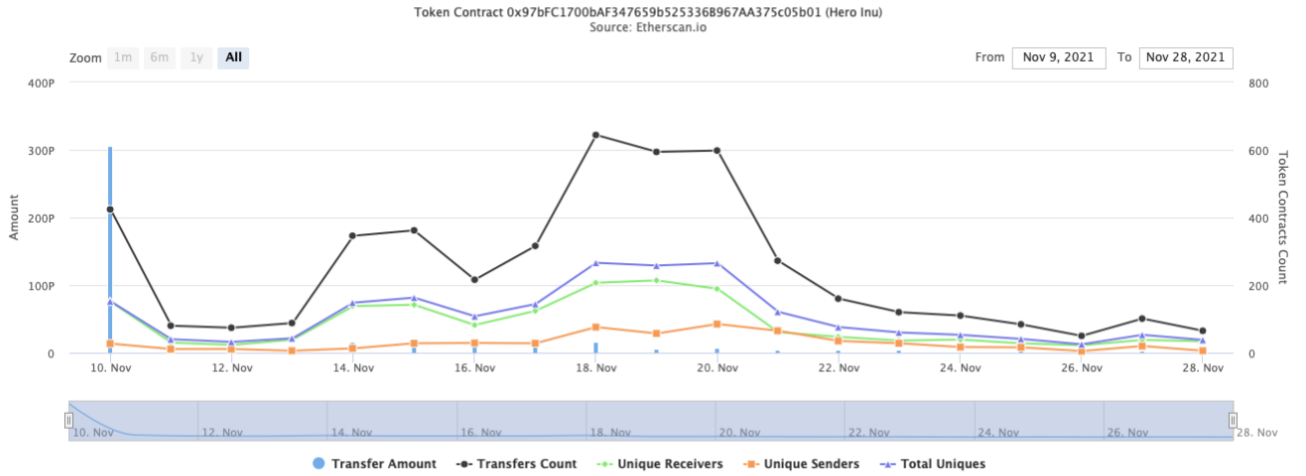


(A total of 84,457,308,116,957,400.00 tokens held by the top 100 accounts from the total supply of 100,000,000,000,000,000.00 token)

Hero Inu Contract Interaction Details

Time Series: Token Contract Overview

Wed 10, Nov 2021 - Sun 28, Nov 2021



Hero Inu Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Uniswap V2: HEROS	6,614,440,715,663,720.080413128	6.6144%
2	Black Hole: 0x000…000	5,737,034,926,869,650.632808118	5.7370%
3	Hero Inu (HEROS): Deployer	3,330,765,494,651,640.908583063	3.3308%
4	0xa84d62e0b24ffcc2c1aea8c0de74f2c1a110c19f	3,115,769,961,104,000.658475234	3.1158%
5	0x5abab3e39efc1b06fb05315d81f15a311e63ae28	3,038,562,143,974,980.753080732	3.0386%
6	0xe2a436a0a59373229eec2f546e174e16e3af99f5	3,003,971,406,148,760.123754911	3.0040%
7	0x777d226e39ea777740cd6755eb98bb231ef1e0c4	2,999,066,109,478,580.891815764	2.9991%
8	0xb7f1b49605e58d35f6c0e181601c532e02f69ae8	2,840,029,508,951,870.046880239	2.8400%
9	0xeb8932794b6f956f180d34663c04e948563eb13e	2,670,405,440,485,530.232841269	2.6704%
10	0x0f5050cf19a7d9f9668f65e8f5e214eab6b31e00	2,644,609,038,162,260.906427123	2.6446%

Contract functions details

+ [Int] IERC20
  - [Ext] totalSupply
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transferFrom #

+ [Lib] SafeMath
  - [Int] add
  - [Int] sub
  - [Int] sub
  - [Int] mul
  - [Int] div
  - [Int] div
  - [Int] mod
  - [Int] mod

+ Context
  - [Int] _msgSender
  - [Int] _msgData

+ [Lib] Address
  - [Int] isContract
  - [Int] sendValue #
  - [Int] functionCall #
  - [Int] functionCall #
  - [Int] functionCallWithValue #
  - [Int] functionCallWithValue #
  - [Prv] _functionCallWithValue
+ Ownable (Context)
  - [Int] <Constructor> #
  - [Pub] owner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner
  - [Pub] geUnlockTime
  - [Pub] lock #
    - modifiers: onlyOwner
  - [Pub] unlock #
+ [Int] IUniswapV2Factory
  - [Ext] feeTo
  - [Ext] feeToSetter
  - [Ext] getPair
  - [Ext] allPairs
  - [Ext] allPairsLength
  - [Ext] createPair #
  - [Ext] setFeeTo #
  - [Ext] setFeeToSetter #
+ [Int] IUniswapV2Pair

- [Ext] name
- [Ext] symbol
- [Ext] decimals
- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] allowance
- [Ext] approve #
- [Ext] transfer #
- [Ext] transferFrom #
- [Ext] DOMAIN_SEPARATOR
- [Ext] PERMIT_TYPEHASH
- [Ext] nonces
- [Ext] permit #
- [Ext] MINIMUM_LIQUIDITY
- [Ext] factory
- [Ext] token0
- [Ext] token1
- [Ext] getReserves
- [Ext] price0CumulativeLast
- [Ext] price1CumulativeLast
- [Ext] kLast
- [Ext] mint #
- [Ext] burn #
- [Ext] swap #
- [Ext] skim #
- [Ext] sync #
- [Ext] initialize #

+ [Int] IUniswapV2Router01
  - [Ext] factory
  - [Ext] WETH
  - [Ext] addLiquidity #
  - [Ext] addLiquidityETH ($)
  - [Ext] removeLiquidity #
  - [Ext] removeLiquidityETH #
  - [Ext] removeLiquidityWithPermit #
  - [Ext] removeLiquidityETHWithPermit #
  - [Ext] swapExactTokensForTokens #
  - [Ext] swapTokensForExactTokens #
  - [Ext] swapExactETHForTokens ($)
  - [Ext] swapTokensForExactETH #
  - [Ext] swapExactTokensForETH #
  - [Ext] swapETHForExactTokens ($)
  - [Ext] quote
  - [Ext] getAmountOut
  - [Ext] getAmountIn
  - [Ext] getAmountsOut
  - [Ext] getAmountsIn
+ [Int] IUniswapV2Router02 (IUniswapV2Router01)
  - [Ext] removeLiquidityETHSupportingFeeOnTransferTokens #
  - [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens #
  - [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
  - [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens ($)
  - [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

+ HeroInu (Context, IERC20, Ownable)

- [Pub] <Constructor> #
- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Pub] totalFees
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Pub] manualSwapAndLiquify #
  - modifiers: onlyOwner
- [Pub] excludeFromFee #
  - modifiers: onlyOwner
- [Pub] includeInFee #
  - modifiers: onlyOwner
- [Ext] setTax #
  - modifiers: onlyOwner
- [Ext] setMaxWalletHoldingPercent #
  - modifiers: onlyOwner
- [Pub] setSwapAndLiquifyEnabled #
  - modifiers: onlyOwner
- [Ext] <Fallback> ($)
- [Prv] _reflectFee #
- [Prv] _getValues
- [Prv] _getTValuesArray
- [Prv] _getRValuesArray
- [Prv] _getRate
- [Prv] _getCurrentSupply
- [Prv] _takeLiquidity #
- [Prv] _takeOperations #
- [Prv] calculateTaxFee
- [Prv] calculateLiquidityFee
- [Prv] calculateOperationsFee
- [Prv] removeAllFee #
- [Prv] saveAllFee #
- [Pub] isExcludedFromFee
- [Prv] _approve #
- [Prv] _transfer #
- [Prv] swapAndLiquify #
  - modifiers: lockTheSwap
- [Prv] swapTokensForEth #
- [Prv] addLiquidity #
- [Prv] payDistribution #
- [Prv] _tokenTransfer #
- [Prv] _transferStandard #

($) = payable function
= non-constant function

Issues Checking Status

	Issue description	Checking status
1.	Compiler errors.	Passed
2.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3.	Possible delays in data delivery.	Passed
4.	Oracle calls.	Passed
5.	Front running.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow.	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Passed
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	The impact of the exchange rate on the logic.	Passed
13.	Private user data leaks.	Passed
14.	Malicious Event log.	Passed
15.	Scoping and Declarations.	Passed
16.	Uninitialized storage pointers.	Passed
17.	Arithmetic accuracy.	Passed
18.	Design Logic.	Passed
19.	Cross-function race conditions.	Passed
20.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed

Security Issues

High Severity Issues

No high severity issues found.

Medium Severity Issues

No medium severity issues found.

Low Severity Issues

No low severity issues found.

Owner privileges (In the period when the owner is not renounced)

- Owner can manually swap and liquify.
- Owner can exclude from the fee.
- Owner can change taxes.
- Owner can change _maxWalletHolding.
- Owner can enable/disable swap and liquify.
- Owner can lock and unlock. By the way, using these functions the owner could retake privileges even after the ownership was renounced.

Conclusion

Smart contracts do not contain high severity issues! Liquidity pair contract's security is not checked due to out of scope.

Liquidity locking details are provided by the team:
https://app.unicrypt.network/amm/uni-v2/pair/0xb8c2abC13cC2103608D594Cc68577aE098e1FEc7

TechRate note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.