

TechRate
April, 2022



SMART CONTRACTS SECURITY AUDIT REPORT



Techrate_audits



Techrate



Techrate1

Audit Details



Audited project

Crypto Titan Token



Deployer address

0xd2cfa67ee0e547ef1ddfb47c568e9bcfa729ba8f



Client contacts:

Crypto Titan Token team



Blockchain

Ethereum



Project website:

www.titancrypto.org

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 Crypto Titan Token to perform an audit of smart contracts:

<https://etherscan.io/address/0xea18370f4568c1b7cb59246bb94c5bf0d5015cf5#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 29.04.2022

Contract name Crypto Titan Token

Contract address 0xEA18370F4568C1b7cb59246Bb94C5bf0d5015Cf5

Total supply 1,000,000,000,000,000

Token ticker TITN

Decimals 18

Token holders 400

Transactions count 5,618

Top 100 holders dominance 89.22%

Total fees 10

Eth rewards fee 2

Liquidity fee 2

Uniswap V2 pair 0x93116dd832c83e87ddfd639fade8a36d29595a85

Contract deployer address 0xd2cfa67ee0e547ef1ddfb47c568e9bcfa729ba8f

Owner address 0xd2cfa67ee0e547ef1ddfb47c568e9bcfa729ba8f

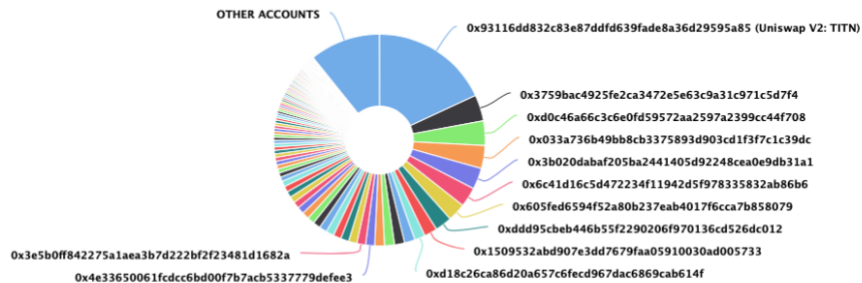
Crypto Titan Token Token Distribution

The top 100 holders collectively own 89.22% (892,176,063,917,636.00 Tokens) of Crypto Titan Token

Token Total Supply: 1,000,000,000,000.00 Token | Total Token Holders: 400

Crypto Titan Token Top 100 Token Holders

Source: Etherscan.io



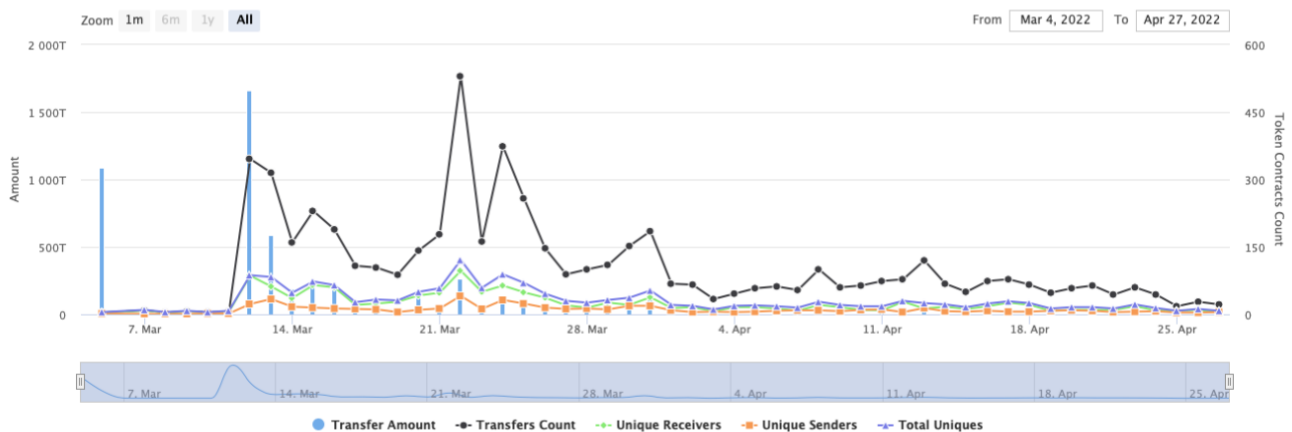
(A total of 892,176,063,917,636.00 tokens held by the top 100 accounts from the total supply of 1,000,000,000,000.00 token)

Crypto Titan Token Contract Interaction Details

Time Series: Token Contract Overview

Sat 5, Mar 2022 - Wed 27, Apr 2022

Token Contract 0xea18370f4568c1b7cb59246bb94c5bf0d5015cf5 (Crypto Titan Token)
Source: Etherscan.io



Crypto Titan Token Top 10 Token Holders

| Rank | Address | Quantity (Token) | Percentage |
|------|--|--|------------|
| 1 | Uniswap V2: TITN | 180,861,604,641,486.821357983491868882 | 18.0862% |
| 2 | 0x3759bac4925fe2ca3472e5e63c9a31c971c5d714 | 40,075,291,470,975.74842670484585277 | 4.0075% |
| 3 | 0xd0c46a66c3c6e0fd59572aa2597a2399cc44f708 | 37,530,784,424,676.751313651359471757 | 3.7531% |
| 4 | 0x033a736b49bb8cb3375893d903cd1f3f7c1c39dc | 35,000,000,000,000 | 3.5000% |
| 5 | 0x3b020dabaf205ba2441405d92248cea0e9db31a1 | 32,493,262,340,084.693562620916650837 | 3.2493% |
| 6 | 0x6c41d16c5d472234f11942d5f978335832ab86b6 | 30,000,000,000,000 | 3.0000% |
| 7 | 0x605fed6594f52a80b237eab4017f6cca7b858079 | 27,753,965,729,774.847586442091014351 | 2.7754% |
| 8 | 0xdd95cbeb446b5f2290206f970136cd526dc012 | 25,766,129,805,703.539597484254439644 | 2.5766% |
| 9 | 0x1509532abd907e3dd7679faa05910030ad005733 | 20,000,000,000,000 | 2.0000% |
| 10 | 0xd18c26ca86d20a657c6fec967dac6869cab614f | 16,322,877,605,771.086701935998828843 | 1.6323% |

Crypto Titan Token LP Token Holders

| Rank | Address | Quantity | Percentage |
|------|--|-------------------------------|------------|
| 1 | SNAP!: Liquidity Pools | 89,005,669.043832385439385917 | 99.1719% |
| 2 | Crypto Titan Token: Deployer | 743,211.374665082058017418 | 0.8281% |
| 3 | Null Address: 0x000...000 | 0.000000000000001 | 0.0000% |

Contract functions details

+ Context

- [Int] _msgSender
- [Int] _msgData

+ [Int] IERC20

- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] transfer #
- [Ext] allowance
- [Ext] approve #
- [Ext] transferFrom #

+ [Int] IERC20Metadata (IERC20)

- [Ext] name
- [Ext] symbol
- [Ext] decimals

+ [Int] DividendPayingTokenOptionalInterface

- [Ext] withdrawableDividendOf
- [Ext] withdrawnDividendOf
- [Ext] accumulativeDividendOf

+ [Int] DividendPayingTokenInterface

- [Ext] dividendOf
- [Ext] distributeDividends (\$)
- [Ext] withdrawDividend #

+ [Lib] SafeMathInt

- [Int] mul
- [Int] div
- [Int] sub
- [Int] add
- [Int] abs
- [Int] toUint256Safe

+ [Lib] SafeMathUint

- [Int] toInt256Safe

+ [Lib] SafeMath

- [Int] add
- [Int] sub

- [Int] sub
- [Int] mul
- [Int] div
- [Int] div
- [Int] mod
- [Int] mod

- + Ownable (Context)
 - [Pub] <Constructor> #
 - [Pub] owner
 - [Pub] renounceOwnership #
 - modifiers: onlyOwner
 - [Pub] transferOwnership #
 - modifiers: onlyOwner

- + ERC20 (Context, IERC20, IERC20Metadata, 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 #
 - [Int] _transfer #
 - [Int] _mint #
 - [Int] _burn #
 - [Int] _approve #
 - [Int] _beforeTokenTransfer #

- + [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 #
- + [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 #

+ [Lib] IterableMapping

- [Pub] get
- [Pub] getIndexOfKey
- [Pub] getKeyAtIndex
- [Pub] size
- [Pub] set #
- [Pub] remove #

+ DividendPayingToken (ERC20, DividendPayingTokenInterface, DividendPayingTokenOptionalInterface)

- [Pub] <Constructor> #
 - modifiers: ERC20
- [Ext] <Fallback> (\$)
- [Pub] distributeDividends (\$)
- [Pub] withdrawDividend #
- [Int] _withdrawDividendOfUser #
- [Pub] dividendOf
- [Pub] withdrawableDividendOf
- [Pub] withdrawnDividendOf
- [Pub] accumulativeDividendOf
- [Int] _transfer #
- [Int] _mint #
- [Int] _burn #
- [Int] _setBalance #

+ TITN (ERC20)

- [Pub] <Constructor> #
 - modifiers: ERC20
- [Ext] <Fallback> (\$)
- [Pub] updateDividendTracker #
 - modifiers: onlyOwner
- [Pub] updateUniswapV2Router #
 - modifiers: onlyOwner
- [Ext] setSellStatus #

- modifiers: onlyOwner
- [Ext] setBuyStatus #
 - modifiers: onlyOwner
- [Pub] excludeFromFees #
 - modifiers: onlyOwner
- [Ext] excludeFromDividends #
 - modifiers: onlyOwner
- [Ext] setSellFactor #
 - modifiers: onlyOwner
- [Ext] setSwapAtAmount #
 - modifiers: onlyOwner
- [Pub] changeMinimumHoldingLimit #
 - modifiers: onlyOwner
- [Pub] excludeMultipleAccountsFromFees #
 - modifiers: onlyOwner
- [Ext] changeMarketingWallet #
 - modifiers: onlyOwner
- [Pub] setAutomatedMarketMakerPair #
 - modifiers: onlyOwner
- [Prv] _setAutomatedMarketMakerPair #
- [Prv] sendETHToWallets #
- [Pub] updateLiquidityWallet #
 - modifiers: onlyOwner
- [Pub] updateGasForProcessing #
 - modifiers: onlyOwner
- [Ext] blacklistAddress #
 - modifiers: onlyOwner
- [Ext] unBlockAddress #
 - modifiers: onlyOwner
- [Ext] updateClaimWait #
 - modifiers: onlyOwner
- [Ext] getClaimWait
- [Pub] minimumLimitForDividend
- [Ext] getTotalDividendsDistributed
- [Pub] isExcludedFromFees
- [Pub] isExcludedFromDividends
- [Pub] withdrawableDividendOf
- [Pub] dividendTokenBalanceOf
- [Ext] getAccountDividendsInfo
- [Ext] getAccountDividendsInfoAtIndex
- [Ext] processDividendTracker #
- [Ext] claim #
- [Ext] getLastProcessedIndex
- [Ext] getNumberOfDividendTokenHolders
- [Int] _transfer #

- [Prv] swapAndLiquify #
- [Prv] swapTokensForEth #
- [Prv] addLiquidity #
- [Prv] swapAndSendDividends #

- + CTTDividendTracker (DividendPayingToken)
 - [Pub] <Constructor> #
 - modifiers: DividendPayingToken
 - [Ext] setMinimumTokenBalanceForDividends #
 - modifiers: onlyOwner
 - [Int] _transfer #
 - [Pub] withdrawDividend #
 - [Ext] excludeFromDividends #
 - modifiers: onlyOwner
 - [Ext] updateClaimWait #
 - modifiers: onlyOwner
 - [Ext] getLastProcessedIndex
 - [Pub] minimumTokenLimit
 - [Ext] getNumberOfTokenHolders
 - [Pub] getAccount
 - [Pub] getAccountAtIndex
 - [Prv] canAutoClaim
 - [Ext] setBalance #
 - modifiers: onlyOwner
 - [Pub] process #
 - [Pub] processAccount #
 - modifiers: onlyOwner

(\$) = 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. | Low issues |
| 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

1. Out of gas

Issue:

- The function `excludeMultipleAccountsFromFees()` uses the loop to exclude multiple accounts from fees. Function will be aborted with `OUT_OF_GAS` exception if there will be a long addresses list.

Recommendation:

Check that the array length is not too big.

Notes:

- Dividend tracker may be changed. So that logic of `setBalance` and other functions could be another and not audited.

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

- Owner can change dividend tracker.
- Owner can change Uniswap router address.
- Owner can change pauseSell & pauseBuy statuses.
- Owner can exclude from the fees.
- Owner can exclude from the dividends.
- Owner can change sellFeelIncreaseFactor.
- Owner can change swapTokensAtAmount.
- Owner can change minimum token balance for dividends.
- Owner can change marketing and liquidity wallets.
- Owner can exclude and include addresses in automatedMarketMakerPairs array.
- Owner can change gas for processing.
- Owner can blacklist addresses.
- Owner can update claimWait value.

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope. The further transfers and operations with the funds raise are not related to this particular contract.

Liquidity locking details are provided by the team:

<https://www.team.finance/view-coin/0xEA18370F4568C1b7cb59246Bb94C5bf0d5015Cf5?name=Crypto%20Titan%20Token&symbol=TITN>

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.