



TechRate
AUDIT COMPANY

Smart Contract Security Audit

Audit Details



Audited project

XRPAPE



Deployer address

0xA5898a9Bf9248c8AD912B0c6Cf645afe33dc5e2b



Client contacts:

XRPAPE team



Blockchain

Binance Smart Chain



Project website:

<https://xrpapes.club/>

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 XRPAPE to perform an audit of smart contracts:

<https://bscscan.com/address/0x87c91dd4552c67a4b82f8008fa08458ca5e62008#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 11.08.2021

Contract name	XRPAPE
Contract address	0x87c91Dd4552c67a4B82F8008Fa08458ca5E62008
Total supply	100,000,000,000,000
Token ticker	XRPAPE
Decimals	18
Token holders	973
Transactions count	25,926
Top 100 holders dominance	93.88%
XRP	0x1d2f0da169ceb9fc7b3144628db156f3f6c60dbe
Total fees	15
XRP rewards fee	7
Uniswap V2 pair	0xc5bfb813872337b34456638755b7a39d10523722
Contract deployer address	0xA5898a9Bf9248c8AD912B0c6Cf645afe33dc5e2b
Contract's current owner address	0xA5898a9Bf9248c8AD912B0c6Cf645afe33dc5e2b

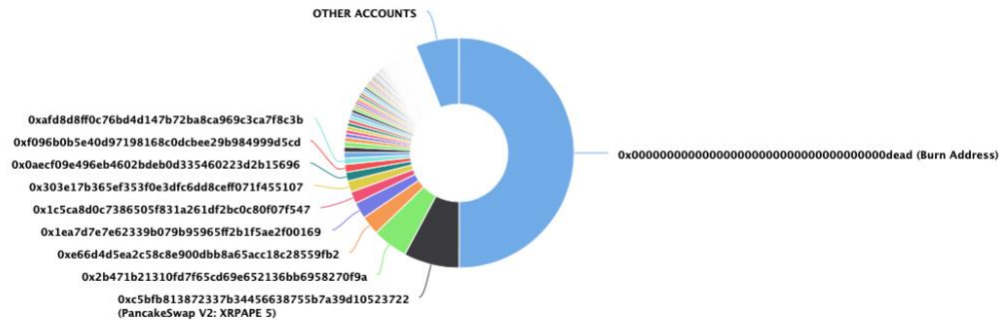
XRPAPE Token Distribution

The top 100 holders collectively own 93.88% (93,880,241,563,446.70 Tokens) of XRP Apes

Token Total Supply: 100,000,000,000.00 Token | Total Token Holders: 973

XRP Apes Top 100 Token Holders

Source: BscScan.com



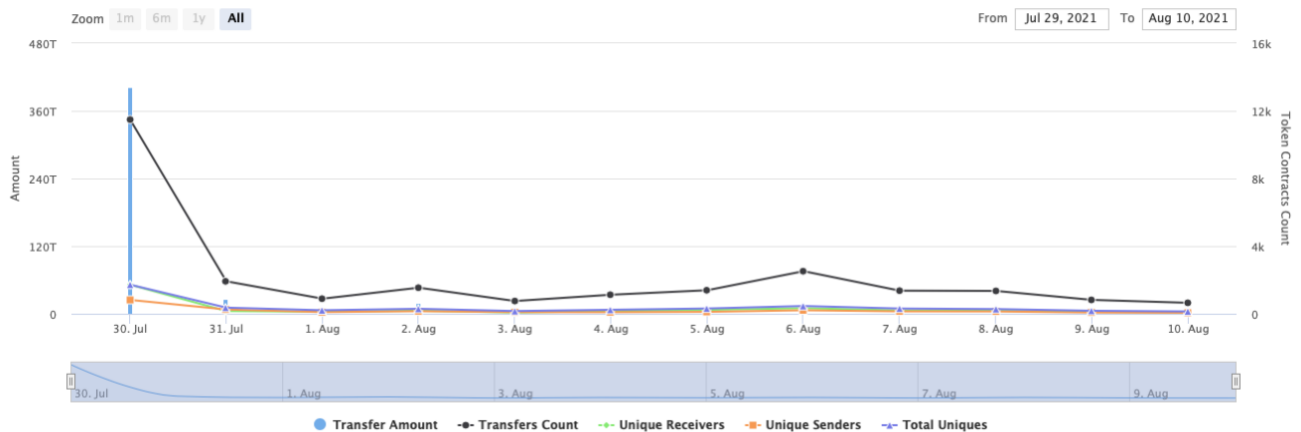
(A total of 93,880,241,563,446.70 tokens held by the top 100 accounts from the total supply of 100,000,000,000.00 token)

XRPAPE Contract Interaction Details


Time Series: Token Contract Overview

Fri 30, Jul 2021 - Tue 10, Aug 2021

Token Contract 0x87c91dd4552c67a4b82f8008fa08458ca5e62008 (XRP Apes)
Source: BscScan.com



XRPAPE Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	Burn Address	50,000,000,000,000	50.0000%
2	 PancakeSwap V2: XRPAPE 5	7,822,682,101,627.555135637476326114	7.8227%
3	0x2b471b21310fd7f65cd69e652136bb6958270f9a	5,000,000,000,000	5.0000%
4	0xe66d4d5ea2c58c8e900dbb8a65acc18c28559fb2	2,683,383,022,050.349367706677965757	2.6834%
5	0x1ea7d7e7e62339b079b95965ff2b1f5ae2f00169	2,283,994,037,467.384898717791215765	2.2840%
6	0x1c5ca8d0c7386505f831a261df2bc0c80f07f547	1,676,056,908,449.999949079047569417	1.6761%
7	0x303e17b365ef353f0e3dfc6dd8ceff071f455107	1,598,722,343,471.14440768876954101	1.5987%
8	0x0aef09e496eb4602bdeb0d335460223d2b15696	1,238,766,601,359.43775223663995094	1.2388%
9	0xf096b0b5e40d97198168c0dcbee29b984999d5cd	1,099,351,199,083.302486429005061383	1.0994%
10	0xafd8d8ff0c75bd4d147b72ba8ca969c3ca7f8c3b	873,891,080,829.551188169814408318	0.8739%



Contract functions details

+ Context

- [Int] _msgSender
- [Int] _msgData

+ [Lib] SafeMath

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

+ [Lib] SafeMathInt

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

+ [Lib] SafeMathUint

- [Int] toInt256Safe

+ Ownable (Context)

- [Pub] <Constructor> #
- [Pub] owner
- [Pub] renounceOwnership #
 - modifiers: onlyOwner
- [Pub] transferOwnership #
 - modifiers: onlyOwner

+ [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] 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] IUniswapV2Factory

- [Ext] feeTo
- [Ext] feeToSetter
- [Ext] getPair
- [Ext] allPairs
- [Ext] allPairsLength
- [Ext] createPair #
- [Ext] setFeeTo #
- [Ext] setFeeToSetter #

+ [Lib] IterableMapping

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

- [Pub] remove #
- + [Int] IERC20
 - [Ext] totalSupply
 - [Ext] balanceOf
 - [Ext] transfer #
 - [Ext] allowance
 - [Ext] approve #
 - [Ext] transferFrom #
- + [Int] IERC20Metadata (IERC20)
 - [Ext] name
 - [Ext] symbol
 - [Ext] decimals
- + ERC20 (Context, IERC20, IERC20Metadata)
 - [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] DividendPayingTokenInterface
 - [Ext] dividendOf
 - [Ext] withdrawDividend #
- + [Int] DividendPayingTokenOptionalInterface
 - [Ext] withdrawableDividendOf
 - [Ext] withdrawnDividendOf
 - [Ext] accumulativeDividendOf
- + DividendPayingToken (ERC20, Ownable, DividendPayingTokenInterface, DividendPayingTokenOptionalInterface)
 - [Pub] <Constructor> #
 - modifiers: ERC20
 - [Pub] distributeXRPDividends #
 - modifiers: onlyOwner
 - [Pub] withdrawDividend #
 - [Int] _withdrawDividendOfUser #
 - [Pub] dividendOf
 - [Pub] withdrawableDividendOf
 - [Pub] withdrawnDividendOf
 - [Pub] accumulativeDividendOf

- [Int] _transfer #
- [Int] _mint #
- [Int] _burn #
- [Int] _setBalance #

+ XRPAPE (ERC20, Ownable)

- [Pub] <Constructor> #
 - modifiers: ERC20
- [Ext] <Fallback> (\$)
- [Pub] updateDividendTracker #
 - modifiers: onlyOwner
- [Pub] updateUniswapV2Router #
 - modifiers: onlyOwner
- [Pub] excludeFromFees #
 - modifiers: onlyOwner
- [Pub] excludeMultipleAccountsFromFees #
 - modifiers: onlyOwner
- [Ext] setMarketingWallet #
 - modifiers: onlyOwner
- [Ext] setXRPRewardsFee #
 - modifiers: onlyOwner
- [Ext] setLiquiditFee #
 - modifiers: onlyOwner
- [Ext] setMarketingFee #
 - modifiers: onlyOwner
- [Pub] setAutomatedMarketMakerPair #
 - modifiers: onlyOwner
- [Ext] blacklistAddress #
 - modifiers: onlyOwner
- [Prv] _setAutomatedMarketMakerPair #
- [Pub] updateGasForProcessing #
 - modifiers: onlyOwner
- [Ext] updateClaimWait #
 - modifiers: onlyOwner
- [Ext] getClaimWait
- [Ext] getTotalDividendsDistributed
- [Pub] isExcludedFromFees
- [Pub] withdrawableDividendOf
- [Pub] dividendTokenBalanceOf
- [Ext] excludeFromDividends #
 - modifiers: onlyOwner
- [Ext] getAccountDividendsInfo
- [Ext] getAccountDividendsInfoAtIndex
- [Ext] processDividendTracker #
- [Ext] claim #
- [Ext] getLastProcessedIndex
- [Ext] getNumberOfDividendTokenHolders
- [Pub] openTrading #
 - modifiers: onlyOwner
- [Int] _transfer #
- [Prv] swapAndSendToFee #
- [Prv] swapAndLiquify #
- [Prv] swapTokensForEth #
- [Prv] swapTokensForXRP #
- [Prv] addLiquidity #

- [Prv] swapAndSendDividends #
- + XRPapesDividendTracker (Ownable, DividendPayingToken)
 - [Pub] <Constructor> #
 - modifiers: DividendPayingToken
 - [Int] _transfer #
 - [Pub] withdrawDividend #
 - [Ext] excludeFromDividends #
 - modifiers: onlyOwner
 - [Ext] updateClaimWait #
 - modifiers: onlyOwner
 - [Ext] getLastProcessedIndex
 - [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.	Low issues
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. Wrong distributeDividends

(Low issue due to dividendTracker is not verified, otherwise it will be high issue)

Issue:

- The function `distributeXRPDividends(uint256 amount)` has public access modifier. So that, anybody can call this function with any amount and put at risk part of the contract logic.

Recommendation:

Change access modifier for this function to avoid whole access to the function.

2. 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:

Be careful about accounts array length.

Notes:

- Owner can change dividend tracker to not audited and some functions may work in different ways.

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

- Owner can change dividend tracker.
- Owner can change Uniswap router address.
- Owner can exclude from the fees.
- Owner can exclude and include addresses in automatedMarketMakerPairs array.
- Owner can change XRP rewards, marketing, liquidity fee.
- Owner can blacklist addresses.
- Owner can open trading.
- Owner can change gas for processing.
- Owner can update claimWait value.
- Owner can change marketing wallet.
- Owner can exclude from dividends.

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 provided by the team:

<https://mudra.website/?certificate=yes&type=0&lp=0xc5bfb813872337b34456638755b7a39d10523722>

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.