



# **Smart Contract Security Audit**

TechRate
June, 2021

## **Audit Details**



**Audited project** 

**Skyrise** 



Deployer address

0x564004927A471B5ae02646Dd4cA7ed9c030eE4FB



**Client contacts:** 

Skyrise team

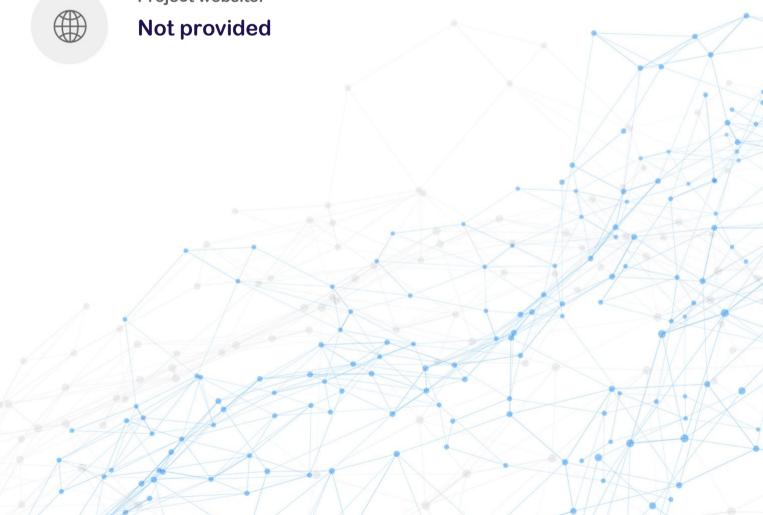


Blockchain

**Binance Smart Chain** 



Project website:



## **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 Skyrise to perform an audit of smart contracts:

https://bscscan.com/address/0xb53dd84cf6f48eac2b5e223bf17035 2e8412ba72#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.

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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.

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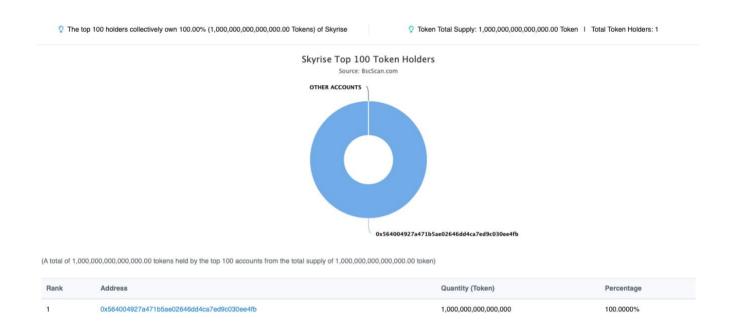
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# **Contracts Details**

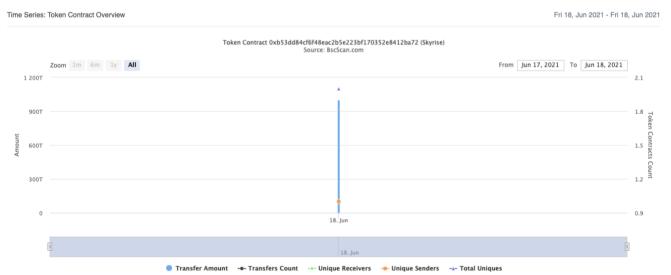
### Token contract details for 21.06.2021

Contract name	Skyrise
Contract address	0xB53DD84cF6F48eAc2b5E223Bf170352E8412BA72
Total supply	1,000,000,000,000
Token ticker	SKY
Decimals	9
Token holders	1
Transactions count	1
Top 100 holders dominance	100.00%
Liquidity fee	9
Tax fee	2
Total fees	0
Uniswap V2 pair	0xe08907fe92a8c100a0e1ab53cf29a86f627d9d28
Contract deployer address	0x564004927A471B5ae02646Dd4cA7ed9c030eE4FB
Contract's current owner address	0x564004927a471b5ae02646dd4ca7ed9c030ee4fb

# **Skyrise Token Distribution**



# **Skyrise Contract Interaction Details**



# **Skyrise Top 10 Token Holders**

Rank	Address	Quantity (Token)	Percentage
1	0x564004927a471b5ae02646dd4ca7ed9c030ee4fb	1,000,000,000,000,000	100.0000%



## **Contract functions details**

#### + Context - [Int] \_msgSender - [Int] msgData + [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 + [Lib] Address - [Int] isContract - [Int] sendValue # - [Int] functionCall # - [Int] functionCall # - [Int] functionCallWithValue # - [Int] functionCallWithValue # - [Prv] functionCallWithValue # + Ownable (Context) - [Pub] <Constructor> # - [Pub] owner - [Pub] renounceOwnership # - modifiers: onlyOwner - [Pub] transferOwnership # - modifiers: onlyOwner - [Pub] getUnlockTime - [Pub] getTime - [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] 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 #
- + Skyrise (Context, IERC20, Ownable)
  - [Pub] <Constructor>#
  - [Pub] name
  - [Pub] symbol
  - [Pub] decimals
  - [Pub] totalSupply
  - [Pub] balanceOf
  - [Pub] transfer #
  - [Pub] allowance
  - [Pub] approve #
  - [Pub] blacklistAddress #
    - modifiers: onlyOwner
  - [Pub] removeBlacklist #
    - modifiers: onlyOwner
  - [Pub] transferFrom #
  - [Pub] increaseAllowance #
  - [Pub] decreaseAllowance #
  - [Pub] isExcludedFromReward
  - [Pub] totalFees
  - [Pub] minimumTokensBeforeSwapAmount
  - [Pub] buyBackUpperLimitAmount
  - [Pub] deliver #
  - [Pub] reflectionFromToken
  - [Pub] tokenFromReflection
  - [Pub] excludeFromReward #
    - modifiers: onlyOwner
  - [Ext] includeInReward #
    - modifiers: onlyOwner
  - [Prv] \_approve #
  - [Prv] transfer #
  - [Prv] swapTokens #
    - modifiers: lockTheSwap
  - [Prv] buyBackTokens #
  - modifiers: lockTheSwap
  - [Prv] swapTokensForEth #
  - [Prv] swapETHForTokens #
  - [Prv] addLiquidity #
  - [Prv] \_tokenTransfer #
  - [Prv] \_transferStandard #
  - [Prv] transferToExcluded #
  - [Prv] \_transferFromExcluded #
  - [Prv] \_transferBothExcluded #
  - [Prv] \_reflectFee #
  - [Prv] \_getValues
  - [Prv] \_getTValues
  - [Prv] getRValues
  - [Prv] \_getRate
  - [Prv] \_getCurrentSupply
  - [Prv] \_takeLiquidity #
  - [Prv] calculateTaxFee
  - [Prv] calculateLiquidityFee

```
- [Prv] removeAllFee #
- [Prv] restoreAllFee #
- [Pub] isExcludedFromFee
- [Pub] excludeFromFee #
 - modifiers: onlyOwner
- [Pub] includeInFee #
 - modifiers: onlyOwner
- [Ext] setTaxFeePercent #
 - modifiers: onlyOwner
- [Ext] setLiquidityFeePercent #
 - modifiers: onlyOwner
- [Ext] setMaxTxAmount #
 - modifiers: onlyOwner
- [Ext] setMarketingDivisor #
 - modifiers: onlyOwner
- [Ext] setNumTokensSellToAddToLiquidity #
 - modifiers: onlyOwner
- [Ext] setBuybackUpperLimit #
 - modifiers: onlyOwner
- [Ext] setMarketingAddress #
 - modifiers: onlyOwner
- [Pub] setSwapAndLiquifyEnabled #
 - modifiers: onlvOwner
- [Pub] setBuyBackEnabled #
 - modifiers: onlyOwner
- [Ext] prepareForPreSale #
 - modifiers: onlyOwner
- [Ext] afterPreSale #
```

(\$) = payable function # = non-constant function

- [Ext] <Fallback> (\$)

- modifiers: onlyOwner

- [Prv] transferToAddressETH #

# **Issues Checking Status**

Issue description	Checking status
1. Compiler errors.	Passed
2. Race conditions and Reentrancy. Cross-function conditions.	race 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 an usage.	d 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 includeInReward() uses the loop to find and remove addresses from the \_excluded list. Function will be aborted with OUT\_OF\_GAS exception if there will be a long excluded addresses list.

```
function includeInReward(address account1) external onlyOwner() {
    require(_isExcluded[account1], "Account is already excluded");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] == account1) {
            excluded[i] = [excluded.length - 1];
            tOwned[account1] = 0;
            isExcluded[account1] = false;
            excluded.pop();
            break;
    }
}</pre>
```

 The function \_getCurrentSupply also uses the loop for evaluating total supply. It also could be aborted with OUT\_OF\_GAS exception if there will be a long excluded addresses list.

#### Recommendation:

Check that the excluded array length is not too big.

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

Owner can change tax and liquidity fees.

```
ftrace | function setTaxFeePercent(uint256 taxFee1) external onlyOwner() {
    _taxFee = taxFee1;
}

ftrace | funcSig
function setLiquidityFeePercent(uint256 liquidityFee1) external onlyOwner() {
    _liquidityFee = liquidityFee1;
}
```

Owner can change maximum transaction amount.

Owner can exclude from the fee.

```
function excludeFromFee(address account1) public onlyOwner {
    _isExcludedFromFee[account1] = true;
}
```

Owner can change marketingDivisor.

```
ftrace|funcSig
function setMarketingDivisor(uint256 divisor↑) external onlyOwner() {
    marketingDivisor = divisor↑;
}
```

Owner can change minimum number of tokens to add to liquidity.

```
ftrace|funcSig
function setNumTokensSellToAddToLiquidity(uint256 _minimumTokensBeforeSwap1) external onlyOwner() {
    minimumTokensBeforeSwap = _minimumTokensBeforeSwap1;
}
```

Owner can change buyBackUpperLimit.

```
ftrace|funcSig
function setBuybackUpperLimit(uint256 buyBackLimit ) external onlyOwner() {
   buyBackUpperLimit = buyBackLimit * 10**18;
}
```

Owner can change marketing address.

```
ftrace|funcSig
function setMarketingAddress(address _marketingAddress1) external onlyOwner() {
    marketingAddress = payable(_marketingAddress1);
}
```

Owner can enable and disable buyBack.

```
ftrace|funcSig
function setBuyBackEnabled(bool _enabled ) public onlyOwner {
   buyBackEnabled = _enabled ;
   emit BuyBackEnabledUpdated(_enabled );
}
```

Owner can enable before and after presale modes.

```
ftrace|funcSig
function prepareForPreSale() external onlyOwner {
    setSwapAndLiquifyEnabled(false);
    LaxFee = 0;
    LiquidityFee = 0;
    maxTxAmount = 10000000000 * 10**6 * 10**9;
}

ftrace|funcSig
function afterPreSale() external onlyOwner {
    setSwapAndLiquifyEnabled(true);
    LaxFee = 2;
    liquidityFee = 9;
    maxTxAmount = 3000000 * 10**6 * 10**9;
}
```

 Owner can lock and unlock. By the way, using these functions the owner could retake privileges even after the ownership was renounced.

```
//Locks the contract for owner for the amount of time provided
function lock(uint256 time) public virtual onlyOwner {
    _previousOwner = _owner;
    _owner = address(0);
    _lockTime = now + time;
    emit OwnershipTransferred(_owner, address(0));
}

//Unlocks the contract for owner when _lockTime is exceeds
function unlock() public virtual {
    require(_previousOwner == msg.sender, "You don't have permission to unlock");
    require(now > _lockTime , "Contract is locked until 7 days");
    emit OwnershipTransferred(_owner, _previousOwner);
    _owner = _previousOwner;
}
```

Owner can blacklist and unblacklist addresses.

```
ftrace|funcSig
function blacklistAddress(address account ) public onlyOwner(){
require(!_isBlacklisted[account ], "Account is already blacklisted");
require(account != owner(), "Owner cannot be blacklisted");

isBlacklisted[account ] = true;
blacklisted.push(account );
}

ftrace|funcSig
function removeBlacklist(address account ) public onlyOwner() {
    require(_isBlacklisted[account ], "Account is not blacklisted");
    for (uint 256 i = 0; i < blacklisted.length; i++) {
        if (blacklisted[i] == account ) {
            blacklisted[i] = blacklisted[blacklisted.length - 1];
            isBlacklisted[account ] = false;
            blacklisted.pop();
            break;
        }
    }
}</pre>
```

## Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope. One third of the liquidity goes to marketing address.

Liquidity locking details NOT provided by the team.

#### 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.

