soken

# SMART CONTRACT SECURITY AUDIT

## Glasshouse

September, 2021

Website: soken.io

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# Disclaimer

This is a comprehensive report based on our automated and manual examination of cybersecurity vulnerabilities and framework flaws. We took into consideration smart contract based algorithms, as well. Reading the full analysis report is essential to build your understanding of project's security level. It is crucial to take note, though we have done our best to perform this analysis and report, that you should not rely on the our research and cannot claim what it states or how we created it. Before making any judgments, you have to conduct your own independent research. We will discuss this in more depth in the following disclaimer - please read it fully.

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Security analysis is based only on the smart contracts. No applications or operations were reviewed for security. No product code has been reviewed.

# Procedure

## Our analysis contains following steps:

1. Project Analysis;

2. Manual analysis of smart contracts:
- Deploying smart contracts on any of the network(Ropsten/Rinkeby) using Remix IDE
- Hashes of all transaction will be recorded
- Behaviour of functions and gas consumption is noted, as well.

3. Unit Testing:
- Smart contract functions will be unit tested on multiple parameters and under multiple conditions to ensure that all paths of functions are functioning as intended.
- In this phase intended behaviour of smart contract is verified.
- In this phase, we would also ensure that smart contract functions are not consuming unnecessary gas.
- Gas limits of functions will be verified in this stage.

4. Automated Testing:
- Mythril
- Oyente
- Manticore
- Solgraph

# Terminology

**We categorize the finding into 4 categories based on their vulnerability:**

- Low-severity issue — less important, must be analyzed
- Medium-severity issue — important, needs to be analyzed and fixed
- High-severity issue —important, might cause vulnerabilities, must be analyzed and fixed
- Critical-severity issue —serious bug causes, must be analyzed and fixed.

# Limitations

The security audit of Smart Contract cannot cover all vulnerabilities. Even if no vulnerabilities are detected in the audit, there is no guarantee that future smart contracts are safe. Smart contracts are in most cases safeguarded against specific sorts of attacks. In order to find as many flaws as possible, we carried out a comprehensive smart contract audit. Audit is a document that is not legally binding and guarantees nothing.

# Token Contract Details for 20.09.2021

Contract Name: **Metacrypt_B_TR_TAX_NC_X**

Deployed address: **0x4025646f4677560dea86bf273ac00c1b309c2c55**

Total Supply: **100,000,000**

Token Tracker: **GLASS**

Decimals: **18**

Token holders: **1**

Transactions count: **1**

Top 100 holders dominance: **100%**

# Audit Details

Project Name: **Glasshouse**

Language: **Solidity**

Blockchain: **BSC**

Project Website: **glasshouse.link**

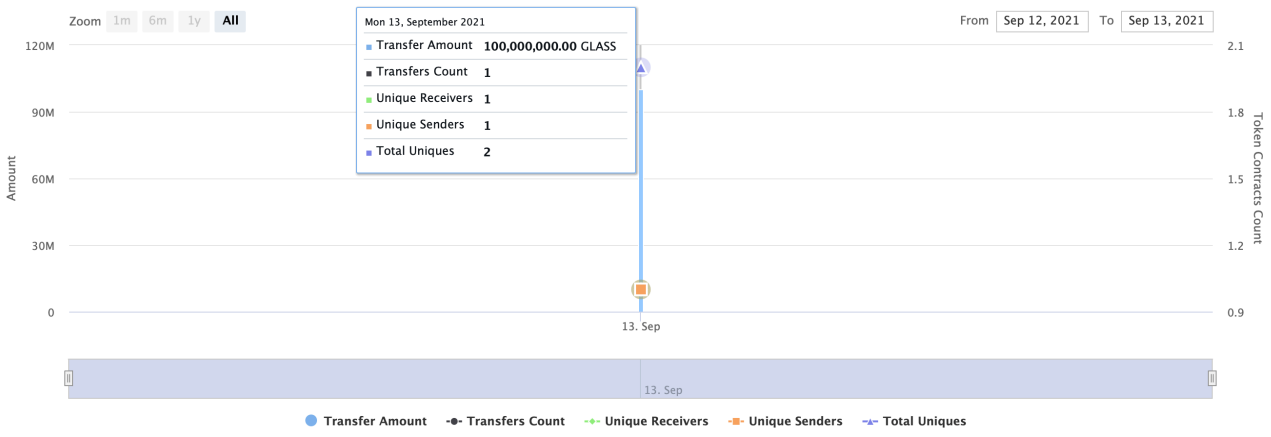
# Social Profiles

Project Website: **glasshouse.link**

Project Twitter: **@glasshouselink**

Project Telegram: **@glasshousetoken**

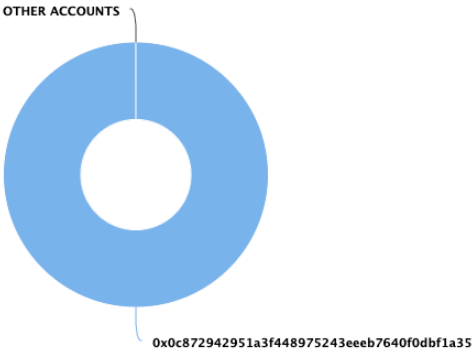
# Token Contract Overview




# KYC Passed

CEO of Glasshouse project has passed KYC verification on behalf of Soken team. All personal data received from audited company will remain private until any fraudulent activity will happen.

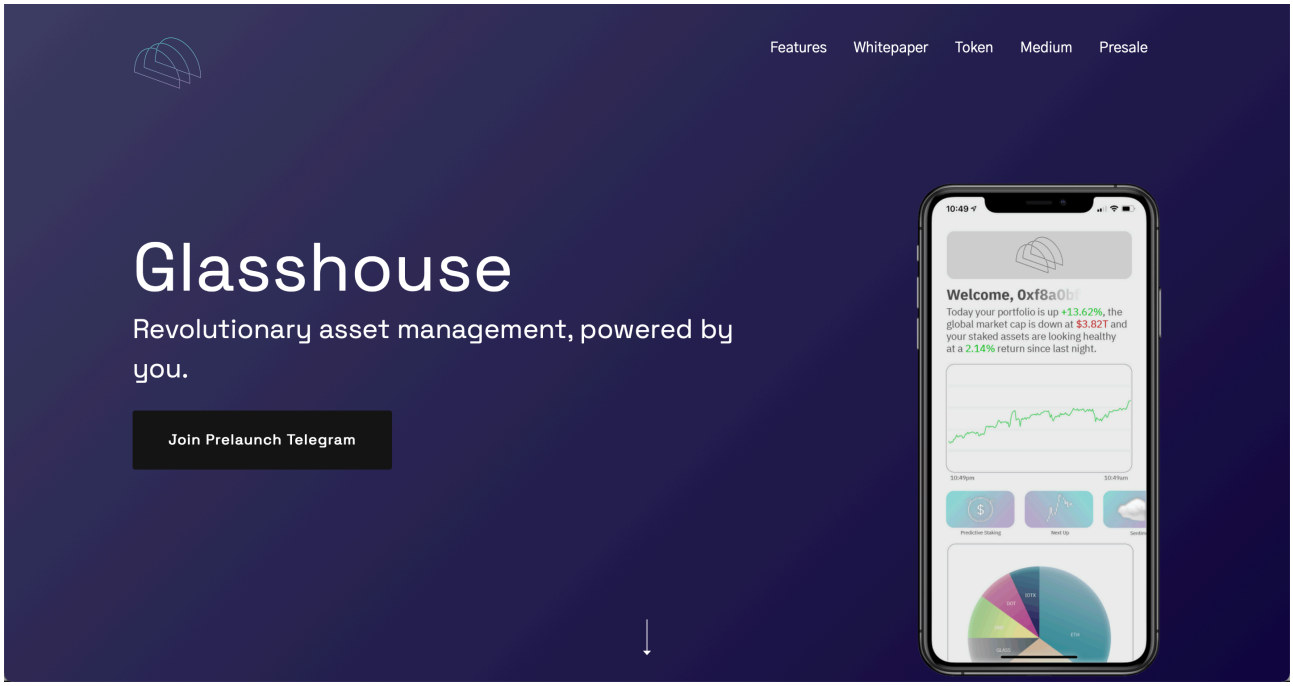
# GLASS Token Distribution




# GLASS Top 10 Holders

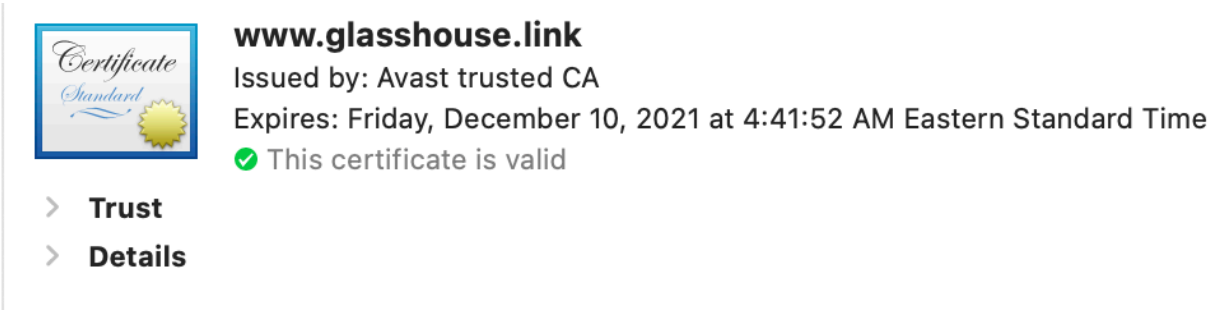
| Rank | Address | Quantity (Token) | Percentage |
|---|---|---|---|
| 1 | 0x0c872942951a3f448975243eeeb7640f0dbf1a35 | 100,000,000 | 100.0000% |

# Project Website Overview




✓ JavaScript errors hasn't been found.
✓ Malware pop-up windows hasn't been detected.
✓ No issues with loading elements, code, or stylesheets.

# Project Website SSL Certification



# Project Website Optimization for Desktop

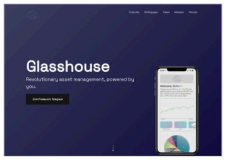
94

https://www.glasshouse.link/

▲ 0–49 ■ 50–89 ● 90–100

**Field Data** — The Chrome User Experience Report does not have sufficient real-world speed data for this page.

**Origin Summary** — The Chrome User Experience Report does not have sufficient real-world speed data for this origin.




**Lab Data** — Metrics are based on lab data collected and analyzed by Lighthouse.

| | | | |
|---|---|---|---|
| ● First Contentful Paint | 0.5 s | ● Time to Interactive | 1.0 s |
| ● Speed Index | 0.7 s | ● Total Blocking Time | 0 ms |
| ■ Largest Contentful Paint | 1.6 s | ● Cumulative Layout Shift | 0 |

# Project Website Optimization for Mobile

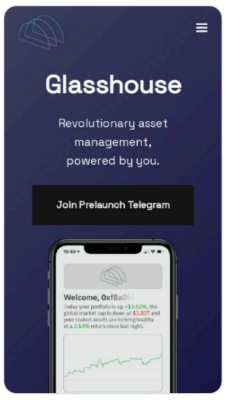
59

https://www.glasshouse.link/

▲ 0–49 ■ 50–89 ● 90–100

**Field Data** — The Chrome User Experience Report does not have sufficient real-world speed data for this page.

**Origin Summary** — The Chrome User Experience Report does not have sufficient real-world speed data for this origin.




**Lab Data** — Metrics are based on lab data collected and analyzed by Lighthouse.

| | | | |
|---|---|---|---|
| ● First Contentful Paint | 1.8 s | ■ Time to Interactive | 4.9 s |
| ● Speed Index | 2.9 s | ■ Total Blocking Time | 390 ms |
| ▲ Largest Contentful Paint | 7.3 s | ■ Cumulative Layout Shift | 0.185 |

# Whitepaper of the project

The whitepaper of Glasshouse project has been verified on behalf of Soken team.

GlassPaper 1.0.2

Last Updated 13/09/2021

**Glasshouse** Whitepaper

In pursuit of financial freedom

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Link: https://uploads-ssl.webflow.com/613736323369a4809bd5a15a/614b0d73120b78eda03f2b0d_Glasshouse%20Whitepaper%201.0.2.pdf

# Contract Function Details

+ MetacryptHelper.sol
- [Pub] createdByMetacrypt
- [Pub] getIdentifier

+ Metacrypt_B_TR_TAX_NC_X.sol
- [Pub] name
- [Pub] symbol
- [Pub] decimals
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer
- [Pub] allowance
- [Pub] approve
- [Pub] transferFrom
- [Pub] increaseAllowance
- [Pub] decreaseAllowance
- [Pub] isExcludedFromReward
- [Pub] deliver
- [Pub] reflectionFromToken
- [Pub] tokenFromReflection
- [Pub] excludeFromReward
- [Pub] includeInReward
- [Pub] excludeFromFee
- [Pub] includeInFee
- [Ext] setAllFeePercent
- [Pub] buyBackUpperLimitAmount
- [Ext] setBuybackUpperLimit
- [Pub] setSwapAndLiquifyEnabled
- [Ext] setFeeWallet
- [Prv] _reflectFee
- [Prv] _getValues
- [Prv] _getTValues
- [Prv] _getRValues
- [Prv] _getRate
- [Prv] _getCurrentSupply
- [Prv] _takeLiquidity
- [Prv] calculateTaxFee
- [Prv] calculateLiquidityFee
- [Prv] removeAllFee
- [Prv] restoreAllFee
- [Pub] isExcludedFromFee
- [Prv] _approve

- [Prv] _transfer
- [Prv] swapAndLiquify
- [Prv] buyBackTokens
- [Prv] swapTokensForBNB
- [Prv] swapBNBForTokens
- [Prv] addLiquidity
- [Prv] _tokenTransfer
- [Prv] _transferStandard
- [Prv] _transferToExcluded
- [Prv] _transferFromExcluded
- [Prv] _transferBothExcluded
- [Prv] _tokenTransferNoFee
- [Pub] recoverToken

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

+ ERC20Ownable.sol (Context)
- [Pub] <Constructor>
- [Pub] owner
    - modifiers: onlyOwner
- [Pub] renounceOwnership
- [Pub] transferOwnership

+ [Lib] SafeMath
- [Int] tryAdd
- [Int] trySub
- [Int] tryMul
- [Int] tryDiv
- [Int] tryMod
- [Int] add
- [Int] sub
- [Int] mul
- [Int] div
- [Int] mod
- [Int] sub
- [Int] div
- [Int] mod

+ [Int] IUniswapV2Factory
- [Ext] feeTo
- [Ext] feeToSetter
- [Ext] getPair
- [Ext] allPairs

- [Ext] allPairsLength
- [Ext] createPair #
- [Ext] setFeeTo #
- [Ext] setFeeToSetter #

+ [Int] IERC20.sol
- [Ext] name
- [Ext] symbol
- [Ext] decimals
- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] allowance #
- [Ext] approve
- [Ext] transfer #
- [Ext] transferFrom #

+ [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

($) = payable function

# Vulnerabilities checking

| Issue Description | Checking Status |
|---|---|
| Compiler Errors | Completed |
| Delays in Data Delivery | Completed |
| Re-entrancy | Completed |
| Transaction-Ordering Dependence | Completed |
| Timestamp Dependence | Completed |
| Shadowing State Variables | Completed |
| DoS with Failed Call | Completed |
| DoS with Block Gas Limit | Completed |
| Outdated Complier Version | Completed |
| Assert Violation | Completed |
| Use of Deprecated Solidity Functions | Completed |
| Integer Overflow and Underflow | Completed |
| Function Default Visibility | Completed |
| Malicious Event Log | Completed |
| Math Accuracy | Completed |
| Design Logic | Completed |
| Fallback Function Security | Completed |
| Cross-function Race Conditions | Completed |
| Safe Zeppelin Module | Completed |

# Security Issues

## 1) Volatile Code:

The return values of functions *swapExactTokensForETHSupportingFeeOnTransferTokens* and *addLiquidityETH* are not properly handled.

## Recommendation:

We recommend using variables to receive the return value of the functions mentioned above and handle both success and failure cases if needed by the business logic.

## 2) Out of Gas issue:

```
function includeInReward(address account) external onlyOwner {
    require(_isExcluded[account], "Already excluded");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] == account) {
            _excluded[i] = _excluded[_excluded.length - 1];
            _tOwned[account] = 0;
            _isExcluded[account] = false;
            _excluded.pop();
            break;
        }
    }
}
```

The function includeInRewards() 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.

## 3) Out of Gas issue:

The function _getCurrentSupply also uses the loop for evaluating total

```
function _getCurrentSupply() private view returns (uint256, uint256) {
    uint256 rSupply = _rTotal;
    uint256 tSupply = _tTotal;
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return (_rTotal, _tTotal);
        rSupply = rSupply.sub(_rOwned[_excluded[i]]);
        tSupply = tSupply.sub(_tOwned[_excluded[i]]);
    }
    if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
    return (rSupply, tSupply);
}
```

supply. It also could be aborted with OUT_OF_GAS exception if there will be a long excluded addresses list.

**Recommendation:**

Use EnumerableSet instead of array or do not use long arrays.

# Conclusion

Low-severity issues exist within smart contracts. Smart contracts are free from any critical or high-severity issues.

NOTE: Please check the disclaimer above and note, that audit makes no statements or warranties on business model, investment attractiveness or code sustainability.