



SMART CONTRACT SECURITY AUDIT

Panther Quant

Scan and check this report
was posted at Soken Github



March, 2022

Website: soken.io

Table of Contents

Table of Contents	2
Disclaimer	3
Procedure	4
Terminology	5
Limitations	5
Audit Details for 30.03.2022	6
Social Profiles	6
Whitepaper Review	7
Contract Function Details	8
Vulnerabilities checking	9
Security Issues	10
Conclusion	11
Soken Contact Info	12

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.

DISCLAIMER: You agree to the terms of this disclaimer by reading this report or any portion thereof. Please stop reading this report and remove and delete any copies of this report that you download and/or print if you do not agree to these conditions. This report is for non-reliability information only and does not represent investment advice. No one shall be entitled to depend on the report or its contents, and Soken and its affiliates shall not be held responsible to you or anyone else, nor shall Soken provide any guarantee or representation to any person with regard to the accuracy or integrity of the report. Without any terms, warranties or other conditions other than as set forth in that exclusion and Soken excludes hereby all representations, warrants, conditions and other terms (including, without limitation, guarantees implied by the law of satisfactory quality, fitness for purposes and the use of reasonable care and skills). The report is provided as "as is" and does not contain any terms and conditions. Except as legally banned, Soken disclaims all responsibility and responsibilities and no claim against Soken is made to any amount or type of loss or damages (without limitation, direct, indirect, special, punitive, consequential or pure economic losses or losses) that may be caused by you or any other person, or any damages or damages, including without limitations (whether innocent or negligent).

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.

Audit Details for 30.03.2022



Project Name: **Panther Quant**

Language: **Solidity**

Compiler Version: **0.5.10**

Blockchain:

Social Profiles

Project Website: **<https://pantherquant.io/>**

Project Twitter: **<https://twitter.com/PantherQuant>**

Project Telegram Group: **<https://telegram.me/pantherquant>**

Project Telegram Chanel: **<https://telegram.me/pantherquantann>**

Project Medium: **<https://pantherquant.medium.com/>**

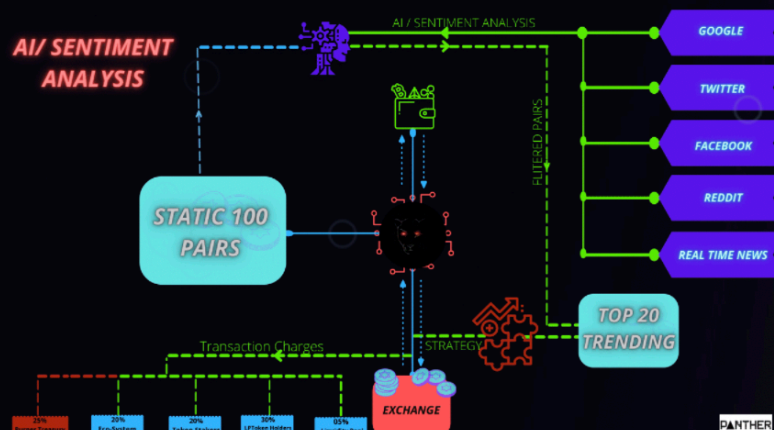
Whitepaper Review

The whitepaper of Panther Quant have been reviewed by Soken Team.

The Protocol Architecture

Panther relies on high-quality AI and ML tools to deliver exceptional-quality research for our users so they never have to use any other tool again when it comes to understanding the market emotions. This is what makes us different from other trading bot platforms. We use real-time news from genuine sources like CoinDesk, Coin Telegraph, The Block, Messari, and all the major news and insights platforms that are used within the industry. We also rely heavily on non-crypto focused platforms like Yahoo News, Financial Times, Bloomberg, and Trading View as well as Social Media platforms like Twitter, Facebook, Reddit and even emoticons that help us get a holistic view of the current market conditions.

A snippet of how trading with AI-based sentiment analysis on Panther Quant would work.



Step 1: Select your trading pairs

You are required to choose the trading pairs of your choice and then add them to the bot. This process is quite straightforward. You can even follow our leaderboard to see which trading pairs are the most popular at that given time. Once finalized, these trading pairs are straight sent to the Panther trading bot. You are required to add your wallet to the bot for easy fund accessibility.

Whitepaper link: <https://pantherquant.io/litepaper>

Contract Function Details

+ Contract Source Code

- [Ext] assureLiquidityRestrictions
- [Ext] assureCanTransfer
- [Pub] balanceOf
- [Pub] transfer
- [Pub] transferFrom
- [Pub] approve
- [Pub] allowance
- [Pub] transferOwnership
- [Pub] acceptOwnership
- [Pub] balanceOf
- [Pub] transfer
- [Pub] transferFrom
- [Pub] approve
- [Pub] allowance
- [Pub] burn
- [Int] _transfer
- [Int] _beforeTokenTransfer
- [Int] _beforeTokenTransfer
- [Ext] setAntisnipeDisable
- [Ext] setLiquidityRestrictorDisable
- [Ext] setAntisnipeAddress
- [Ext] setLiquidityRestrictionAddress
- [Pub] enable_liquidity
- [Pub] claimToken
- [Pub] updateIcoAddress
- [Int] add
- [Int] sub
- [Int] mul
- [Int] div

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 Compiler 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) Third-Party Dependency:

The contract BaseReward.sol is serving as the underlying entity to interact with third parties antisnipe and liquidityRestrictor protocols. The scope of the audit treats 3rd party entities as black boxes and assumes their functional correctness. However, in the real world, 3rd parties can be compromised and this may lead to lost or stolen assets. Moreover, the addresses of these third parties can be updated through functions setAntisnipeAddress() and setLiquidityRestrictionAddress().

```
function setAntisnipeAddress(address addr) external {
    require(msg.sender == owner, 'Access Denied');
    antisnipe = IAntisnipe(addr);
    emit AntisnipeAddressChanged(addr);
}

function setLiquidityRestrictionAddress(address addr) external {
    require(msg.sender == owner, 'Access Denied');
    liquidityRestrictor = ILiquidityRestrictor(addr);
    emit LiquidityRestrictionAddressChanged(addr);
}
```

Recommendation:

We understand that the business logic of BaseReward.sol requires interaction with antisnipe and liquidityRestrictor. We encourage the team to constantly monitor the statuses of 3rd parties to mitigate the side effects when unexpected activities are observed

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.

Soken Contact Info

Website: www.soken.io

Mob: (+1)416-875-4174

32 Britain Street, Toronto, Ontario, Canada

Telegram: @team_soken

GitHub: sokenteam

Twitter: @soken_team

