



SMART CONTRACT SECURITY AUDIT

NeoNomad Finance Solana Bridge

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was posted at Soken Github



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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 network
 - Behaviour of functions and gas consumption is noted.
 - Check common security issues:
 - Missing ownership checks
 - Missing signer checks
 - Signed invocation of unverified programs
 - Solana account confusions o Arithmetic over- or underflows
 - Numerical precision errors
 - Loss of precision in calculation
 - Insufficient SPL-Token account verification
 - Missing rent exemption assertion
 - Casting truncation
 - Did not follow security best practices
 - Outdated dependencies
 - Redundant code
 - Unsafe Rust code
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.

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



Project Name: **NeoNomad Finance**

Contract Name: **lib.rs**

Language: **Rust**

Compiler Version: **v0.8.0**

Social Profiles

Project Website: <https://www.neonomad.finance/>

Project Telegram: <https://t.me/neonomadfinance>

Project Twitter: <https://twitter.com/NeonomadFinance>

Project Medium: <https://medium.com/@NeoNomadFinance>

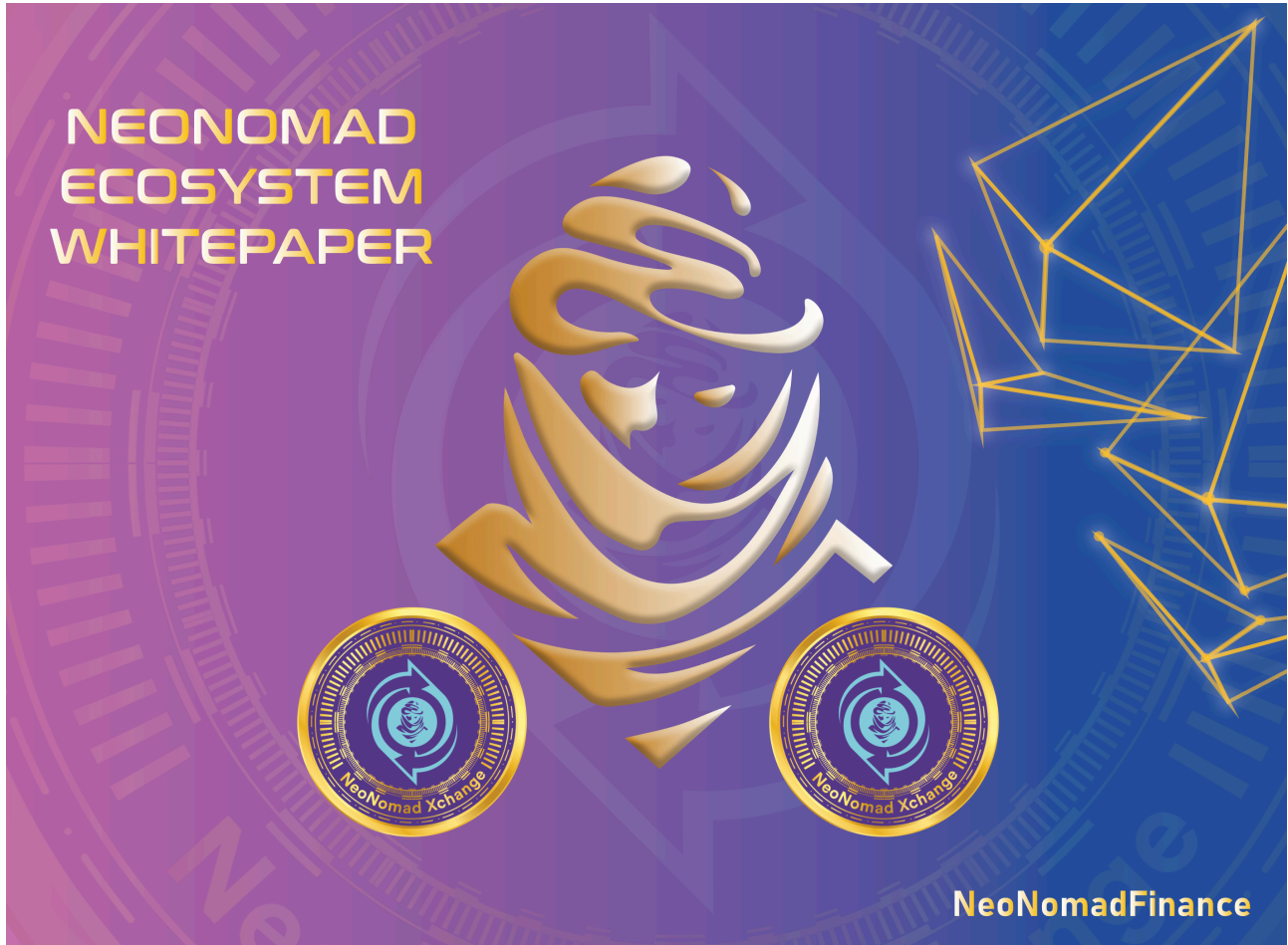
Project Discord: <https://discord.com/invite/Fj77EYcTNH>

About the project

NeoNomad is one of the first decentralized ecosystems to bridge the gap between traditional finance, real world-assets, and DeFi on Solana. It is an all-inclusive, integrated ecosystem, providing diverse DeFi services and tools under one roof. Some of these services include a DEX, integrated payments services, and asset-backed NFTs. On the DEX, NeoNomad provides lending, yield farming, and staking, among other services.

Whitepaper Review

NeoNomad Finance Whitepaper has been reviewed on behalf of Soken Team.



Whitepaper link: <https://docs.neonomad.finance/nni/tokenomics-fundamentals/whitepaper>

Docs: <https://docs.neonomad.finance/nni/>

Audit Scope

spl-bridge-gotbit-main/

programs /

neonomad-bridge/

Cargo.toml

src/

Xargo.toml

lib.rs

Contract Function Details

+ lib.rs

- initialize
- add_signer
- remove_signer
- dispense
- collect
- clear_lock
- update_lock
- is_correct_signer_manager
- is_correct_deployer
- is_correct_fee_receiver
- is_correct_signer
- is_correct_settings_account
- into_transfer
- into_token_ownership_transfer
- into_user_transfer
- into_fee_transfer
- into_transfer

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) Use of Unaudited Framework - Medium

The implementation used **Anchor** developed by **serum**. However Anchor was not audited and it even had the following statement:

- **This code is unaudited. Use at your own risk.**

Recommendation:

Consider watching the latest updates about **Anchor** especially any bug fix and doing contract upgrade accordingly.

2) Contract Upgradeable - Medium

In Solana, a contract can be upgraded unless its upgradeability is turned off when it is deployed or upgraded. Therefore users need to trust the NeoNomad team's design and operation. And the NeoNomad team needs to keep the private keys safe and secure.

Recommendation:

Consider keeping the private keys safe and secure.

Conclusion

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.

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