OFFSIDE LABS

Kamino Lending Emergency Council

Smart Contract Security Assessment

February 2026

Prepared for:

Kamino

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1 About Offside Labs

Offside Labs is a leading security research team, composed of top talented hackers from both academia and industry.

We possess a wide range of expertise in modern software systems, including, but not limited to, *browsers*, *operating systems*, *IoT devices*, and *hypervisors*. We are also at the forefront of innovative areas like *cryptocurrencies* and *blockchain technologies*. Among our notable accomplishments are remote jailbreaks of devices such as the **iPhone** and **PlayStation 4**, and addressing critical vulnerabilities in the **Tron Network**.

Our team actively engages with and contributes to the security community. Having won and also co-organized *DEFCON CTF*, the most famous CTF competition in the Web2 era, we also triumphed in the **Paradigm CTF 2023** within the Web3 space. In addition, our efforts in responsibly disclosing numerous vulnerabilities to leading tech companies, such as *Apple*, *Google*, and *Microsoft*, have protected digital assets valued at over **$300 million**.

In the transition towards Web3, Offside Labs has achieved remarkable success. We have earned over **$9 million** in bug bounties, and **three** of our innovative techniques were recognized among the **top 10 blockchain hacking techniques of 2022** by the Web3 security community.

 **https://offside.io/**

 **https://github.com/offsidelabs**

 **https://twitter.com/offside_labs**

2 Executive Summary

Introduction

Offside Labs completed a security audit of *Kamino Lending* smart contracts, starting on January 10th, 2026, and concluding on January 11th, 2026.

Project Overview

Kamino Lending is a decentralized lending protocol operating on the Solana blockchain.

The protocol utilizes a novel peer-to-pool model designed to facilitate borrowing and lending while supporting automated leveraged strategies such as Multiply and Long/Short positions.

Key technical characteristics include capital-efficient liquidity mechanisms and a risk management system intended to protect both lenders and borrowers. The protocol also functions as a standalone money market, allowing users to deposit and borrow assets without engaging in leveraged strategies.

Audit Scope

The assessment scope contains mainly the smart contracts of the klend program for the *Kamino Lending* project.

The audit is based on the following specific branches and commit hashes of the codebase repositories:

- Kamino Lending:
  - Codebase: PR-696
  - Commit Hash: 43fe383317de6d2930b7e2659b124b17bc2eec46

We listed the files we have audited below:

- Kamino Lending:
  - programs/klend/src/handlers/handler_mark_obligation_for_deleveraging.rs
  - programs/klend/src/handlers/handler_socialize_loss.rs
  - programs/klend/src/handlers/handler_update_lending_market.rs
  - programs/klend/src/handlers/handler_update_reserve_config.rs
  - programs/klend/src/lending_market/lending_operations.rs
  - programs/klend/src/state/lending_market.rs
  - programs/klend/src/state/liquidation_operations.rs
  - programs/klend/src/state/mod.rs
  - programs/klend/src/state/obligation.rs
  - programs/klend/src/state/reserve.rs
  - programs/klend/src/utils/mod.rs

Findings

The security audit revealed:

- 0 critical issue
- 0 high issue
- 0 medium issue
- 0 low issue
- 1 informational issue

Further details, including the nature of these issues and recommendations for their remediation, are detailed in the subsequent sections of this report.

3 Summary of Findings

ID	Title	Severity	Status
01	Residual "RISK COUNCIL" Keyword in Comment	Informational	Fixed

4 Key Findings and Recommendations

4.1 Informational and Undetermined Issues

Residual “RISK COUNCIL” Keyword in Comment

Severity: Informational	Status: Fixed
Target: Smart Contract	Category: Code QA

A leftover `RISK COUNCIL` keyword remains in a comment.

```
87    // RISK COUNCIL
88    ...
89    pub fn socialize_loss(ctx: Context<SocializeLoss>, liquidity_amount:
        ↪ u64) -> Result<()> {
```

programs/klend/src/lib.rs#L87-L87

5 Disclaimer

This audit report is provided for informational purposes only and is not intended to be used as investment advice. While we strive to thoroughly review and analyze the smart contracts in question, we must clarify that our services do not encompass an exhaustive security examination. Our audit aims to identify potential security vulnerabilities to the best of our ability, but it does not serve as a guarantee that the smart contracts are completely free from security risks.

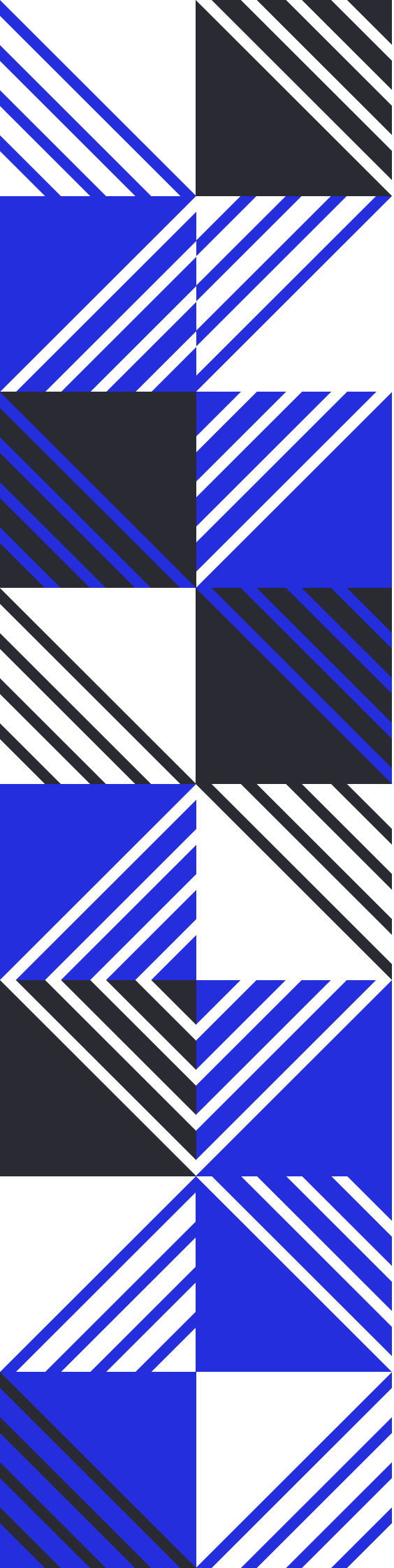
We expressly disclaim any liability for any losses or damages arising from the use of this report or from any security breaches that may occur in the future. We also recommend that our clients engage in multiple independent audits and establish a public bug bounty program as additional measures to bolster the security of their smart contracts.

It is important to note that the scope of our audit is limited to the areas outlined within our engagement and does not include every possible risk or vulnerability. Continuous security practices, including regular audits and monitoring, are essential for maintaining the security of smart contracts over time.

Please note: we are not liable for any security issues stemming from developer errors or misconfigurations at the time of contract deployment; we do not assume responsibility for any centralized governance risks within the project; we are not accountable for any impact on the project's security or availability due to significant damage to the underlying blockchain infrastructure.

By using this report, the client acknowledges the inherent limitations of the audit process and agrees that our firm shall not be held liable for any incidents that may occur subsequent to our engagement.

This report is considered null and void if the report (or any portion thereof) is altered in any manner.



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