

Kapex Labs
SecureBank Lab
Technical Overview
Version 1.0 – March 2026

System Design

SecureBank Lab is built as a modular simulation bundle combining smart contracts, interaction scripts, and structured event logging tools.

The architecture is intentionally transparent to allow students and researchers to observe how financial infrastructure components interact within blockchain environments.

Smart Contract Layer

The smart contract layer provides the on-chain execution environment responsible for custody logic and transaction handling.

Key characteristics:

- Ethereum-compatible smart contracts
- Asset custody simulation
- Multi-asset interaction capability
- Event emission for external monitoring

Event Monitoring Layer

SecureBank Lab includes event listener scripts designed to capture and structure blockchain activity.

The listener system performs:

- Event subscription
- Transaction parsing
- Structured log generation
- Activity traceability

Accounting Export Layer

Captured transaction logs can be exported into structured accounting formats suitable for analysis or educational demonstrations.

Supported formats:

- CSV structured exports
- JSON data exports

Supported Infrastructure

SecureBank Lab is compatible with:

- Ethereum
- Arbitrum One
- Ethereum-compatible local test environments

Supported assets include ETH and ERC-20 tokens.

Deployment Environment

The system can be deployed in multiple environments:

- Local development networks
- Ethereum testnets

- Controlled academic blockchain labs

Documentation

SecureBank Lab includes structured documentation designed for technical instructors and academic lab coordinators.

Documentation covers:

- deployment procedures
- interaction scripts
- event monitoring configuration
- export generation workflows

Typical Academic Use Case

A typical SecureBank Lab deployment within an academic environment follows these steps:

1. Deployment of the custodial smart contract within a controlled blockchain environment.
2. Execution of transaction flows using the provided interaction scripts.
3. Monitoring of emitted events through the event listener system.
4. Export of structured transaction logs for accounting analysis or classroom demonstration.

This workflow allows students and researchers to observe the full lifecycle of blockchain-based financial infrastructure operations..

Effective Date

March 2026

Kapex Labs
Institutional Licensing Department
labs@kapexlabs.xyz

© 2026 Kapex Labs
All Rights Reserved