National Financial Agency Core Ledger Optimization

SECTOR: Financial Services & Banking | TIMELINE: 12 Weeks Deployment | IMPACT: 99.99% SLA & <1.8s S

UPTIME SLA	SYNC WINDOW	COMPLIANCE	CORE STACK
99.1% -> 99.99%	< 1.8 Seconds	SEOJK 29/2022	Go / Kafka

01 // OPERATIONAL BOTTLENECK & EXPOSURE

A national financial institution experienced daily ledger discrepancies caused by overnight cron-batch synchronization lags across regional branch databases. Unreconciled mid-day balances created settlement drift and regulatory audit exposure under OJK financial governance mandates.

02 // SYSTEM ARCHITECTURE TOPOLOGY



INVARIANT: ZERO-DATA-LOSS STREAMING // ENCRYPTED mTLS TRANSPORT // AUDIT VERIFIED

03 // ENGINEERING EXECUTION & DATA PLANE

1. Stateful Go Verification Gateway

Engineered high-concurrency Go ingress services enforcing cryptographic payload signatures, idempotency keys, and strict schema validation before any branch mutation enters the core bus.

2. Quorum-Replicated Apache Kafka Event Stream

Replaced brittle cron jobs with partitioned Kafka topics configured with acks=all and min.insync.replicas, synchronizing accounting logs, CRM records, and branch ledgers continuously in under 1.8 seconds.

3. Immutable SEOJK 29/2022 Audit Trail Sink

Every state transition emits a tamper-evident, hash-chained audit record into an isolated compliance store, satisfying full OJK SEOJK 29/2022 traceability and raising system availability to 99.99%.

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