



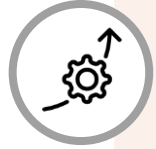
CASE STUDY: Transaction Hub Modernization: From Legacy Infrastructure to Cloud-Native Architecture

PROBLEM STATEMENT: A leading global financial institution, sought to modernize its centralized transaction routing hub. The transaction hub, a critical internal platform, had been running on legacy infrastructure for over a decade. Rising licensing costs, outdated technology, and a growing need for cloud migration and data security catalyzed the initiative to transition from MarkLogic to Azure Cosmos DB.

OBJECTIVES



Cloud Migration: transition the transaction hub to a secure, scalable Azure cloud first architecture



System Improvement: enhance performance, maintainability, and scalability of the internal transaction hub



Improve Security: by eliminating technical debt tied to outdated software



Enable Agile DevOps Practices: with updated tools and test automation



Cost Optimization: reduce high annual licensing cost associated with MarkLogic

PROCESS

Two architects conducted a thorough technical assessment to identify possible migration paths

Selected a phased Extract Transform Load (ELT) based data migration and application refactor approach

Extracted data using MarkLogic Content Pump (MLCP) and cleaned JSON files to remove legacy metadata

Transformed and loaded via Azure Data Factory into Cosmos DB

Replaced MarkLogic dependencies in the application codebase

Aligned application architecture and tests with Cosmos DB APIs

Transitioned all Spring Boot microservices from Java 1.8 to Java 21

SOLUTION

DELIVERED

- + Replaced MarkLogic NoSQL with Azure Cosmos DB, enabling multi-region replication, and improved scalability
- + Legacy metadata and non-essential artifacts stripped during migration, resulting in streamlined, JSON format that enhances maintainability, and supports automation
- + Upgraded all Spring Boot services from Java 1.8 to Java 21, which supports long term releases, improves runtime performance
- + Enhanced DevOps alignment due to re-architected application being CI/CD ready and designed for automated testing. Integration and unit tests re-written to support Cosmos DB, paving the way for agile delivery practices and reducing future deployment risks

IMPACT



\$880K IN ANNUAL COST SAVINGS

Transaction Hub cost reduction from \$1 million/year to less than \$120K across 8 applications



FUTURE-PROOF SCALABILITY

Able to handle 4-5X increase in transaction volume over the next 3 years



FASTER TRANSACTION TIME

Lower latency and improve microservice performance and faster transaction processing



AUTOMATED TESTING FRAMEWORK

CI/CD pipelines embedded into architecture, allows faster iterations and safer deployments



ENHANCED SECURITY & COMPLIANCE

Upgrading to Java 21 and adopting Azure native security features improves compliance with modern cyber security standards and industry regulations