HCSC Case Study

CASE STUDY: Modernizing Data Infrastructure at HCSC through Azure Cosmos DB Adoption

PROBLEM STATEMENT: Health Care Service Corporation (HCSC), a leading health insurance organization needed to replace its legacy in-memory data grid - GemFire, due to rising licensing costs, lack of enterprise support, and misalignment with its digital modernization and cloud first strategy. The system struggled to scale effectively under rising data volumes and evolving application demands, hindering the organization's ability to innovate, respond to market needs, and deliver seamless, real-time services to its members. Their flagship app, processing over a terabyte of claims data, alongside other critical applications, required scalable, resilient, and cloud-native infrastructure to handle increasing data volume and complexity without service disruption.

OBJECTIVES

- **Eliminate** GemFire related licensing costs
- **Enhance** system resilience, fault tolerance and disaster recovery capabilities
- **Establish** scalable, secure, and repeatable data practices aligned with enterprise standards
- **Operationalize** Cosmos DB for use in future projects
- **Improve** the digital landscape and user experience of policy members

SOLUTION

PROCESS

- Developed governance frameworks and best practices
- Built collaborative bridges across security, support, and architecture teams
- Designed sandbox environments to overcome local development limitations
- Conducted resiliency testing and facilitated phased migration
- Developed a reference app ("good code") as a repeatable integration template
- Evolved legacy data retention strategies into automated, TTL-based data lifecycle management
- Conducted phased migrations informed by architectural refactoring and performance tuning

DELIVERED

- + Migrated applications and ETL pipelines from GemFire to Cosmos DB
- + Implemented role-based access and firewall protocols
- + Optimized data models and access patterns to minimize cloud-based runtime costs
- + Retired legacy systems and supported transition to modern, scalable and resilient platforms
- + Improved the web and mobile user experience of policy members
- + Documented and codified best practices for future migrations
- + Created reusable code and pipelines for data ingestion using Azure Databricks and Talend

IMPACT

OPTIMIZED SYSTEM RELIABILITY	Established secure, observable, and scalable data architecture across apps
ENABLED COST SAVINGS	Avoided substantial Gemfire licensing fees
IMPROVED GOVERNANCE & STANDARDIZATION	Accelerated new technology adoption across teams with scalable resilient platforms
INCREASED RESILIENCE	Achieved geo-distributed, cloud-native reliability and failover capabilities.
IMPROVED OPERATIONAL EFFICIENCY	Streamlined data lifecycle through Cosmos DB's native TTL, replacing manual "Fill & Kill" practices.