



PRODUCT BUILD | QA | APPLICATION MODERNIZATION

Major Insurance Company

Simplifying document access while enhancing compliance and scalability

A major US insurance company, serving thousands of policyholders, faced an increasing challenge in managing its vast and complex document ecosystem. With policies evolving over time, files accumulating across multiple departments, and regulatory requirements demanding seamless document

tracking, the company needed a modern, scalable document management system.

They turned to gravity9 for an innovative, future-proof solution that would enhance efficiency, improve compliance, and streamline workflow.



Utilized Technology Stack

Blob Storage: Azure Blob Storage

Metadata Storage: MongoDB Atlas

Framework: Spring

Review of Challenges

Managing an ever-growing repository of policy documents, client files, actuarial data and annotations had become a significant operational burden. The company required a solution that could not only handle hundreds of thousands of documents but also optimize read

and write performance in real time. Additionally, the new system had to integrate seamlessly with existing workflows, ensuring minimal disruption while enabling long-term scalability.

Beyond just storage, the company needed intelligent metadata representation to unify fragmented policy versions, annotations, and document histories. The challenge was twofold: designing an infrastructure that was both powerful and flexible enough to evolve with business needs, while also ensuring a smooth transition from legacy systems without operational downtime.

Our Solution

The team at gravity9 engineered a two-part solution that revolutionized how the company managed its documents. By mapping document metadata to binary files stored in scalable blob storage, we created a system that seamlessly integrated metadata evolution with robust file persistence.

This approach ensured that the present-day representation of documents could be enriched over time—introducing capabilities such as enhanced markup, redaction,

and referential linkage to policies or guidelines. Additionally, storing binary data in blob storage removed file size and structure limitations while significantly accelerating document retrieval and processing times.

To facilitate the transition, we developed an automated migration process that interpreted existing file structures, constructed intelligent metadata, and seamlessly relocated files. This allowed business operations to continue without interruption while ensuring that future document enhancements could be easily layered onto the new system.

“The new Document API delivered a scalable, future-proof solution that enhances efficiency, improves compliance, and simplifies document retrieval.”

Our Approach

Replacing a core document management system in a high-volume insurance environment, where thousands of users continuously update, retrieve, and generate documents is no small task. Recognizing this, gravity9 adopted a phased implementation strategy based on Domain-Driven Design and incremental service deployment.

gravity9 developed a custom "Document API," a centralized component responsible for interpreting files, managing metadata, and retrieving documents from the new system without requiring changes to client applications. This ensured a smooth transition, with existing business logic remaining intact while benefiting from the enhanced document infrastructure.

The migration process began with a small subset of files, validating metadata accuracy and ensuring correct file mapping. Once validated, a synchronized replication process was implemented, allowing both the old and new systems to update simultaneously. This ensured business continuity and enabled a seamless cutover by simply switching to the new service endpoint. Should a rollback be necessary, the process could be reversed without requiring additional data rework.

Subsequent Outcomes

The deployment of the new Document API system delivered transformative results. The company now benefits from a scalable, future-proof document management solution that enhances efficiency, improves compliance, and simplifies document retrieval.

Instead of static file manipulation, the new system leverages a dynamic object model that intelligently maps versioned documents to user experiences. Metadata flexibility ensures that only authorized users access specific document versions, annotations, and policy details.

Furthermore, the generic architecture enables easy adoption by other business units, making the system a foundational component for enterprise-wide document management. With migration optimized, the transition of hundreds of gigabytes of policy data was completed in days, positioning the company for continued digital transformation.

Client Feedback

The success of the solution has extended beyond the insurance processing division. Other business units within the company have recognized the value of the Document API and are exploring its use for tracking file evolution in different domains.

Beyond immediate operational benefits, the company sees this as a stepping stone toward leveraging AI-driven insights. By analyzing patterns in policy documents and annotations, they can improve statistical modelling, reduce manual effort, and unlock new efficiencies.

The flexibility, scalability, and innovation embedded in our approach have empowered the client with a document management system that will continue to evolve, driving long-term business value.

**WE'RE
BUILDING
BETTER
DIGITAL
PRODUCTS**

"Our phased approach and custom Document API enabled a seamless transition, preserving business logic, ensuring continuity, and enabling enterprise adoption."



gravity9