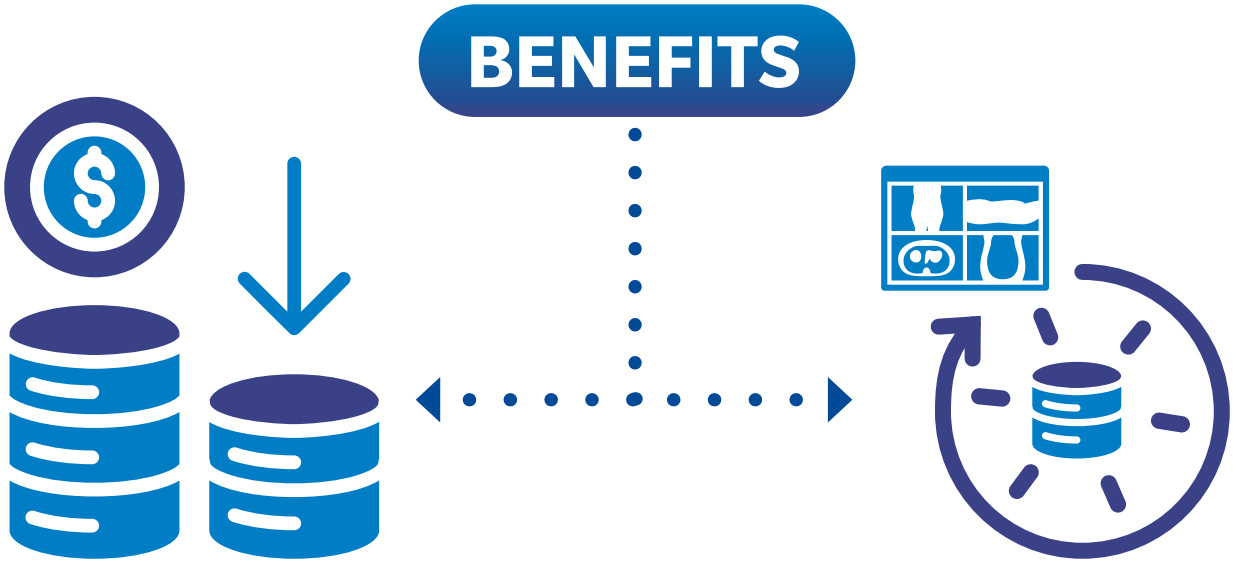
Konica Minolta Improves Radiologist Productivity Using AWS HealthImaging

Overview

Healthcare providers and their software partners face the challenge of processing rapidly increasing imaging volumes that strain on-premises systems. Maintaining servers and other secure infrastructure can be costly and complex, particularly for teleradiologists who need fast, reliable image retrieval at a distance.

Using Amazon Web Services (AWS), Konica Minolta Healthcare (Konica Minolta), an AWS Partner, rebuilt its cloud-based radiology solution, the Exa Platform (Exa), on the storage capabilities of AWS HealthImaging, a HIPAA-eligible service to store and share medical images in the cloud. Now, Konica Minolta's customers can use Exa to store and retrieve medical studies from the cloud with subsecond latency at petabyte scale. They can also retain images long term with intelligent tiering and low-cost storage.



Opportunity — Using HealthImaging for Scalable PACS for Konica Minolta

Konica Minolta's Exa solution combines the functionality of a radiology information system (RIS) and a picture archiving and communication system (PACS). Exa delivers diagnostic image viewing and workflow management through the cloud, helping radiologists securely access studies from any workstation.

Given the size of medical imaging studies, even cloud storage can quickly become costly for providers. Modern mammography studies can reach several gigabytes per case, while a single CT exam can contain 2,500–5,000 individual image slices. Radiologists need to be able to store, transfer, and retrieve these massive files quickly at a sustainable cost.

Konica Minolta saw the opportunity to enhance Exa by integrating with a powerful data storage and access solution designed for medical imaging. That solution was HealthImaging. "AWS HealthImaging gives us the latest in intelligent tiering and automatic lifecycle management so that providers aren't limited in the amount of historical patient data they can afford to keep," says Kevin Chlopecki, COO for Konica Minolta Healthcare. "With the long-term storage on AWS HealthImaging alongside the benefits of an AWS architecture that is resilient, fast, and scalable, we can bring cost-effective, holistic healthcare solutions to providers."

Solution — Delivering Subsecond Latency for Reading Medical Imaging

Using HealthImaging, Konica Minolta delivers subsecond latency so that providers can quickly load and read studies. By combining this low-latency storage with Exa's server-side rendering, radiologists can view images using a web browser, increasing accessibility from a distance. "Radiologists want to be able to read studies fast and take care of their patients quickly," says Chlopecki. "We also want them to be able to focus on patient care and have Konica Minolta take care of streamlining everything else."

With intelligent tiering, Exa automatically moves images between storage classes, keeping long-term data accessible for later diagnoses while minimizing costs. "If a patient needs access to a mammogram from 15 years ago, Exa brings the data back from the depths in short order, and meanwhile, we can store it for pennies on the dollar," says Chlopecki.

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To onboard customers, Konica Minolta developed software that intelligently manages import jobs in digital imaging and communications in medicine (DICOM) format—the international standard for storing and transmitting medical images. With this custom codec, customers can import their PACS data to HealthImaging at 40 transactions per second and petabytes per day. This same codec retrieves data quickly from lower storage tiers. After long-term data has been retrieved, it can be accessed at the same subsecond latency as any other data.

By using a single database for PACS and RIS on HealthImaging, providers can securely store, access, and share their data while eliminating the need for costly replication. Customers can also plug their own HealthImaging environments directly into Exa, integrating existing data stores without migration. Data on HealthImaging is stored in DICOM standard, which means that providers retain full ownership and control of their data and can access that data across other applications and systems without needing to reformat. They can also directly use their data for advanced applications such as multimodal analysis or AI training.

Outcome — Providing scalable, high-speed, and cost-efficient imaging

Exa is the first PACS to be in production using HealthImaging. By building on HealthImaging, Konica Minolta created a cloud PACS and RIS solution that combines speed, scalability, and efficiency. Exa, available through AWS Marketplace, achieves subsecond latency even for large radiology studies and can scale seamlessly to support millions of studies on a single data store. This performance is enhanced by Konica Minolta's compression technology, which decodes medical images twice as fast as other DICOM transfer syntaxes, and by AWS APIs that deliver 5 Gbps speeds, so that users can retrieve images in under 100 ms. Customers also experience up to 60 percent lower storage costs using Exa on HealthImaging.

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Customers are already seeing results. "Since going live with Exa PACS integrated with AWS HealthImaging, we have experienced significant benefits with performance and stability," says Dr. Muzammil Shafi, managing partner at Houston Northwest Radiology Association. "With Exa PACS and HealthImaging, we can read more cases quickly, improving radiologists' productivity. The system is extremely reliable with uptime on a stable platform that will let us grow our business even larger into the future."

Ultimately, Konica Minolta's approach reflects a commitment to supporting healthcare providers of all sizes. "We care about clients, big and small, and we want to help them provide healthcare in cost-effective ways, which we can do using AWS and AWS HealthImaging," says Chlopecki.

Our journey in imaging innovation started **150 years** ago, with a vision to see and do things differently. We innovate for the good of society and the world. That same purpose that kept us moving then, keeps us moving now.

Learn more about **Konica Minolta Healthcare IT solutions** at healthcare.konicaminolta.us

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