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## Benefits

- Low cost, web-scale storage with virtually unlimited capacity for medical images
  - Simplified management of storage infrastructure and operation
  - Always-on availability for secure access and exchange of clinical data
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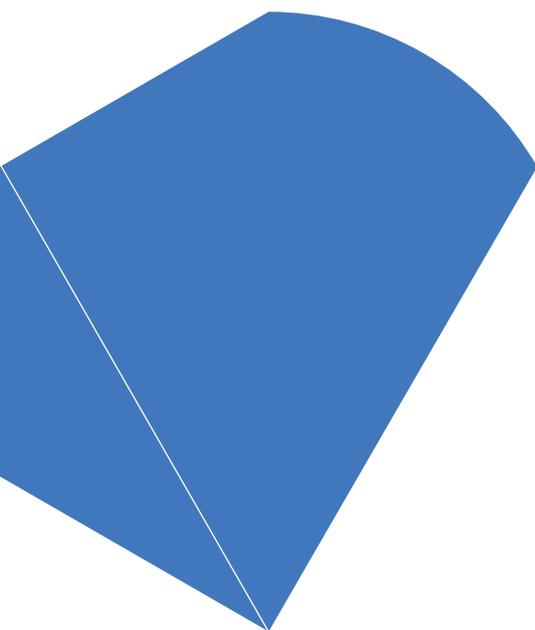
# Using IBM Cloud Object Storage with Kofax's Acuo vendor neutral archive

## The unprecedented growth of healthcare data

Unprecedented growth of digital information in healthcare presents an immense storage challenge for organizations. Research from IDC forecasts overall healthcare data to grow at 48 percent per year, reaching 2.3 zettabytes by 2020<sup>1</sup>. Advances in diagnostic technology, digital medical imaging and electronic health records (EHRs) have resulted in a proliferation of data in a wide variety of file formats that reside in different locations within an organization. As a result, healthcare IT is struggling to deliver a multi-petabyte storage solution, and to meet ever-increasing service levels across the organization. At the same time, advancements in data analytics make imaging data more valuable as a tool to drive research and improve patient care. To help healthcare organizations better manage rapid data growth and ensure optimal usability of data, IBM has partnered with leading vendor neutral archive (VNA) provider Kofax Acuo to deliver a flexible, scalable and simple storage solution that integrates data silos, optimizes information flow and supports cost reduction.

## Medical imaging is the largest contributor to healthcare data growth

Medical imaging is the largest contributor to healthcare data growth. In fact, 90 percent of all healthcare data generated is from medical images<sup>2</sup>, and this data is unstructured. Advanced imaging technology is generating high-definition images that consume increasing amounts of storage capacity. Plus, regulations such as the Health Insurance Portability and Accountability Act (HIPAA) require organizations to establish policies for long-term image retention, backup and disaster recovery.



To address these image storage challenges, healthcare IT usually starts by implementing picture archiving and communications systems (PACS) to capture, store, view and share images. As the need grows to simplify management, large healthcare providers often turn to enterprise-wide VNAs that provide a consolidated platform for hosting multiple PACS software but still rely on traditional data storage methods which are expensive and not designed for today's unstructured data volume. As a result, healthcare IT is turning to IBM Cloud Object Storage that is inherently designed for highly secure, petabyte-scale, geo-dispersed data environments.

### How IBM Cloud Object Storage works with Kofax's Acuo VNA

IBM® Cloud Object Storage can be used with Acuo VNA data management software to provide a low-cost central repository for hospital medical images, photos, videos and documents. This solution extends the interoperability of Acuo VNA

archiving software to the storage backend to give healthcare organizations a low-cost storage alternative and better control of their data across multiple PACS.

IBM Cloud Object Storage integrates with Acuo VNA using the REST-based S3 protocol to create a vendor independent, standards-compliant data repository. As a result, healthcare organizations can centralize image retention, drive consistent workflow hospital-wide, and securely access and exchange of clinical data. In addition, healthcare organizations can avoid costly migrations and better manage institutional change as the S3 standard protocol facilitates easier data consolidation and data migration efforts and provides flexibility for implementing new systems without vendor lock-in.

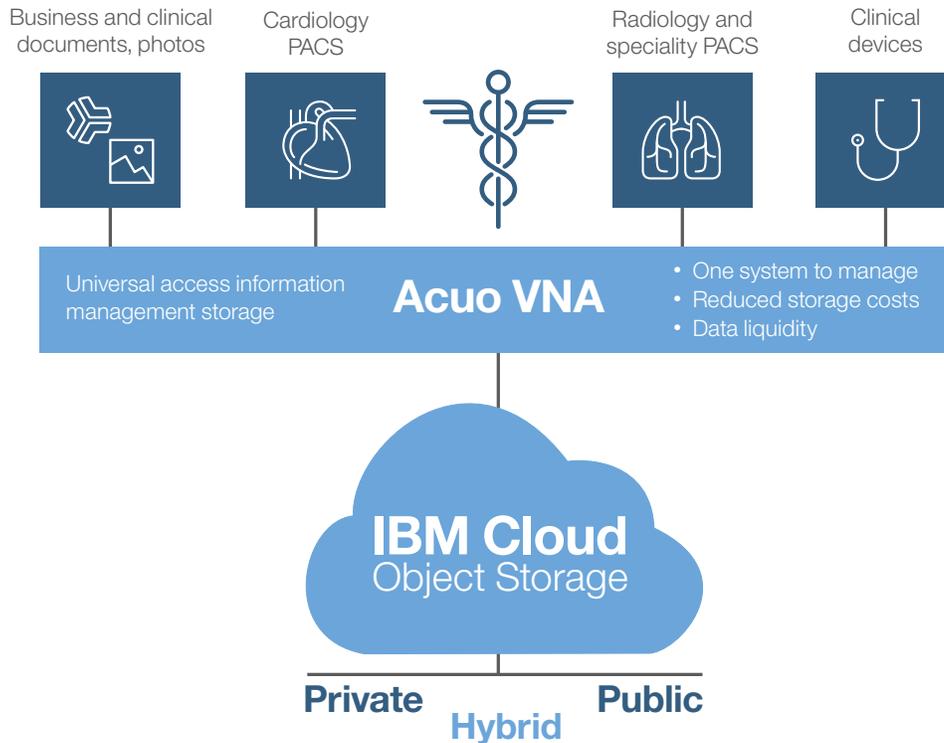


Figure 1: IBM Cloud Object Storage integrates with Kofax's Acuo VNA using the REST-based S3 protocol to create a vendor independent, standards-compliant data repository.

## Advantages of IBM Cloud Object Storage

Gain virtually unmatched flexibility by selecting deployment options that meet your needs. Choose among on-premises, private cloud, public cloud or hybrid cloud options that use a common software infrastructure with broad license and interface flexibility:

- **Private cloud:** Deploy object storage on-premises for optimal performance and control. IBM software runs on industry-standard hardware within your data center.
- **Dedicated cloud:** Choose an isolated, single-tenant system in the IBM Cloud that uses dedicated bare metal servers to optimize control and performance.
- **Public cloud:** Choose a public cloud deployment for unpredictable data growth. The IBM Cloud offers object storage in a shared, multi-tenant infrastructure.
- **Hybrid cloud:** Expand the object storage system in your data center through integration with the IBM Cloud. Customize the hybrid deployment to help meet your precise requirements.

**Exabyte+ scale:** Scale as needed to virtually unlimited capacity for storing larger images, high-definition formats, 3-D video and varied modalities such as MRI, CT, PET and others. The web-scale storage platform helps enable performance and capacity to scale independently, reaching exabyte levels and beyond. The IBM addressable global namespace is designed to deliver a unified, single point of management and access that can scale beyond the limits of traditional centralized metadata servers.

**Always-on accessibility:** Designed with a shared nothing architecture that allows industry-leading scalability, the software supports strong data consistency models that let you access your data across multiple time zones. The namespace is virtually unlimited, with no centralized metadata management process and no limit to metadata size or number of attributes. All metadata is treated in the same manner as data in that it is uniquely addressed and erasure coded for protection. This helps ensure your data is available even when drive(s), node(s), network(s) or site(s) fail.

**Supports healthcare collaboration:** Integration with healthcare-ready clouds and health information exchanges (HIEs) can improve healthcare delivery by enabling a more reliable, more secure exchange of clinical data.

**Built-in security and HIPAA-enabled:** Data at rest is encrypted, specifically with automatic provider side Advanced Encryption Standard (AES) 256-bit encryption and Secure Hash Algorithm (SHA) 256-bit hash. Data in motion is secured by using built-in carrier grade Transport Layer Security/Secure Sockets Layer (TLS/SSL) or SNMPv3 with AES encryption. When it's time for user access, credentials are generated and managed for each instance, helping to protect network connections against rogue attacks by using digital certificates. Each object written into the system is divided into several slices, with no copy of the data residing in any single disk, node or location. Each object can be read bit perfectly by using a subset of those slices. Thus, even if one disk, node or location is physically breached, it is virtually impossible to decode the data using algorithmic computation. IBM Cloud Object Storage has been successfully reviewed as compliant with the HIPAA and HITECH control set applicable to the services offered across on-premises and cloud systems.

**Simplified management:** Rich features help you more easily manage hundreds of petabytes of data with a small staff. The core technology is designed with a robust management graphical user interface that allows you to provision, monitor, troubleshoot and better secure your storage system with reduced intervention. Built-in reports and interactive charts help ensure that your system is operating efficiently. Physical and logical components of the entire system can be managed through a browser-based, single interface or robust application programming interface (API)-based management system. This also allows for integration with other management systems or tools of your choice.

**Content Repository for Analytics:** By integrating medical imaging data with EHRs, genomic data, lab results, scanned documents, patient personal health records and other sources, establish a rich, dynamic pool of data from which to gain a deeper understanding of health and wellness.

## About IBM Cloud Object Storage

IBM Cloud Object Storage provides the flexibility, scalability and simplicity needed to store, manage and access today's rapidly growing volumes of unstructured data in a private, public or hybrid cloud environment. IBM Cloud Object Storage transforms storage challenges into business advantages by reducing storage costs while more reliably supporting both traditional and emerging cloud-born workloads for enterprise mobile, social, analytics and cognitive computing.

IBM Cloud Object Storage is built on technology from object storage leader Cleversafe®, which IBM acquired in 2015. Some of the world's largest repositories rely on IBM Cloud Object Storage.

## Take the next step

To learn more about IBM Cloud Object Storage, visit [ibm.com/cloud-computing/products/storage/object-storage/cloud/](http://ibm.com/cloud-computing/products/storage/object-storage/cloud/).

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