

Optimize Your Healthcare Organization and Transform Your Data: Five Use Cases

A Frost & Sullivan Executive Brief
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Introduction

For healthcare organizations, data is the lifeblood of their operations. They are collecting, accessing, and analyzing escalating volumes of content, including patient information, clinical data, diagnostic decision data, billing and insurance data. While some of the data fits into traditional databases, the greatest volume of healthcare data comprises unstructured data (e.g., images, documents, graphs). Each data set may have different formats, different access needs, and be subject to different retention, security, and compliance requirements.

Today, to handle the range of critical data, many healthcare IT leaders use multiple storage solutions, with different solutions for different types of data. However, maintaining multiple storage solutions is costly, time-consuming, manual, and complex. Even more concerning: by maintaining discrete data pools, the organization may actually decrease the value of the data. Organizations in every industry are leveraging artificial intelligence and advanced analytics—technologies that require large and growing amounts of data to “train” the solutions to provide more accurate results. But when data is stored in application-specific silos, users and AI functions have limited ability to access or correlate data from multiple sources and timeframes.

Growing Use of Object Storage across Industries

Across all industries, organizations are increasing their use of scalable object storage solutions to better manage and optimize their data. According to some industry experts, upwards of 80% of all data will be stored in an object storage format by 2020, with total capacity estimated to reach over 330 exabytes.

However, healthcare organizations have lagged other industries in object storage usage. Today, only about 20% of healthcare organizations use object storage on-premises, according to Frost & Sullivan research; with another 20% using cloud-based object storage solutions. That means the majority of healthcare organizations are not effectively tapping into metadata to gain valuable insight from all their data stores.

Consolidating Data Assets with Object Storage

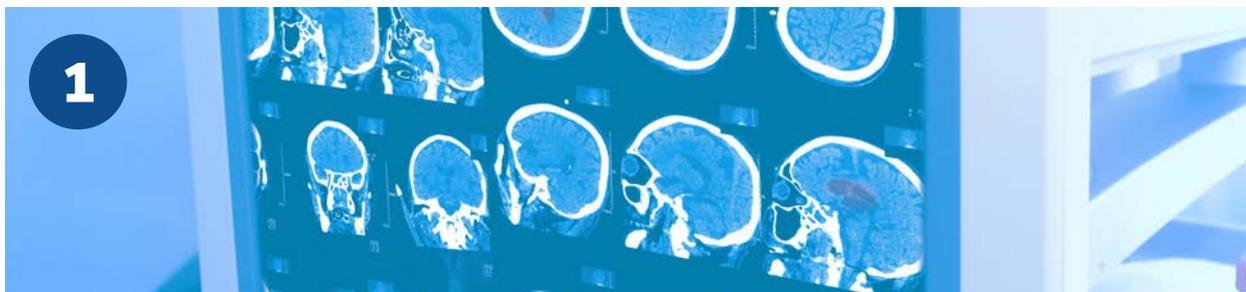
Healthcare organizations that have made object storage the foundation for their storage strategy are deriving value by consolidating more of their data assets in a single data repository. A versatile premises-based object storage platform offers the following benefits:

- **Simplified data architectures.**
- **Common management of critical data attributes** such as security and compliance, availability, data integrity and durability; and cost effectiveness, across a variety of data types, sources, and needs.
- **Cloud-like benefits**, such as scalability and data resiliency, with the security and control of an on-premises solution.

- **Management of traditional file storage** as objects, by migrating NAS data to secure “vaults” within the object storage solution.
- **Scalability and data resiliency** without requiring replication or “extra” copies of data.
- **User-defined metadata** (not just filename and timestamp) for ease of access and greater insight.
- **Single solution for all data types**, creating management simplicity, built-in data resiliency, and cost effectiveness.

Five Healthcare Workloads that Can Benefit from Object Storage

The more data repositories you pool into object storage, the greater the benefit, in terms of cost-efficiencies, minimized management burden, and greater insight from AI and analytics. The most advanced healthcare organizations are looking beyond common use cases to leverage object storage for other types of data. Consider these use cases:



Medical Images

You probably first learned about object storage as a smart way to store and access unstructured data, like the growing volumes of X-rays, CT scans, MRIs, and other images that your organization uses for diagnostics. In most cases, each technology produces output in a specialized file format that can't easily be combined or “read” by users and applications. By using object storage:

- Digital images from various imaging devices and formats can be stored securely on premises, and transmitted to and accessed from anywhere.
- Extensive tagging and metadata allows greater opportunity for images to be analyzed for insight beyond a single patient file.
- Images can be stored and associated with the doctor's audio notes, yielding greater insight from verbal diagnosis and assessment.
- The right object storage platform can integrate with your preferred Picture Archive Communications System (PACS).



Archive

Object storage offers a cost-effective way to archive data. An object storage solution:

- Allows you to cost-effectively comply with data handling and retention requirements.
- Offers cost-effective access to older data via “cold” archive or active archive.
- Integrates with your existing Independent Clinical Archive or Vendor Neutral Archive solution.



Protected Health Information

With patient account data, security and compliance are paramount. Object storage allows you to:

- Maintain account data on premises for greatest control over security and compliance, with backup to a secure cloud or alternate data center.
- Maintain current NFS files as an “object” on object storage platform.
- Maintain data integrity, minimizing data loss or corruption in primary and backup data stores.
- Minimize risk from data breaches and loss, with erasure-coding technology that disperses data fragments.



4 Telemedicine/Remote Patient Monitoring

New models of healthcare delivery are moving from underserved communities to mainstream. Object storage easily supports models such as:

- Medical device telemetry: Ingest and process large amounts of data from a variety of devices and formats, and store as part of patient records. Object storage offers secure encryption of data, data resiliency, and simple retention/archive.
- Telehealth: Transmit electronic images and data between patient and healthcare provider; record and store videoconferences, with all content complying with HIPAA regulations.



5 Patient Engagement Portal

Patients who take charge of their healthcare expect to engage with healthcare providers more than just at standard face-to-face, in-office appointments. But this requires that all data is kept in one, easily accessible and secure location. Object storage enables:

- A single portal to be used to securely communicate test results, appointment reminders, and account and billing information.
- Patients and healthcare professionals to communicate via secure email or text, which become part of the patient record.
- Fast retrieval of data from multiple sources and devices, via metadata tags.

The Last Word

In a complex world in which data holds the key to better patient outcomes, lower costs, and management of public health threats, healthcare organizations need a simple, effective storage solution: object storage. The right on-premises object storage solution offers scalability for always-on availability; security, including data encryption and standardized access for lockable WORM (write-once, read many) data; management simplicity, with automatic failure detection and concurrent data access; and savings associated with efficiency.

In the future, an efficient healthcare organization will likely leverage just two primary storage formats:

- Block storage, for medical records (back- and front-office activities)
- Object storage, for unstructured content. Some content, like office documents, may be placed in a cloud-based service, such as Microsoft Office 365. Other unstructured data—comprising images, pictures, videos, charts, documents, and files—will be stored as a single data repository, in a flexible object storage solution on premises.

With critical data consolidated in a single capacity tier on object storage, healthcare organizations can manage their data assets efficiently and effectively. That promises not only greater business success, but greater clinical success as well.



IBM Cloud
**Object
Storage**

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For more information, visit <http://ibm.com/marketplace/cloud-object-storage-system>.

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