Transforming medical imaging

Improving collaboration and the electronic health experience with offerings from Merge, an IBM Company, and IBM Storage

Highlights:

- Enhance collaboration and patient care with efficient, universal access to medical imaging and related data

- Deliver enterprise-class storage functions for healthcare organizations of all sizes

- Create a patient-centric view of medical imaging with IBM Storage and a vendor-neutral architecture (VNA)

- Manage cost and capacity without compromising performance and quality of service

- Mitigate risk and expensive data migrations when image systems change

Today's patients expect their physicians to provide high-quality healthcare based on intelligent, real-time insights from radiological images, clinician notes, and lab results. In addition, patients want easy digital access to their personal medical information, diagnostic guidance and treatment options.

To deliver the quality of care and the transparency of records patients demand, medical professionals need high-quality, real-time imaging evidence from radiology. The shift of radiological imaging services from volume-based imaging to patient-centric, value-based imaging has enabled a closer dialogue between the radiologists and the referring physicians. It has also raised the levels of clinical accountability, supported by actionable results, evidence-based decision making, integration with non-radiology systems such as electronic medical records (EMR), and active communication across the entire healthcare continuum.

However, the reality is that today's healthcare systems are not designed to facilitate easy information sharing across the enterprise. With a lack of standards and no clear integration between PACS/VNA imaging and non-radiology systems, effective communication between physicians and radiologists has become difficult. Physicians also have little or no access to real-time evidence in the collaborative point-of-care process, causing them to frequently miss out on notifications, scheduling and evidence, which can ultimately lead to errors in healthcare delivery.

An unparalleled approach to enterprise imaging

IBM Storage and Merge offer a more sensible, innovative approach to medical imaging. Pairing the industry-leading IBM Storwize® V7000 Unified storage system with Merge's iConnect® Enterprise Archive can give healthcare providers an unparalleled ability to consolidate, standardize and archive images and data from disparate PACS systems, specialties and sites. These capabilities can help decrease treatment time, reduce duplicate tests and minimize the risk of exposing patients to unnecessary radiation.

Radiologists, physicians and other specialists are aware of the need for faster, easier enterprise-wide image and information sharing. The inability to see all of a new patient's images — such as those stored in another imaging center's PACS archive—is a constant challenge, one that can lead to unnecessary duplicated studies. The combined offering of Merge applications and IBM Storage is specifically designed to create a consolidated view of the patient's diagnostic images and health records, which can be accessed quickly and easily to give physicians all the information they need to make informed decisions about patient care.

Most importantly, the combined offering of Storwize V7000 Unified and iConnect Enterprise Archive allows providers to proceed with confidence, knowing that the archive application and the underlying storage infrastructure are configured to work together, and are optimized for performance. Merge and IBM Storage work together during offering selection, implementation and deployment, providing a seamless experience that is extremely difficult to replicate when archive and storage vendors work separately.

Storwize V7000 Unified: Powerful, innovative and easy to use

Storwize V7000 Unified is a robust enterprise-class hybrid storage system that is designed to simplify management and consolidate block workloads and file workloads into a single system. Offering superior performance and availability along with ease of use, Storwize V7000 Unified can help meet modern data storage requirements problems without breaking the budget

Built with IBM Spectrum Virtualize™ software, Storwize V7000 Unified provides the latest storage technologies for unlocking the business value of stored data, including healthcare information and digital medical images. Built-in system capabilities include hardware-accelerated IBM Real-time Compression™, automated storage tiering with IBM Easy Tier®, thin provisioning, clustering, IP replication services, multi-protocol support and an advanced administration interface. Storwize V7000 Unified also enables non-disruptive migration of data from existing storage and can virtualize and reuse existing disk systems, contributing to a greater return on investment.

Merge's iConnect Enterprise Archive: The premier vendor-neutral archiving

iConnect Enterprise Archive is the industry's first truly stand-alone, vendor-neutral archive. It enables organizations to manage images and content from disparate PACS systems, creating a consolidated patient view. Images stored in the archive, no matter which PACS system delivered them, can be accessed throughout the enterprise quickly and easily, whenever and wherever clinicians need them.

iConnect Enterprise Archive has extensive capabilities that allow healthcare providers to make sure imaging data is stored in a standard DICOM 3.0 format. The archive also provides disaster recovery capabilities in the event that local PACS archives are not available. Unlike other systems, it offers failover image data and the ability to access that data through the replicated content management (RCM) application. The archive also helps reduce storage costs with image lifecycle management, including policy-based deletion.

In addition, iConnect Enterprise Archive helps healthcare organizations avoid costly data migrations. Even when other enterprise PACS systems change, images in the archive remain fully available.

From a workflow perspective, referring physicians can perform image reviews from browser-based devices with Merge's iConnect Access, a zero-download image and XDS (Cross-Enterprise Document Sharing) viewer. Because there is no software to download, iConnect Access offers physicians more options for viewing images throughout the enterprise. In fact, the tool can image-enable an electronic health record (EHR) or health information system (HIS) with a simple embedded link that provides immediate access to images.

IBM Storwize V7000 Unified systems, together with iConnect Enterprise Archive from Merge, deliver a proven, world-class image archiving approach that is uniquely positioned to meet the current and evolving needs of any size healthcare organization.

Offering benefits

The advantages of combining IBM Storage with a high-performance, vendor-neutral imaging archive are considerable, especially for healthcare organizations that are looking to boost efficiency and minimize operating expenses.

IBM Storwize V7000 Unified and Merge iConnect Enterprise Archive form a robust backbone for an enterprise integration strategy. When used together, the two solutions facilitate image availability across multiple sites, specialties and vendors, simplified integration with EHRs, portals and health information exchanges (HIEs), and a single archive to distribute images to referring physicians.

The benefits of using Storwize V7000 Unified and iConnect Enterprise Archive together include:

- **Exceptional speed and power:** iConnect Enterprise Archive provides easy access to images, documents and information from multiple specialties across the enterprise, enabling faster, more productive patient care. In the same way, IBM Storwize V7000 Unified storage systems are specifically designed to ensure rapid data retrieval.

- **Outstanding flexibility:** Because iConnect Enterprise Archive is vendor neutral; it can connect with and store images from a wide variety of proprietary PACS systems. It can accommodate images from multiple specialties, as well as images from many sites in the healthcare system. When paired with Storwize V7000 Unified, this flexibility is what empowers users to deliver any image to any reviewer, no matter where they need it.

- **High reliability:** IBM Storage technologies are known around the world, in healthcare and many other industries, for their robust design, dependable performance and superior availability. iConnect Enterprise Archive is proven in hundreds of implementations, and has been optimized and tested to ensure smooth operation when used together with Storwize V7000 Unified.
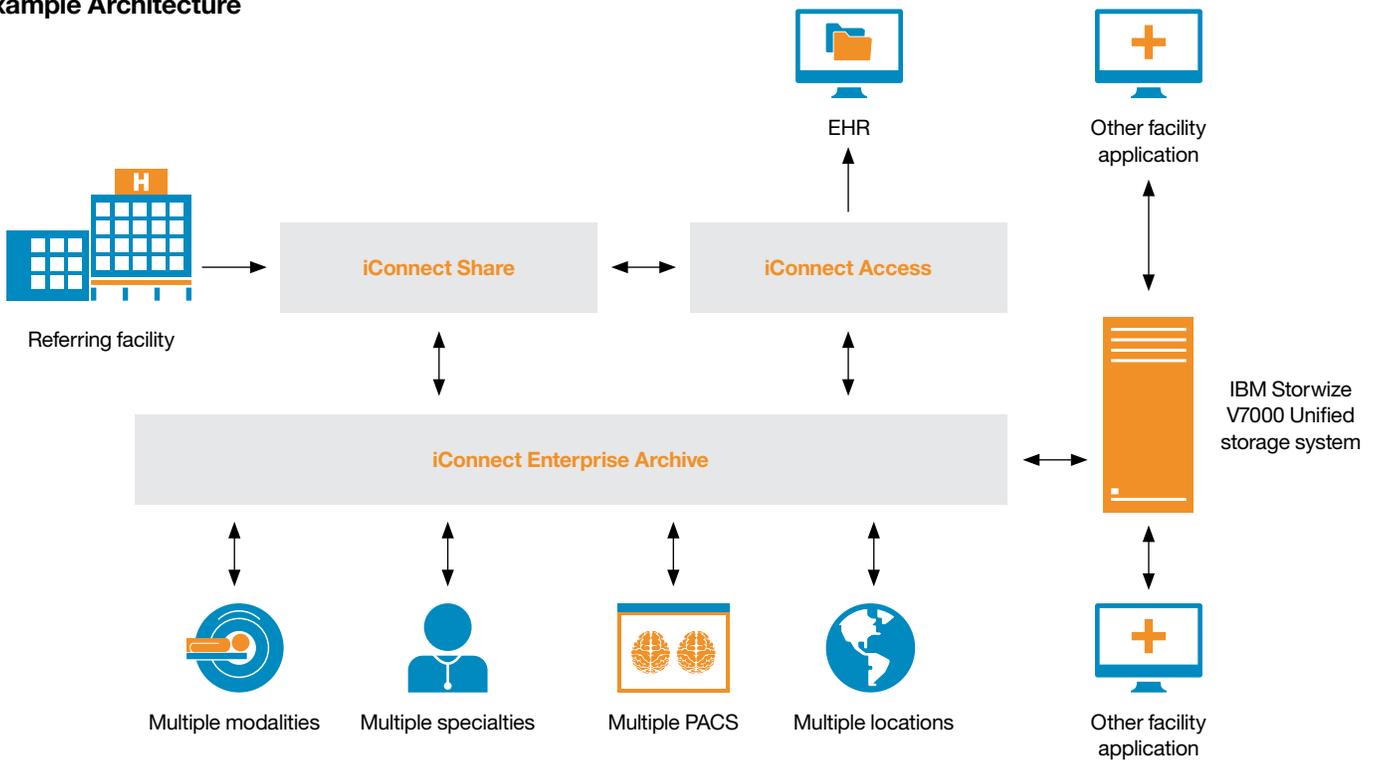
Example Architecture

Figure 1: Together Merge and IBM Storage enable healthcare organizations to store, retrieve, review and share extremely high volumes of medical imaging data in a more integrated, accessible, efficient and cost-effective way.

Enabling healthcare transformation

Merge, an IBM Company, is a leading provider of innovative enterprise imaging, interoperability and clinical systems that seek to advance healthcare. Merge's enterprise and cloud-based technologies for image intensive specialties provide access using a standard internet browser or mobile device.

Merge also provides clinical trials software with end-to-end study support in a single platform and other intelligent health data and analytics solutions. With solutions that have been used by providers for more than 25 years, Merge is helping to reduce costs and improve efficiencies, which enhances the quality of healthcare worldwide.

Companies can rely on IBM as a single expert supplier for their entire technical computing system, including servers, software, storage and networking. In addition, IBM's recent acquisition of Merge makes the process of sourcing healthcare systems simpler and more streamlined than ever before. A single point of contact makes it easier for companies to select and purchase a offerings that meet specific needs and delivers immediate business benefits. IBM knows technical computing from decades of experience and offers services, training and financing, along with a large network of IBM Business Partners that are ready to assist.

For more information

To learn more about IBM Storwize V7000 Unified systems, please contact your IBM representative or IBM Business Partner, or visit **ibm.com**/storage/storwizev7000.

To learn more about Merge, please visit merge.com.

ECM-10291 Rev 1.0
TSS03185-USEN-00