

ELEVATE

the quality and effectiveness of patient care.

HP Converged Medical Infrastructure and GE Centricity Enterprise Archive

Conquering the data explosion in medical images and patient records

Solution brief

Even as technology rapidly changes, the primary objective for all healthcare providers remains the same: deliver high-quality care that improves patient outcomes. To meet that goal, today's healthcare professionals rely on Picture Archiving and Communication Systems (PACS) to provide fast and easy access to complete, up-to-date patient data at the point of care.

But as the volume of patient records and image files continues to grow, legacy systems struggle to keep pace. Comprised of information silos with limited accessibility, aging systems fail to deliver the right patient records at the right time, which hinders patient care. For today's healthcare providers dealing with ever-increasing volumes of patient medical images, this is an explosive data challenge.

As leaders in the healthcare industry, HP and GE HealthCare clearly understand this problem. To overcome it, we worked together to develop an advanced solution—GE Centricity Enterprise Archive, running on HP Converged Medical Infrastructure. Using highly efficient, industry-standard components, the HP and GE Healthcare solution creates a flexible Digital Imaging and Communications in Medicine (DICOM) solution for secure and highly scalable long-term storage.

With HP and GE, you can meet your data challenges by:

- Managing massive volumes of information
- Immediately accessing and retrieving the files you need, wherever they are stored

- Securely storing sensitive data such as patient images and test results, enabling you to comply with stringent federal guidelines
- Employing tiered storage technologies to drive down costs at every stage of the information lifecycle

HP and GE Healthcare – a trusted, time-tested partnership

For more than 20 years, HP and GE Healthcare have worked together to foster a more holistic, patient-centric healthcare system—one that significantly boosts efficiency and reliability. By pooling the considerable resources and expertise of two Fortune 100 companies, HP and GE deliver a world-class combination of price, performance and capability. In fact, in January 2009, GE Healthcare announced a key performance milestone—having reached 20 billion cumulative transactions with HP.

By continually investing in the partnership, HP and GE Healthcare ensure that our joint solutions are validated on HP infrastructure, including HP P6000/EVA Storage Systems, HP X9000 Network Storage Systems, HP Networking and HP ProLiant servers. Customers can trust that HP and GE Healthcare solutions will work as promised, as designed, right out of the box.

HP and GE Healthcare solutions are available in configurations that meet the needs of hospitals of all sizes. Built on modular HP Converged Medical Infrastructure components, you can start wherever you are today, and seamlessly grow as your needs change.



Conquering the explosive medical image data growth problem

The latest research from the Enterprise Strategy Group states that every 3–4 years, we will store 4 times as much data as we do today—which equates to nearly 200,000 petabytes.

Solving this explosive data growth problem requires a complete understanding of how to store and manage such enormous volumes of medical images. HP and GE Healthcare not only understand the problem—we have the solution.

HP and GE Healthcare Advantages	Benefits
Integrated solution	• Aligns the business value of images and studies with appropriate data retention policies
Scalable	• Reduces total cost of ownership by allowing storage to be seamlessly added as needed, with no downtime
High availability for secure image storage	• Enables instantaneous, secure image retrieval
Consolidates historical data from multiple sources	• Lowers the cost of data storage and makes data more readily accessible
Flexible, open architecture	• Embraces multiple deployment options • Works over any public or private IP network • Accommodates unprecedented storage growth and performance

HP's industry-leading storage solutions and GE Centricity Enterprise Archive software improve efficiency and ultimately enhance patient care by putting easily readable, readily available patient images, test results and other data in front of the medical professionals at the point of care. This is a vital step toward achieving an integrated healthcare enterprise.

HP and GE Healthcare workflow

An industry leader with more than 30 years' experience serving the unique needs of healthcare providers, HP offers highly reliable solutions that help ensure patient information is always available and secure. As the #1 vendor in the healthcare industry¹, HP develops technologies that ease deployment, management, support and service of today's medical infrastructure. HP's comprehensive portfolio of scale-out solutions in storage, servers and networking includes:

- **HP Converged Medical Infrastructure** – Delivering the data center of the future, today; helping you overcome IT sprawl using innovations that deliver new levels of simplicity, integration, and automation; uniting servers, storage, networking, applications, and power and cooling on one highly efficient platform.
- **HP X9000 Network Storage Systems** – Extremely simple, efficient and adaptable, HP X9000 Network Storage Systems deliver excellent performance and a modular storage infrastructure to accommodate unprecedented storage growth and performance.
- **HP P6000/EVA Storage Systems** – High performance database storage for the GE Centricity PACS Short-Term Storage (STS) environment; HP P6000/EVA Storage Systems can also be used to store STS images in addition to the database.
- **HP ProLiant servers** – Industry-standard servers and solutions deliver confidence and reliability; available in rack-mount, tower blade, and scale-out form factors.
- **HP BladeSystem c-Class** – Converged infrastructure in a box simplifies your IT; mix and match server, storage

and networking blades all in one compact enclosure.

- **HP Networking** – Solutions for the large enterprise or the small office; enable staff to move between locations and always have access to patient information.
- **HP Services** – Most comprehensive expertise to align applications, infrastructure, and facilities to your business goals; offering expertise across many areas helps you modernize applications and infrastructure to reduce complexity, align business and IT processes, and maximize efficiency.

Together with the HP X9000 Network Storage System and HP P6000/EVA Storage System, the GE Centricity Enterprise Archive enables workflow and data integration across the enterprise, while also supporting DICOM-based images and non-DICOM text-based data. In addition, the GE Centricity Enterprise Archive plans for the unexpected, enabling business continuance with redundancy options for disaster recovery, load balancing, and failover.

HP X9000 Network Storage Systems

Important components in the HP Converged Medical Infrastructure strategy—where servers, storage, management software, networking, power, cooling and security are pooled and shared as services—the HP X9000 Network Storage Systems are built to seamlessly serve, store and scale both data and performance. Built-in virtualization capabilities enable on-the-fly resource provisioning to meet rapidly changing demands. These systems optimize capacity and power consumption, and seamlessly integrate with any standards-based applications in your storage ecosystem.

Available in three scale-out packages—HP X9320 high-performance systems, HP X9720 high-capacity systems and HP X9300 gateway—HP X9000 Network Storage Systems are:

- **Simple:** pre-tested PACS solutions eliminates hassles

- **Efficient:** optimized short-term image cache versus long-term archive with built-in automatic data movement
- **Adaptable:** pay as you grow architecture allows you to start small and grow very large with no downtime

Why choose the HP X9000 for GE Centricity Enterprise Archive?

To meet your IT requirements and budget, HP and GE Healthcare offer an extensive portfolio of server and storage solutions. HP storage solutions for the GE Centricity Enterprise Archive are your best choice for PACS because they scale to accommodate a wide variety of storage and enterprise needs.

The integrated HP and GE Centricity Enterprise Archive solution is reliable and secure, offering greater data integrity and immediate availability to any user from

any location. By using an online approach, the HP and GE solution safely and cost-effectively captures, stores, accesses, distributes and displays vital patient information, including PACS images.

With the HP X9000 Network Storage System, you can overcome your explosive data growth challenges by providing just-in-time scalability in a consolidated storage environment. HP X9000 helps you:

- Archive processed data to free up space on the primary tier and make room for new medical images.
- Create a cost-optimized data repository that serves as a reference library for archived projects, helping doctors and medical staff quickly search and retrieve the content they need, when they need it.
- Reduce costs by consuming less energy for power and cooling, using less data center floor space and reducing licensing fees. HP and GE Healthcare

Note: The following configurations are examples only. Your actual configuration will vary, depending on your requirements. Consult with your HP or GE Healthcare representative for an official recommendation that meets your unique needs.

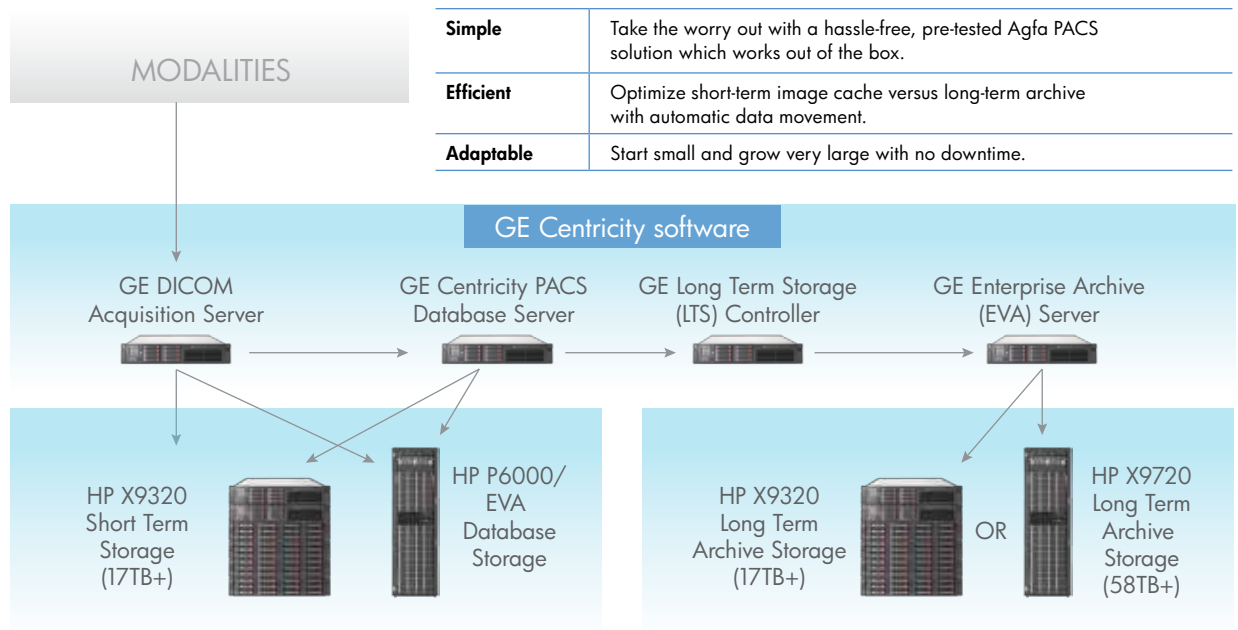


Figure 2: Figure 1 depicts what a typical GE Centricity Enterprise Archive architecture would look like when deployed on and integrated with HP X9000 Network Storage System. As image data flows to the GE Centricity Enterprise Archive system, it is seamlessly stored on the HP X9000.

"Penn Medicine's Hospital of the University of Pennsylvania (HUP) needed a solution for their medical images which is simple, efficient and adaptable. With GE Healthcare's Centricity Enterprise Archive to manage the images and HP Converged Medical Infrastructure featuring HP X9000 Network storage to store the images, HUP gets a system which meets our needs today, but prepares us well for future growth in our medical imaging and patient record systems."

– Tod D. Simons
Deputy Director, Medical Informatics
Penn Medicine's Hospital of the University of Pennsylvania (HUP)

"GE Healthcare IT is a staunch proponent of standards-based solutions as we believe this provides long term sustainable value through interoperability. Penn Medicine's Hospital of the University of Pennsylvania has been able to optimize the storage of medical images in native DICOM by taking advantage of the breakthrough storage offering from HP without disrupting their current workflow being managed by GE Centricity Enterprise Archive."

– Lawrence White
Senior Director, Imaging Marketing
GE Healthcare

HP and GE Healthcare

HP and GE Healthcare solutions help you focus on what counts—your business and your patients

- Modular standards-based software, systems, and solutions allow medical practitioners to implement the technology they need, when they need it and as budget allows.
- Today, HP and GE Healthcare solutions operate in virtually every hospital, supporting all IT and application needs, from end user to data center.

Ready for an extreme data solution?

Trust HP and GE Healthcare to enhance the availability and protection of your patient images. Improve your workflows and enhance quality of care using advanced storage technologies that expedite retrieval of image files at the point of care. Solve your explosive data growth challenges while complying with federal data retention policies. With HP Converged Medical Infrastructure and GE Centricity Enterprise Archive:

- Doctors and medical staff enjoy faster time-to-first-image when requesting a file from the archive.
- Prior studies and images remain available for fast access, even in the event of a failure to the main data center at the hospital.
- Cost and management of medical fixed content is reduced, by using a tiered storage approach that consolidates historical data from multiple sources to lower-cost media.

Resources

To learn more about PACS solutions from HP and GE Healthcare, visit www.hp.com/go/storage and www.gehealthcare.com.

Service options

HP and GE Healthcare provide a comprehensive array of solutions across services, software, servers, storage and networking. In addition, HP's services expertise can bring all your solutions together and deliver them any way you want.

You can use these services to help keep critical processes "always on":

- Integrated Support
- Server Services
- Mission-Critical Services
- Service Management Services
- Multivendor Support Services
- Storage Services
- Security, Compliance, and Continuity Services
- Support Services

You can also choose from the following storage services.

Storage Infrastructure Optimization Services

- Storage Consolidation
- Data Protection and Replication
- Storage and Data Migration
- Storage Management

Storage Technology Services

- Storage Support
- Storage Installation and Implementation
- Scalable Event, Technical, and Solution Services

Related Services

- Data Center Transformation
- HP CarePack Services for Storage
- Virtualization Support

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