



Sharing Clinical Images to Help Improve Quality of Care

Consolidate data silos, build unified patient records, and enable sharing across the care continuum with GE Healthcare's Centricity™ Clinical Archive¹ solution powered by Intel® technology

This solution brief describes how to solve business challenges through investment in innovative technologies.

If you are responsible for...

- Business strategy:**
 You will better understand how GE Healthcare's Centricity™ Clinical Archive solution will enable you to successfully meet your business outcomes.
- Technology decisions:**
 You will learn how GE Healthcare's Centricity™ Clinical Archive solution works to deliver IT and business value.

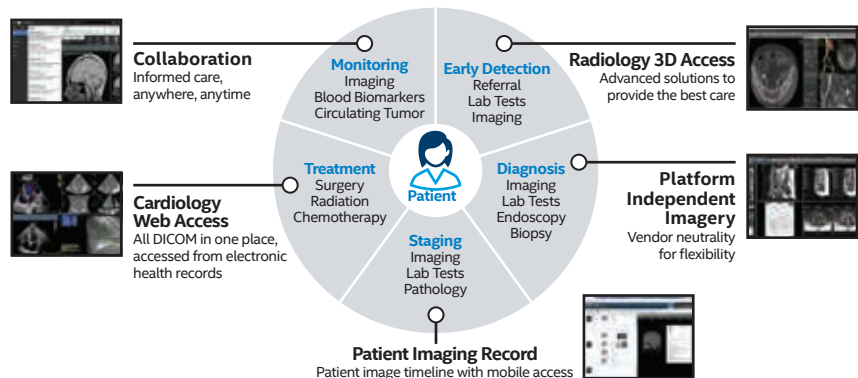
Executive Summary

Healthcare providers face a variety of clinical and financial challenges. The cost of care is increasing, patients are looking for easy access to their health records, and patient data and images are typically siloed and not easily accessible to clinicians. Quality of care suffers when healthcare professionals cannot easily capture, access, and share patient information.

Healthcare organizations need a way to consolidate patient data silos so providers can deliver excellent patient care with timely and complete clinical information. GE Healthcare's Centricity™ Clinical Archive (CCA) solution, built on Intel® architecture, provides interoperable imaging data access. A standards-based, vendor neutral archive (VNA) solution, CCA simplifies content management while increasing clinician efficiency, facilitating collaboration, cutting costs, and improving the patient experience, patient care, and care provider satisfaction. CCA can help care providers improve productivity and care coordination by enabling accessibility and sharing of patient records anywhere, anytime. In addition, image-enabled electronic health records (EHRs) offer clinicians a single point of access. Benefits include low costs of storage and information management on a standardized platform, improved workflows, streamlined clinical data lifecycle, improved quality of care, and single point of access.



GE Healthcare's Centricity™ Clinical Archive Solution



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Figure 1. GE Healthcare's Centricity™ Clinical Archive solution enables quality care across the entire enterprise with a patient-centric, vendor neutral archive approach.

Solution Benefits

Healthcare providers using GE Healthcare's Centricity™ Clinical Archive (CCA) solution can potentially gain the following benefits:

- Low storage and information-management costs
- Single point of access to image-enabled EHRs
- Unified, easily shared patient records
- Helps improve clinician productivity and care coordination
- Minimized manual and duplicate documentation
- Enhanced service continuity

Business Challenge: Providers Need Convenient, Fast Access to Patient Data and Images

Today's healthcare providers are facing multiple clinical, financial, and customer service challenges. Patients are increasingly demanding convenient, easy access to their own health data, and want digital and self-service options. However, multiple departmental systems store data in rigid data silos, and the information is inaccessible to patients and clinicians. Existing storage silos stifle innovative workflows, hamper care-team coordination and collaboration, and diminish quality of care. As regulatory requirements incentivize organizational efficiencies, penalties for non-compliance will increase for healthcare organizations that lack interoperable and workflow-efficient systems.

Enterprise-image management includes administering a variety of data and documents. To meet today's challenges, providers need to be able to capture and share clinical data across the organization to build a unified patient record. An ideal way to do this is to consolidate and link Digital Imaging and Communications in Medicine² (DICOM) and non-DICOM data across departments. Historically, healthcare organizations have only been able to capture images and access them in a single location. With GE Healthcare's Centricity™ Clinical Archive (CCA) solution, providers have the means to capture and access images, data, and documents across the enterprise (see Figure 1).

Medical Facilities Use CCA and Software-Defined Storage to Help Enhance Interoperability, Expand Access to Clinical Data, and Drive Down Costs

Many medical facilities want to expand access to their clinical database to the entire enterprise. In healthcare, images traditionally have been the domain of the radiology department, which produces a variety of images for assessment and diagnostic purposes. However, images need to be captured throughout a healthcare organization to optimize patient care and clinical treatment.

"GEHC Digital leverages many Intel® technologies within the hardware platforms underlying our software solutions. Combining GEHC software solutions with Intel® technologies provides an overall integrated approach translating to comprehensive solutions for customers to support care for their patients."

— Lynn Richard, Senior Director
Strategic Alliances, GE Healthcare

When images are not visible across the organization, clinicians have no way to capture and share them from other departments. By choosing to deploy CCA on Intel® servers and software-defined storage (SDS), healthcare organizations can separate the application software from the storage hardware on which it runs. SDS is storage infrastructure that's managed and automated by intelligent software, helping to deliver flexibility, scalability, high availability, and data resilience in storage solutions. Adopting this storage model means organizations can access their servers, storage, and networking from any number of sources. They can also buy different hardware in future years when newer and less expensive hardware options exist, and add that hardware to their existing SDS cluster. This is what drives costs down. In addition, CCA on SDS helps make the images ingestible and accessible throughout the organization and all other diagnostic departments.

Solution Value: Unifying Patient Data, Images, and Content

GE Healthcare's CCA solution is an open-architecture, vendor neutral archive (VNA) solution for seamless image and document consolidation and access that unifies and intelligently manages patient data, images, and enterprise content. Built on Intel® architecture and DICOM-compliant industry standards, the solution includes CCA's Media Manager mobile application, which enables users to seamlessly connect disparate systems across multiple specialties, facilities, and archive systems. Its native tag-morphing capability can help CIOs overcome limitations of multi-vendor picture archiving and communications system (PACS) technology to optimize image sharing and workflows. CCA helps provide the basis for analytics that will give valuable insights for more informed treatment plans and better outcomes with reporting to understand operational data. CCA enables users to simply and easily digest, access, and document images for patient care and assessment.

EXPERIENCE, COSTS ARE KEY³



91% of CIOs said patient experience and cost containment are their most important priorities.

CCA users can expect the following benefits:

- **Image-enabled EHR.** Easy access to patients' images and reports from an EHR or hospital information system (HIS) help reduce disruption to workflows.
- **Improved clinician and patient experience.** With convenient access to patient records from anywhere in the organization, clinicians are able to spend more time per patient case and less time searching for data in multiple systems.
- **Potential to enhance a wound-care department's quality metrics.** Intuitive mobile tools may help reduce the time taken per documentation and support documentation quality-assurance goals.
- **Enhanced governance and control of enterprise-wide data.** Organizations can enforce standard IT rules and policies concerning data management, security, data purging, and compression regardless of the type and origin of the data.
- **Fewer service disruptions.** High availability, disaster recovery, and cloud-ready infrastructure help ensure service continuity.
- **Foundation for advanced analytics.** Organizations can gain advanced, analytics-based insights by using a centralized standards-based repository of structured and unstructured data.
- **Reduced total cost of storing and managing data.** Provider organizations can save money by deploying a single unified software-defined storage solution for storing and distributing data.

Solution Architecture: Delivering Clinical Insights at the Point of Care

CCA helps support improved care by enabling sharing of data for clinical insights, saving money, boosting productivity, and improving efficiencies (see Figure 2).

Uploading Clinical Images via Mobile Devices

A differentiating feature of GE Healthcare's Centricity™ Clinical Archive (CCA) solution is the Media Manager mobile app. The app helps enable clinicians to quickly acquire and annotate images and videos directly from mobile devices to help reduce documentation time per patient case, avoid missed patient data, and increase staff efficiency and productivity.

Media Manager enables care providers to capture visible light images and video to document patient conditions, such as wounds, and patient care exam information. Users select clinical information about the images from a customizable user interface and then submit the images to CCA for storage and viewing on the Centricity Universal Viewer Zero Footprint (ZFP) client.⁴ Centricity Universal Viewer ZFP directly accesses and displays images on desktop, mobile devices, or it can image-enable an electronic health record (EHR). The documentation becomes part of the patient record at the point of care.

For example, when patients come to an ER, clinicians must document all existing wounds within a specific amount of time or the healthcare organization will not be reimbursed for the care of those injuries. It then becomes essential to provide the necessary documentation to prove the wounds existed before a patient's arrival so the organization can provide the appropriate care and receive proper payment. By using Media Manager, physicians can deliver proactive patient care by easily and effectively adding each image to a patient's records directly from a mobile device.

Centricity™ Clinical Archive Reference Architecture

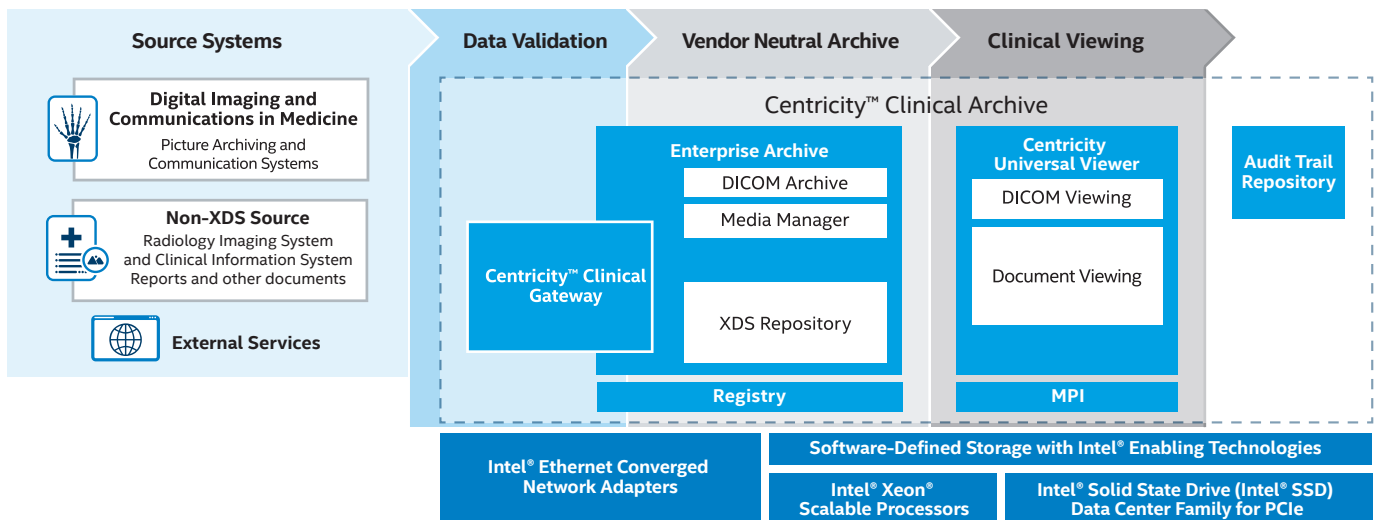


Figure 2. Based on the Intel® Xeon® Scalable Processors, GE Healthcare's Centricity™ Clinical Archive solution enables organizations to consolidate data silos, build unified patient records, and share information across the care continuum.

“Intel and GE Healthcare have a long history of close technical and commercial engagement with a focus on helping our joint customers improve their clinical and operational outcomes.”

—Nick Cafentzis, Vice President of Marketing, GE Healthcare

CCA is powered by the Intel® Xeon® Scalable Processors. This family of processors delivers versatile performance to support growing workloads and agile data centers. By offloading compute-intensive operations like bulk and public-key cryptography and lossless data compression from servers, Intel® QuickAssist Technology helps improve VNA performance, security, and efficiency.

A critical component of the CCA solution is SDS, enabled by Intel® technology. By using industry-standard, non-proprietary protocols, organizations can use SDS like VMware™5 VSAN®6, Nutanix™7, NetApp™8, or open-source Ceph™9 to move storage from siloed resources to a common, virtualized resource pool of storage. Storage virtualization can help reduce complexity, maximize efficiency, and ease administration tasks.

Large and disparate data volumes require an innovative processing solution. Intel® Solid State Drive Data Center Family for PCIe brings extreme data throughput directly to an Intel Xeon processor. The Intel SSD DC P3700 Series is a Gen3 SSD based on the Peripheral Component Interconnect Express (PCIe) and architected with the new Non-Volatile Memory Express (NVMe) high-performance controller interface for improved performance, latency, and service quality.

CCA processing infrastructure also includes Intel® Ethernet Converged Network Adapters, a 10/40 gigabit family of adapters built specifically to address the demanding requirements of the next-generation agile data center. The adapters include powerful features for server and network virtualization and offer flexible performance for LAN and SAN networks.

Conclusion

GE Healthcare's Centricity Clinical Archive is a robust, patient-centric and vendor neutral archive (VNA) solution. CCA helps consolidate clinical data while providing easy access for care

providers. CCA offers a unified view of patient images and documents, delivering clinical insights at the point of care to help inform treatment plans, reduce unnecessary tests, optimize total cost of ownership through reduced resource and infrastructure costs, and improve patient care and outcomes by delivering image access anywhere an internet connection is available. In addition, CCA can help boost efficiencies, increase productivity, and reduce costs.

Built on Intel open architecture, CCA is a standards-based solution that intelligently incorporates a wide array of patient data types from disparate vendor systems and expands access through a web-based, zero footprint viewer. While some vendor neutral archives support only departmental DICOM consolidation, CCA helps clinicians streamline collaboration through a variety of interoperability standards. Its native tag-morphing capability can help CIOs overcome limitations of multi-vendor picture archiving and communications system technology to optimize workflows and image sharing. In addition, CCA offers virtual server deployment options to help save data center space, enable disaster recovery through cloud storage connection, and enhance reliability with standardized configurations. With the Media Manager mobile application, users can easily document and access images for patient assessment and care.

Find the solution that is right for your organization. Contact your Intel and GE representative, or visit ww3.gehealthcare.com and intel.com/healthcare.

Learn More

You may also find the following resources useful:

- gehealthcare.com
- [Intel® Xeon® Scalable Processors](#)
- [Intel® Storage Builders](#)

Solution Provided By:



¹ Centricity™ Clinical Archive includes the following product components: Centricity Enterprise Archive, Centricity Universal Viewer ZFP client, GE XDS Registry, Centricity Clinical Gateway, Audit Trail Repository, Media Manager, ICW Master Patient Index (MPI), and Lexmark PACS Scan. See the Centricity Clinical Archive Compatibility Matrix and product-specific documentation for requirements.

² DICOM is the registered trademark of the National Electrical Manufacturers Association for its standards publications relating to digital communications of medical information.

³ advisory.com/research/imaging-performance-partnership/the-reading-room/2014/04/what-does-the-c-suite-think-is-the-key-to-imaging-program-success-hint-its-not-growth.

⁴ Centricity Universal Viewer ZFP client has been validated and cleared for diagnostic use by the US FDA on Microsoft® Windows® and Apple® Mac® products. ZFP has also received CE Mark for diagnostic use. As regulatory clearance requirements differ by country and region, GE Healthcare must obtain clearance in countries where local specific regulatory approvals are required. Your sales representative can provide information on the status of availability in your area. ZFP can also be used on the Apple® iPad®, Samsung Galaxy Note®, 10.1 and Galaxy Tab® 4 in a review only mode and is not meant for primary diagnosis on these devices. Please refer to the product datasheet for a list of operating systems and browsers supported on these devices.

⁵ VMware™ is a registered trademark.

⁶ VSAN® is a registered trademark of VMware™

⁷ Nutanix™ is a registered trademark

⁸ NetApp™ is a registered trademark

⁹ Ceph™ is a registered trademark

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