

# THE EMC MEDICAL IMAGE MANAGEMENT WITH DOCUMENT SHARING SOLUTION

## ESSENTIALS

- Manages structured and unstructured healthcare information where all documents, images, and media are available via the XDS-specification for applications
- All data can be consumed whether or not the clinical, financial, and operational content were not created via an XDS specification
- The XDS-I Registry provides the patient identity mapping using HL7 ADT messages so that applications can consume services without implementing these functions
- Features an interface that allows multiple healthcare organizations to federate and share information based on the IHE's Cross-Community-Access (XCA) specification
- Facilitates the secure access of information by participants from various user domains

## CLINICAL CHALLENGES

Global healthcare organizations are increasingly being pressured to share information to improve the delivery of patient care, coordinate patient financial services, and enable the adoption of the electronic health record. An interoperable healthcare environment allows siloed patient health information to be shared securely in order to gain a holistic view of the patient, improve the quality and efficiency of care, and control HealthIT costs. HealthIT interoperability is not only “a must” for collaborative healthcare, but it also greatly increases the value of technology investments made in healthcare organizations.

The EMC® Medical Image Sharing Solution delivers healthcare standards-based integration, and enables the interaction between any healthcare information application or system for the secure sharing and exchange of information. Its massively scalable software architecture is based on open standards such as XML, HL7, and XDS. When this solution is deployed, your HealthIT infrastructure will be durable and able to handle your future needs as the volume of digital content created by your clinical applications grows. Utilizing EMC's registry and repository also provides your organization with just the breadth of technology needed to meet changing requirements, for example, incorporating mainstream content management capabilities such as digital imaging or compliance management to augment the patient record prior to sharing it.

## SOLUTION DESCRIPTION

The EMC Medical Image Management with Document Sharing Solution is one of EMC's Solutions for Collaborative Healthcare, providing patient-centric infrastructure to “content-enabled” PACS, HIS, and EMR applications for access to all relevant clinical, financial, and operational data. It allows healthcare providers to improve clinical workflow and productivity for safer, collaborative care decisions.

This offering is based on open standards in accordance with the “Integrating the Healthcare Enterprise” (IHE) initiative which promotes the coordinated use of established standards such as DICOM, HL7, and XDS. The solution leverages the EMC Documentum® Content Server to manage the storing, retrieval, updating, and archiving of patient information and its metadata in an open, non-proprietary format. Documentum also provides the appropriate retention policies, security policies, and services-oriented management policies to ensure the compliance and availability of medical information during its lifecycle.

This solution helps improve clinical workflow and time to treatment by delivering integrated, unstructured data at the point of care. The solution enhances operational agility and reduces costs through the abstraction of applications and infrastructure, improves financial performance by managing physical and virtual assets with highly automated tools, and secures access to and prevents loss of protected health information (PHI) and personally identifiable information (PII).

As one of EMC's Solutions for Collaborative Healthcare, the EMC Medical Image Management with Document Sharing Solution is a core solution that can be enhanced with additional capability as new components are added.

# Figure 1

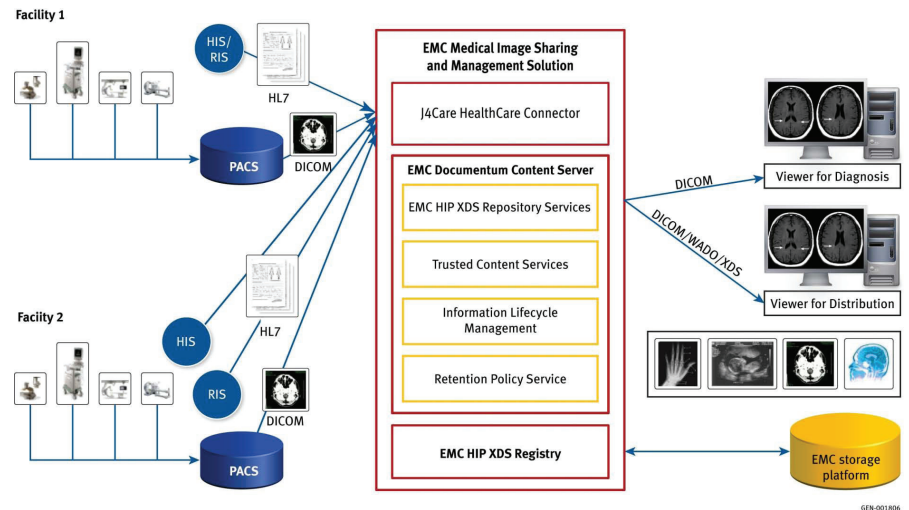


Figure 1. This graphic shows the high-level architecture of the EMC Medical Image Management with Document Sharing Solution with Content Management and Cross-Enterprise Document Exchange.

## SOLUTION COMPONENTS

The EMC Medical Image Management with Document Sharing Solution runs on Linux RedHat 5.5 64 bit O/S and Oracle 11G R2 DB and consists of the following components:

- **J4Care enhanced IHE protocol support** enables the coexistence of multiple implementations of DICOM and HL7 standards, communication, and visualization and the J4Care Healthcare Connector (HCC) software establishes an IHE compliant Image Archive and Report Repository integrated with the EMC Documentum platform.
- **EMC Documentum** provides complementary capabilities to traditional RIS/PACS integrations—allowing documents, patient records, prescriptions, invoices, and other unstructured content to be easily accessed via a secure, virtual, and federated repository, while leveraging open standard message formats to reduce the expensive point-point integrations that are typically required.
  - **Documentum Content Server** governs the Documentum content repository containing the data and metadata and can manage HTML and XML, graphics, multimedia, other types of rich media, and traditional documents created with desktop applications.
  - **Documentum Retention Policy Services (RPS)** enables compliance with regulations for the retention and disposal of patient information. RPS attaches the appropriate lifecycle policies to the different types of medical information (i.e., DICOM, HL7, SAP, and scanned documents) stored in the Documentum repository. Static and dynamic policies can be configured to support real-life events based on any metadata on the objects or through referenced objects such as the patient or the facility.
  - **Documentum Content Storage Services (CSS)** stores each medical document in a file store when it reaches the repository. CSS provides de-duplication and compression without changing the original file and both automated and policy-based storage and migration of data across tiered storage layers of the corporate network.
- **Trusted Content Services (TCS)** provides an additional security layer for controlling how content is protected, accessed, and authorized under complex, dynamic conditions.
- **EMC Archiving Solutions** creates an accessible online medical image archive and lowers operational costs, achieves regulatory and litigation requirements, and facilitates retrieval of patient information. EMC offers a range of backup solutions, including purpose-built cloud storage platforms that can manage millions of objects per day and efficiently store and protect data at petabyte scale throughout your healthcare organization.
- **VMware vSphere** dramatically reduces capital and operating costs and maximizes IT efficiency while giving healthcare organizations the agility through automation and the freedom to choose applications, operating systems, and hardware.

The EMC Medical Image Management with Document Sharing Solution offers:

- A virtualized, secure platform for all patient documents and records, images, and applications
- Automated monitoring and provisioning capabilities
- High availability and disaster recovery and 24/7 support
- Enhanced performance and scalable architecture
- IHE-compliant data sharing and intelligent information management
- Ability to archive, secure, retain, migrate, and reconcile all types of content across applications based on clinical business rules
- Storage of any type of documents and metadata in a non-proprietary format
- De-duplication of DICOM files at the point of entry to the archive
- Acceptance of connections through DICOM, HL7, and XDS.b

The healthcare integration portfolio is comprised of building block components, including:

- **EMC Documentum XDS Registry** is the directory or “white pages” for medical and administrative content and allows applications within the enterprise to discover and then access information. It provides a central catalog for documents that may reside in a federated system or repositories, either heterogeneous or geographically distributed.
- **EMC Documentum XDS Repository** stores structured and unstructured healthcare information where all patient-centric documents, images, and media are available via the XDS-specification for applications to consume—even when the clinical, financial, and operational content was not created via an XDS specification.
- **EMC Documentum XCA Gateway** is an interface that enables multiple healthcare organizations to federate and share information based on the IHE’s Cross-Community-Access (XCA) specification. The XCA gateway facilitates the secure access of information by participants from various user domains, e.g., regions within a country.
- **EMC Identity Mapping** is a solution that meets one of the key requirements in patient-centric healthcare—the reconciliation of patient identity.
- **Connectors** provides a library of connectors for on-boarding information to be shared in addition to the standards-based integration through XDS messaging. An example is an XDS-I Connector, where DICOM images are processed for storage or retention and the XDS-I objects are provided to the repository.

## SOLUTION BENEFITS

The EMC Medical Image Management with Document Sharing Solution simplifies internal healthcare IT processes by providing an integrated, virtualized, and services-oriented IT environment for the management of all the information in the healthcare organization. Clinicians gain a 360-degree view of the patient that is secure, easy to access, and compliant-ready. In addition, this solution provides:

- Rapid access to patient health data at the point of care and across the healthcare exchange for collaborative healthcare
- A modular approach to provide the breadth of technology needed to meet your requirements now and in the future
- Scalable software architecture based on open standards allows easy data exchange
- Supports for healthcare standards such as HL7 and XDS for ease of compliance

This solution accelerates clinical workflow and time to treatment through the delivery of integrated, unstructured data to the point of care. It also enhances operational agility through the abstraction of applications and infrastructure; improves financial performance by managing physical and virtual assets with highly automated tools; and secures access to and prevents loss of protected health information.

## CONTACT US

To learn more about the EMC Medical Image Management with Document Sharing Solution, please contact your local EMC account manager, or visit [www.EMC.com/healthcare](http://www.EMC.com/healthcare).

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