

Compressus and IBM: defining virtualization of healthcare

An innovative healthcare IT platform that enables physicians to access the right information and images at the right time



Highlights:

- Enables any-to-any connectivity among enterprise-wide clinical and medical imaging systems
 - Boosts flexibility, making it easier to add applications, reduce costs and improve compliance
 - Provides extensive scalability to expedite both organic and strategic growth
 - Increases physician productivity, driving game-changing improvements in patient care
 - Establishes a robust platform for clinical and business decisions and advanced analytics
 - Optimizes workload balancing to reduce costs and improve care
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Healthcare organizations face constant pressure to improve quality of care while reducing costs, increasing efficiency and adhering to regulatory requirements. Many address these challenges by layering new technologies on top of old ones, and the result is IT overload. Systems don't communicate effectively, data resides in silos, access is difficult and operational costs increase. Instead of taking advantage of new technologies, physicians in every specialty are forced to use frustrating work-arounds to get the information they need, when and where they need it.

Even if all the overlapping systems connected to each other seamlessly, inefficiencies and complexity would still exist. Different facilities and departments across the enterprise use different workflows which change frequently as standards of care, clinical protocols and regulations continue to evolve. Without a way to align disparate workflows, healthcare organizations remain unable to share information and collaborate in a way that will significantly improve productivity, care or costs.

IBM and Compressus offer a radically different approach. Together, the two companies offer a vendor-neutral way to address interoperability and workflow simultaneously, so physicians can access critical information and images from anywhere in the enterprise — and act on them — with unprecedented efficiency and ease of use.

Solution Overview

This powerful offering combines a proven software solution from Compressus with an array of infrastructure, workflow, business process and analytics solutions from IBM to create a uniquely flexible healthcare IT platform for seamless integration and optimized workflow. The ultimate outcome is that healthcare providers in virtually any department or subspecialty can easily access all of the patient information they need to make accurate diagnoses — including medical records, images, video, lab results, medications and more — from anywhere in the healthcare enterprise, using a single worklist.

The IT platform, MEDxConnect version 4.0, serves as an information hub that facilitates the easy exchange of patient information between all of the data acquisition, medical imaging and clinical systems found in the typical healthcare enterprise.



Instead of adding another proprietary system to the mix, MEDxConnect focuses on improving the speed and flexibility of interoperability between existing systems. It connects to any PACS, HIS, RIS and EMR from any vendor. It consolidates images and indexable information for access by any other user presentation display or analytical data viewer, presenting the pertinent patient details in a seamless and consistent format.

To do this, MEDxConnect supports protocols such as DICOM and HL7, as well as other widely adopted protocols, such as XML, SSL, TLS, HTML5 and many other standards. It uses the specific communications protocols and semantics of each information system to control the flow of images, reports, messages, patient demographics and other attributed information required for accurate diagnosis and treatment planning.

By mapping data elements, connecting isolated islands of data, and mediating interoperability among disparate applications, MEDxConnect creates a virtual integrated information system that adheres to the IHE technical framework. It also provides application, system and network layer information handling, including business rule-based routing, routing based on QoS, pre-fetching and caching of associated information and managing distribution and notification of work efforts. These capabilities, together with the power of IBM infrastructure, uniquely position MEDxConnect to provide a virtualized healthcare information environment.

MEDxConnect also gives users tools to simplify, automate and optimize workflow. Users can login from any location and gain access to all unread patient information in a given specialty or subspecialty through a user-definable worklist, or select from a general worklist to reserve new data and documents available throughout the enterprise. Users determine how information is acquired and acted upon in many different specialties. For example, radiologists can continue to use their viewer of choice, even if images were originally stored in another vendor's PACS or a neutral archive.

The worklist shows and sorts orders according to priority, modality and other search criteria, enabling users to customize workflow and improve efficiency. It includes all relevant patient and order information, such as electronic notes and scanned documents, as well as prior studies and reports for comparison. Much of this information is pre-fetched according to the user's preferences, with primary medical images acquired when the diagnostic review begins. The solution also enables workload balancing, allocating studies among available physicians according to user-defined rules, such as body part, modality, exam status or time.

Combining the MEDxConnect Medical Message Mediator with IBM Business Process Manager makes it easy to modify existing workflows with simple drag-and-drop tools. For example, a radiologist can decide that relevant priors should be pulled to the worklist prior to the primary image, instead of simultaneously. These changes can be made effortlessly, delivering significant gains in productivity and allowing individual departments and physicians to choose the most efficient way to work.

The solution from IBM and Compressus also offers flexible deployment options. Its flexibility and scalability are ideal for today's healthcare industry, where organizations need to manage rapid change, including mergers and acquisitions. When bringing together two provider groups for example, the solution enables radiologists and other specialists from both organizations to maintain their current viewers and workflows without requiring one group to switch to another's preferred technologies. No legacy systems need be displaced or converted.

In fact, the architecture fully supports onsite, software as a service (SaaS) and private/public cloud-based deployments. This paradigm gives C-level executives new tools to manage capital expenditures, reallocate operational staff and optimize system-wide performance.

Moreover, the solution can easily connect to future components related to regulatory compliance, peer review or critical results tracking. In other words, the solution establishes an ideal healthcare IT platform for an industry where market dynamics are changing very quickly, and where speed and agility are critical competitive differentiators. The fact that applications from other vendors or the healthcare practice can be added easily provides additional growth opportunities.

As an added benefit, the entire solution is validated on the IBM Health Integration Framework, a software platform based on industry standards.

Solution Benefits

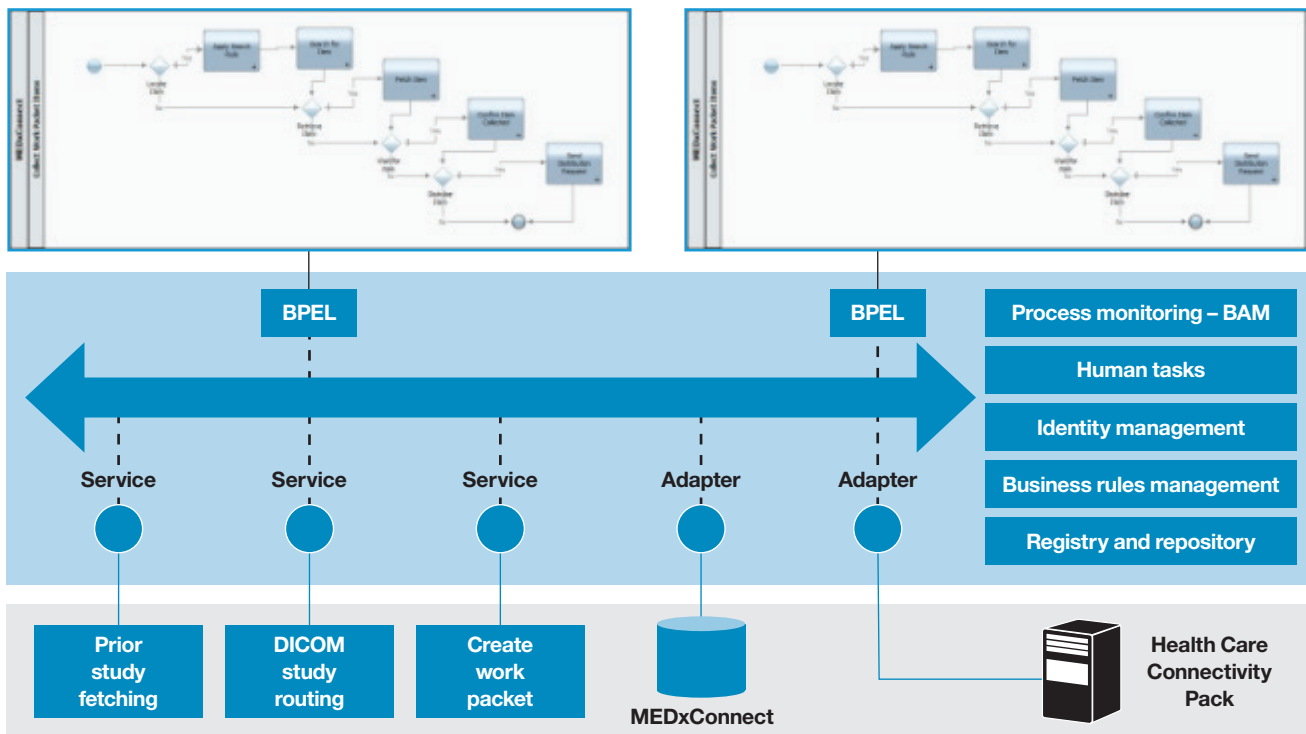
- **Higher productivity.** The solution from IBM and Compressus enables physicians to maximize time spent reviewing diagnostic information and minimize time formerly spent searching for prior reports and images, logging into different systems and adjusting different user interfaces. Workload-balancing optimizes the use of available resources, so organizations can deal with spikes in activity without the need to outsource overflow to a third party.
- **Organizational agility.** Establishing a reliable way to access content from any existing imaging or information system and deliver it to users quickly gives healthcare organizations a significant advantage. This vendor-neutral approach creates the flexibility required to bring in a new radiology group, integrate data from a new hospital or plug in new applications for regulatory compliance. Any technology will work, and any workflow will fit.
- **Better quality of care.** This solution gives physicians the confidence that they are seeing all of the pertinent patient information they need to make an accurate diagnosis. Over time, this improves quality of care and helps optimize patient outcomes.

Compressus and IBM: a closer look

Together, IBM and Compressus are redefining how to overcome the constant challenge of interoperability among existing and new technology systems in healthcare. IBM components of this solution may include:

- **IBM Initiate® Patient Hub for Master Data Management.** This software accurately matches and links patient identities to create a single view for use by EMRs, clinical portals and analytics.
- **IBM Cognos® Business Intelligence.** IBM Cognos enables healthcare organizations to gain new insight into the operation as a whole, capturing information and applying analytics to determine how best to improve patient outcomes, increase the number of accurate diagnoses and elevate overall quality of care.
- **IBM Business Process Manager.** This comprehensive BPM platform gives healthcare organizations visibility and insight to manage business processes.
- **IBM WebSphere® MQ.** This complete universal messaging backbone accelerates the flow of information across organizations.

Compressus and IBM solution architecture



The solution from IBM and Compressus enables physicians in every specialty to access information and images from any existing technology system quickly and easily, without the normal concerns about interoperability.



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- **IBM WebSphere Message Broker.** This lightweight, advanced enterprise service bus (ESB) enables the integration of data sources from a wide range of platforms across both service-oriented architecture (SOA) and non-SOA environments.
- **IBM Business Monitor.** Cross-process, cross-system business activity monitoring software provides realtime visibility and insight into operational processes, transactions and events.
- **IBM DB2®.** This database is optimized to deliver industry-leading performance across multiple workloads while reducing the cost of administration, storage, development and servers.

Compressus and IBM: intelligent integration

Compressus

Established in 2000, Compressus Inc. is a medical software company offering proven interoperability solutions to the rapidly growing healthcare IT market. Its products are designed to dramatically improve physician efficiency, reduce enterprise costs and increase patient safety. Compressus is particularly concerned with solving problems associated with integrating healthcare enterprises plagued by a lack of connectivity and interoperability among disparate islands of healthcare IT solutions, including clinical (EMR, HIS, RIS, PACS) and business (billing, registration, patient tracking), among others.

IBM

IBM works with healthcare organizations around the world, enabling them to deploy solutions using existing health IT investments and current environments at lower costs, without compromising flexibility and choice. IBM offers a comprehensive portfolio of software, services, and hardware for building, maintaining and extending IT-driven solutions in healthcare. Through the Health Integration Framework, IBM gains extensive experience providing healthcare-specific reference architectures. This framework also provides tools, transformation engines and application adapters built on acknowledged health industry standards to help cut development time and reduce costs.

For more information

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