



Highlights

- Integrate data and applications from disparate sources both within and beyond the facility
 - Support HL7 and non-HL7 messaging standards with a Common Information Model approach
 - Implement intelligent interoperability among hospital information and ancillary systems
 - Leverage the reliability of IBM technology proven in the field since 1997
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IBM Enterprise Service Bus for Healthcare

Enabling new levels of integration and interoperability for today's demanding hospitals and health plans

In hospital and health plan environments across the globe, the challenges and opportunities stemming from new data integration demands are tremendous. The need to share information across internal and external boundaries is growing dramatically in order to improve patient care and staff productivity. Solutions that enable hospitals and health plans to integrate data and applications from disparate clinical and administrative sources can drive greater operational efficiencies, enable more effective collaboration, and facilitate compliance.

This power to share data among applications is critical to being able to deliver quality patient, member and citizen care quickly and efficiently. It is the key to a nurse being able to view patient data collected at the patient's bedside without actually having to be at the patient's bedside to collect the data, or to a radiologist finding all the necessary patient imaging data in a single information dashboard, or to a pharmacist being able to integrate prescription records into a pharmacy system without transcoding issues or manual-entry errors. All these and many more capabilities are made possible by implementing an effective enterprise service bus (ESB) solution.

IBM's alternative to homegrown or legacy technology

Many hospitals and health plans today are struggling with outdated information technology: legacy data interface engines that are no longer being enhanced or supported, internally developed interfaces that cannot easily scale or support the same services or the increasing volumes, and legacy technologies that are not adequate to meet rapidly changing healthcare requirements as vendor systems and technologies fail to evolve. To meet this challenge, the IBM Enterprise Service Bus for Healthcare, built on the IBM Health Integration Framework, is the data communication and application interface answer for healthcare enterprises.



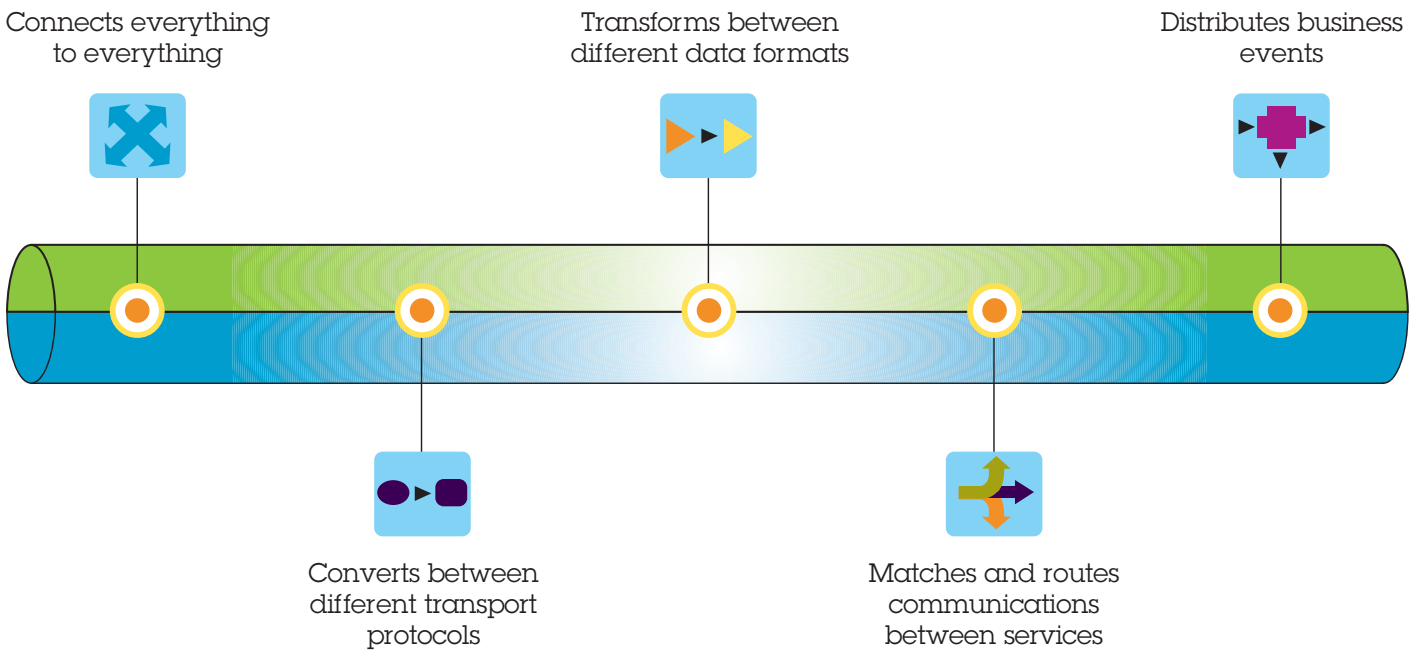
A powerful transformation and delivery engine, the IBM ESB for Healthcare can replace existing interface capabilities with a comprehensive solution that brings together the fast, flexible application interface functionality of IBM WebSphere® Message Broker with the powerful ESB messaging backbone provided by IBM WebSphere MQ. The IBM ESB for Healthcare provides an effective alternative to costly and disruptive “rip-and-replace” approaches, offering extreme reliability, scalability and a quick return on investment. By enabling easy application connections regardless of platform, network, or device, the IBM ESB for Healthcare gives healthcare organizations a seamless bridge to next-generation interconnectivity.

A powerful solution for application integration and messaging

WebSphere Message Broker provides the IBM ESB for Healthcare with the universal connectivity needed to provide a flexible and dynamic infrastructure for application integration, messaging and workflow. With support for a wide range of protocols and data formats, WebSphere Message Broker transforms and routes messages from anywhere, and to anywhere. WebSphere MQ then provides the messaging backbone to reliably deliver the information, leveraging the infrastructure provided by WebSphere Message Broker to transform messages, processes, files and events.

Agility and Savings Begin with Integration

The Enterprise Service Bus (ESB)



The IBM ESB for Healthcare is built on a healthcare-specific Common Information Model (CIM), which provides a message-based view of information as it passes from source application to destination application. This approach allows data structure standardization between the many disparate systems in a healthcare environment, speeding deployment and reducing the cost, time and risk of integration. With this approach, an incoming message (which may or may not be in an HL7 format) is mapped and translated to the CIM format. After the CIM-formatted message is mapped and transformed, it is automatically mapped to the destination message format.

As a contributing member of Health Level Seven International, IBM is able to provide industry-leading solutions that reflect a longstanding commitment to HL7 standards for sharing electronic health information. The IBM ESB for Healthcare supports HL7 (including versions 2 and 3) and non-HL7 message types. Created with use and reuse in mind, the IBM ESB for Healthcare features common procedures to map HL7 segments together with common flows for journaling, error handling and other tasks. It can also be extended for HIPAA EDI transactions using WebSphere Transformation Extender and the WebSphere Transformation Extender Pack for HIPAA EDI.

Built on a proven platform for full ESB capabilities

Based on proven IBM technology that's been in the field for more than a decade, the IBM ESB for Healthcare provides an application interface solution that includes the complete range of ESB capabilities. Healthcare organizations can leverage the IBM ESB for Healthcare to achieve new levels of information integration across the infrastructure. It provides support for all of the following ESB functions:

- Full functionality for application programming interfaces (APIs) for external applications
- Full functionality for database reads, writes and updates

- Support for HL7 v2, v3, Clinical Document Architecture (CDA), and Continuity of Care Record (CCR)
- Support for web services
- Compatibility with Message Queuing (MQ)/Java™ Message Service (JMS)
- Support for Hypertext Transfer Protocol (HTTP)/Simple Object Access Protocol (SOAP)
- Support for most commonly used interface specifications
- Direct support for SAP and Lawson enterprise resource management applications
- Business analytics support
- Support for electronic master patient index (eMPI)
- Support for Eclipse Foundation open-standards tooling

Building on this foundation, hospitals and health plans can use a wealth of other IBM healthcare technology solutions to interface with corporate and clinical applications, patient records and other critical applications to enable capabilities in areas such as healthcare analytics, clinical document sharing and clinical pathway management.

The IBM ESB for Healthcare: At work in the real world

The IBM ESB for Healthcare is a proven, healthcare-specific solution that is being used by hospitals, health insurance companies and government health agencies around the world. The following are just three examples.

A large not-for-profit healthcare delivery system

One of the larger faith-based, not-for-profit healthcare delivery systems in the United States—with 13 hospitals and 18,000 employees—needed to migrate from an outdated middleware/transformation platform to a stable new platform to facilitate the integration of a number of new hospital systems. The organization converted from the eGate interface

engine, originally provided by SeeBeyond and then Sun, to the IBM ESB for Healthcare. It was a timely move, given that support of the Sun product was ending after Sun was acquired by Oracle. As a result of the implementation, they were able to:

- Interface the organization's Epic, Cerner, and Siemens INVISION hospital information systems using an open, standards-based platform.
- Extend the functionality of the IBM ESB to all hospitals within the group.
- Introduce the IBM ESB's CIM data model as a means of standardizing data and providing a common definition of information for services around a service-oriented architecture (SOA).

As a result of the project's ongoing success, the organization is now exploring the expansion of its use of the IBM ESB to address other IT needs.

Basingstoke and North Hampshire NHS Foundation Trust

Basingstoke and North Hampshire NHS Foundation Trust (BNHFT) is a 450-bed hospital facility serving 300,000 patients in north and mid-Hampshire and West Berkshire, England. As part of a multiphase, long-term strategy for reducing clinical risk, increasing operational efficiency, and improving the patient experience, the hospital implemented the IBM ESB for Healthcare. This implementation enabled them to introduce a highly flexible interface engine into their IT infrastructure and allowed them to use the IBM ESB to define reusable, standards-based services.

Their first project using the IBM ESB was a care record summary that allows a clinician to see a single page view of a patient without having to log into multiple systems. As part of this project, the organization was able to:

- Create "portlets" within its portal architecture for patient demographics, medications, allergies, co-morbidities, images, previous hospital stays, order history and discharge forms.
- Create new, automatically populated electronic discharge summaries and clinical correspondence forms that can be provided electronically to primary care physicians.
- Reduce redevelopment time by having the IBM ESB convert portal and form requests from well-defined standards into the proprietary formats employed by BNHFT's applications.

Future phases will add more functionality to the portal, introduce healthcare analytics capabilities, enable clinical document sharing, and establish clinical pathway management—all building on the same infrastructure leveraging IBM ESB for Healthcare capabilities.

A global health enterprise

An integrated global health enterprise and one of the leading not-for-profit health systems in the United States had grown to include 20 hospitals and 400 doctors' offices and outpatient sites. Because of the organization's extraordinary growth over time, its internally developed middleware system was no longer capable of meeting its process requirements, but

replacing that middleware would have been cost-prohibitive. Instead they worked with IBM Premier Business Partner Summa Technologies Inc. to deploy a solution that paired IBM WebSphere Process Server with their existing custom middleware platform, thereby extending their opportunities for interface, integration and interoperability.

The organization found immediate use for the new solution—interoperability with the state immunization data system. This project met the criteria for “meaningful use” of IT resources, qualifying the organization for financial incentives while enabling the organization to:

- Use the state’s immunization records to track immunization data for patients coming in from other healthcare systems—quickly and without risk of misidentification.
- Prevent ill effects from overimmunization, for example, by determining whether a patient seeking emergency care for a puncture wound has already had a tetanus immunization.
- Improve care for geriatric patients—who are at greater risk for preventable illnesses such as flu or pneumonia—by checking their immunization status.

Based on this robust and secure integration platform, the IBM solution enables the organization to improve patient care, capture more revenue, and make better use of limited IT development resources.

IBM: Unparalleled product stability and industry leadership

IBM’s long history in providing stable solutions for application interface and integration, combined with its longtime presence and deep expertise in healthcare, make the IBM ESB for Healthcare a solid choice for hospitals, health plans and government health departments today. WebSphere Message Broker, the software at the heart of the IBM ESB, has been providing IBM customers with a stable, supported platform for application integration for more than a decade. While the viability of other healthcare ESB solutions is questionable after mergers or acquisitions among independent software vendors, IBM’s technology has maintained a constant and reliable presence, and IBM’s continued investment in the ESB for Healthcare demonstrates our commitment to the technology and to the industry.

IBM offers a broad range of products—hardware, software and services—designed to meet the needs of today’s healthcare enterprise IT infrastructures with reliability, scalability, connectivity and agility. Using the industry-leading WebSphere software stack (including connectivity to and interoperability with several IBM Rational®, IBM Lotus®, IBM Information Management and IBM Tivoli® software solutions), IBM can fulfill your middleware needs and enable new levels of interface, integration and interoperability within and among enterprises—without requiring a “rip-and-replace” approach—thus maximizing the value of current systems while minimizing the time to value for new technologies.

For more information

To learn more about the IBM ESB for Healthcare, please contact your IBM sales representative or IBM Business Partner, or visit ibm.com/software/industry/healthcare



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