

*IBM WebSphere Business Integration Collaborations  
for HIPAA Transactions Version 1.1.1  
IBM WebSphere Business Integration Collaborations  
Version 4.5*



# Solution Overview

**Note!**

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**Sixth Edition (December 2003)**

This edition applies to:

Version 1, Release 1, Modification 1, of *IBM® WebSphere® Business Integration Collaborations for HIPAA Transactions* (5724-H60)

Version 4, Release 5, of *IBM WebSphere Business Integration Collaborations* (5724-C12)

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## Solution overview

IBM<sup>(R)</sup> WebSphere<sup>(R)</sup> Business Integration Collaborations for HIPAA Transactions enables health care payers and providers to leverage process and application integration in compliance with the United States' *Health Insurance Portability and Accountability Act of 1996* (HIPAA). This legislation requires individual health care companies to comply with regulations governing the transfer of information between health care providers and payers. Meeting this regulatory requirement is a significant task for health care companies.

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## Key business requirements

HIPAA requires that health care payers and providers standardize patients' electronic health, administrative, and financial data, providing unique health identifiers for individuals, employers, health plans, and health care providers. Companies are now required to have a single set of data formats and protocols that will simplify administration and ensure the security of health records. Health care payers and providers must transform the way they perform electronic commerce, and failure to meet these U.S. government regulations can result in civil, and even criminal, penalties. To comply with HIPAA requirements, health care companies must make formal security and privacy practices and technologies an integral part of their established procedures and development planning.

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## Solution description

WebSphere Business Integration Collaborations for HIPAA Transactions, based on IBM WebSphere InterChange Server technology, is ideally suited for organizations seeking to comply with the *Health Insurance Portability and Accountability Act of 1996*. IBM's integration technology enables the interaction of different applications, facilitating the integration of front-end and back-end systems, and speeding the integration of merged departments and companies. WebSphere Business Integration Collaborations for HIPAA Transactions provides pre-built components designed specifically for provider and payer business processes.

This solution speeds development, implementation, and ongoing performance because it allows the interaction of multiple disparate applications, reducing costs of integration and product delivery. WebSphere Business Integration Collaborations for HIPAA Transactions can enable organizations to:

- Interconnect individual applications so they can share data and actions
- Interconnect multiple applications across enterprise boundaries (such as departments, divisions, or subsidiaries)
- Interconnect systems both internal and external to the enterprise

This solution's support for HIPAA allows each of these connections to be performed according to HIPAA-defined transaction standards, enabling insurance companies and other providers and payers to use these resources to more easily conform with U.S. government requirements and capitalize on those HIPAA standards. WebSphere Business Integration Collaborations for HIPAA Transactions also provides the ability to add new services quickly and easily.

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## Technical overview

WebSphere Business Integration provides a scalable framework that allows businesses to interconnect multiple disparate processing entities (such as applications, systems, and human resources) within an enterprise context. The solution connects data and processing entities in a way that fully leverages existing applications and integrates them with new applications. The result is total system exploitation, providing increased return on investment and business value to the enterprise.

WebSphere Business Integration Collaborations for HIPAA Transactions is based on IBM WebSphere InterChange Server technology, which provides pre-built integration components, including collaborations, connectors, and business objects, enabling swift integration of disparate applications. The foundation of WebSphere Business Integration Collaborations for HIPAA Transactions and other industry solutions is the IBM WebSphere InterChange Server (ICS). ICS is a scalable, reliable, and secure environment for business integration, providing the following benefits:

- A centralized, common view of enterprise-wide data and processes
- A comprehensive set of technical services
- A logical, distributed hub-and-spoke architecture
- Data and messaging format independence

For a detailed description of WebSphere InterChange Server, refer to the following documents:

- IBM WebSphere Business Integration Server Technical Introduction
- IBM WebSphere Business Integration Server System Implementation Guide

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## Types of integration

WebSphere Business Integration consists of two main types of integration:

- Information Connectivity and Integration
- Process Integration

*Information Connectivity and Integration (ICI)* is the coupling of heterogeneous application information and data. Connectivity between applications is a fundamental starting point for Information Integration solutions. As connectivity configurations and topologies grow in complexity, additional considerations involve the management of information and data delivery from one application to another (for example, routing rules and data transformation). ICI provides routing and data integration functionality. It routes its information between endpoints, leaving decisions on what actions to take next to the senders and receivers. ICI focuses on *wher* data is located and handles data normalization.

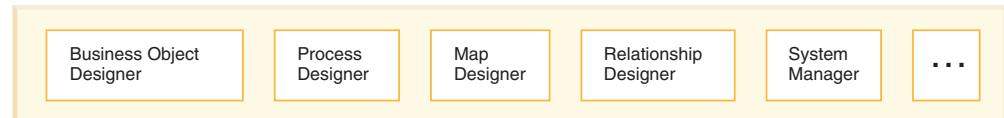
*Process Integration (PI)* is the implementation of internal and external business processes in a way that fully utilizes IT systems to add efficiency and flexibility within an enterprise. Process Integration includes functions required for traditional business process management solutions. Typically, PI solutions begin with a focus on processes internal to the enterprise and evolve to include processes that fully integrate external partners. This external integration requires functions that support business-to-business interaction management. PI focuses on *what* data is needed and *how* that data is used.

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## Solution architecture

With WebSphere Business Integration Collaborations for HIPAA Transactions, internal and external collaborative processes are utilized throughout the operations of an enterprise. As the diagram below illustrates, WebSphere Business Integration Collaborations for HIPAA Transactions provides the platform, connectors, and tools to integrate applications, data models, and process workflows, creating a more efficient, uniform, and responsive business environment, both within the enterprise and between the enterprise and its customers.

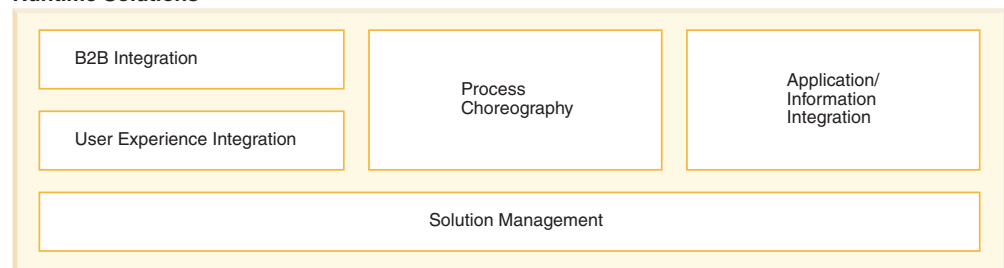
### Solution Studio



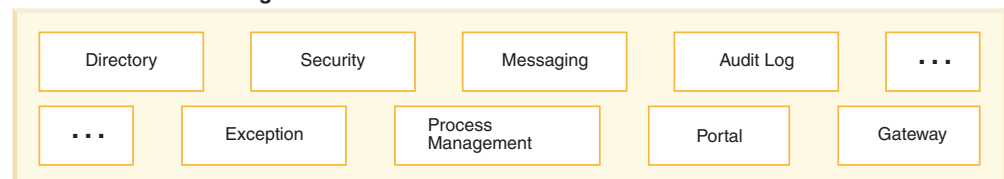
### Industry Libraries



### Runtime Solutions



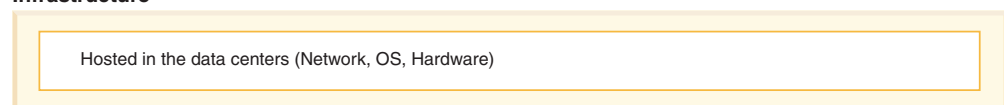
### Common Solution & Integration Services



### WebSphere Platform



### Infrastructure



The Solution Studio provides a common build environment for applications and solutions. The HIPAA Transaction collaboration within the Industry Libraries layer consists of processes, application adapters, message sets, business objects and so on. The collaboration is built on runtime solution components, including IBM WebSphere InterChange Server, that govern the interaction of logical components in any particular solution deployment. In this architecture, the ICI layer (contained within Common Solution and Integration Services) provides the connection between the business process definitions, located within the Runtime Solutions

layer, and the WebSphere platform and existing infrastructure, which hold the business functions operating on legacy systems.

ICI executes the state transitions, required by Process Integration (contained within the Runtime Solutions layer) to traverse the business processes that drive the integration architecture, in a way that allows these business processes to be reused. The primary goal of ICI is to provide loose coupling of the business functions to the business process so that either or both can be independently enhanced over time.

To achieve this goal, ICI must provide message routing and transformation services against a granular set of messages in the particular message model utilized between PI and ICI. This approach ensures that the interactions that leverage the coupling of the functions and the navigation are a normalized implementation of the message vocabulary, and as such, are independent of the systems providing the functions. By taking this approach, systems can be integrated without needing to be continually adjusted as other aspects of the topology are changed. This approach also simplifies the architecture because it positions all process choreography within the PI layer, so that it reflects all aspects of the business process.

Process integration requirements involving only automated processing are addressed using IBM integration technology in the form of layered collaborations.

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## Collaborations

IBM's integration technology provides the flexibility and scalability to implement a variety of e-business models, enabling companies to distribute business processes across the Internet, across different applications on local networks, or both. WebSphere Business Integration Collaborations for HIPAA Transactions utilizes the IBM WebSphere InterChange Server and industry-specific collaboration templates to allow different applications to communicate with one another. *Collaborations* contain the business logic that describes a fundamental business process, coordinating the functionality of business processes for different applications and enabling data exchange between them.

The current WebSphere Business Integration Collaborations for HIPAA Transactions solution contains a collaboration set - WebSphere Business Integration Collaboration for HIPAA Transaction - that can be adapted for use as the foundation of a company's HIPAA compliance effort. Each of the collaboration templates that make up WebSphere Business Integration Collaboration for HIPAA Transaction facilitates business process reengineering and addresses specific integration challenges.

### WebSphere Business Integration Collaboration for HIPAA Transaction

WebSphere Business Integration Collaboration for HIPAA Transaction is designed for insurance companies (and other health care providers and payers) that must build a process which maintains much of their existing infrastructure while taking advantage of the benefits offered by moving to HIPAA standards. The package includes 28 separate collaboration templates (a set for both the payer and provider perspectives) designed to accelerate claims processing, provide an accurate single view of data, ensure accuracy in data management, and enable an integrated view of patient records.



The collaboration templates allow key data elements to be maintained throughout the transactions that are occurring, while passing the business objects to collaborations which are custom designed to communicate with existing insurance applications. These collaboration templates enable long term maintenance and match transaction responses to earlier requests. Customers can utilize the collaboration template functionality “as is”, or use the collaboration templates as a framework around which they can build their own solution through custom coding.

## Collaboration task flow

The following table documents the WebSphere Business Integration Collaboration for HIPAA Transaction which includes 28 individual collaboration templates. The collaborations contain business logic that describes a specific business process:

*Table 1. HIPAA Transaction collaborations*

Collaboration	Main tasks
HIPAA270 HIPAA270Prov  Health Care Coverage Inquiry	<ol style="list-style-type: none"> <li>1. Enables a call to the ToValidation port to allow user-specific updates or data validation.</li> <li>2. Updates Inquiry data state table with unique provider and submitter IDs.</li> <li>3. Fails the flow if the provider and submitter IDs are not unique.</li> <li>4. Enables a Call to the ToODS Port to allow the user to capture additional data as required.</li> <li>5. Routes business object to subscribing collaboration objects.</li> <li>6. Enables logging of specific messages to the message log.</li> </ol>
HIPAA271 HIPAA271Prov  Health Care Coverage Inquiry Response	<ol style="list-style-type: none"> <li>1. Enables a call to the ToValidation port to allow user-specific updates or data validation.</li> <li>2. Checks Inquiry data store for match.</li> <li>3. If a match is found, updates the table as required.</li> <li>4. Fails the flow if the supplied provider or submitter ID do not match existing records in the database.</li> <li>5. Enables a Call to the ToODS Port to allow the user to capture additional data as required.</li> <li>6. Routes business object to subscribing collaboration objects.</li> <li>7. Enables logging of specific messages to the message log.</li> <li>8. Enables a call to the ToPrivacy port to record any specific privacy information.</li> </ol>
HIPAA276 HIPAA276Prov  Health Care Claim Status	<ol style="list-style-type: none"> <li>1. Passes through to subscribing collaboration objects.</li> </ol>

Table 1. HIPAA Transaction collaborations (continued)

Collaboration	Main tasks
HIPAA277 HIPAA277Prov  Health Care Claim Status Response	1. Passes through to subscribing collaboration objects.
HIPAA278Req HIPAA278ReqProv  Health Care Services Request for Review	1. Updates ServiceInquiry data state table as required. 2. Routes business object to subscribing collaboration objects.
HIPAA278Resp HIPAA278RespProv  Health Care Services Review - Response to Request for Review	1. Checks ServiceInquiry data state table for a matching request. 2. If a matching request is present, updates the table accordingly. 3. Routes business object to subscribing collaboration objects.
HIPAA820 HIPAA820Prov  Payroll Deducted and Other Group Premium Payment for Insurance	1. Passes through to subscribing collaboration objects.
HIPAA834 HIPAA834Prov  Health Care Benefit Enrollment	1. Passes through to subscribing collaboration objects.
HIPAA835 HIPAA835Prov  Health Care Claim Payment/Advice	1. Checks Claims data store for matching HIPAA837Resp entry. 2. If matching entry is present, updates Claims data store table as required, including enrichment. 3. If no matching entry is present, fails the flow. 4. Passes business object to subscribing collaboration objects.
HIPAA837Dental HIPAA837DentalProv  Health Care Claim Dental	1. Routes messages through containing valid TracerID/ProviderID PRV, Procedure Line Number REF data. 2. Does not route messages that are missing TracerID/ProviderID PRV/Procedure Line Number REF data. 3. Optionally, writes business object to Store port
HIPAA837Inst HIPAA837InstProv  Health Care Claim Institutional	1. Routes messages through containing valid TracerID/ProviderID PRV, Procedure Line Number REF data. 2. Does not route messages that are missing TracerID/ProviderID PRV/Procedure Line Number REF data. 3. Optionally, writes business object to Store port.

Table 1. HIPAA Transaction collaborations (continued)

Collaboration	Main tasks
HIPAA837Prof HIPAA837ProfProv Health Care Claim Professional	<ol style="list-style-type: none"> <li>1. Routes messages through containing valid TracerID/ProviderID PRV Procedure Line Number REF data.</li> <li>2. Does not route messages that are missing. TracerID/ProviderID PRV/Procedure Line Number REF data.</li> <li>3. Optionally write business object to Store port</li> </ol>
HIPAA837Resp Health Care Claim Response	<ol style="list-style-type: none"> <li>1. Ensures a matching TracerID/ProviderID row exists in the CLAIMIN state table.</li> <li>2. Routes messages through that contain TracerID/ProviderID data that matches a previously processed HIPAA837Inst, HIPAA837Prof, or HIPAA837Dental message in the CLAIMIN table</li> <li>3. Fails any message that has missing TracerID, ProviderID, ApplicationID, ClaimID, or Procedure Line Number data or non-matching TracerID/ProviderID CLAIMIN table data.</li> <li>4. Inserts a row in the CLAIMRSP state table for each ClaimID under each ApplicationID that includes the message type, current date/time stamp, and the total claim value.</li> <li>5. Inserts a row in the PROCRSP state table for each procedure under every ClaimID under each ApplicationID in the response message. This row contains a sequence number of 1, a ROWTYPE of R, a current date/time stamp, a Start Date of Service, an End Date of Service, a Procedure Code, a Value Claimed amount, and a line number that matches the original 837 message procedure line number</li> </ol>
X12_U1_837_Store Health Care Claim Professional Message Store	<ol style="list-style-type: none"> <li>1. Creates and retrieves X12_U1_837 data objects.</li> </ol>
X12_U2_837_Store Health Care Claim Dental Message Store	<ol style="list-style-type: none"> <li>1. Creates and retrieves X12_U2_837 data objects.</li> </ol>
X12_U3_837_Store Health Care Claim Institutional Message Store	<ol style="list-style-type: none"> <li>1. Creates and retrieves X12_U3_837 data objects.</li> </ol>

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## Business example

The following example shows a typical WebSphere Business Integration Collaborations for HIPAA Transactions business process. In this example, a provider submits a 270 request to a payer inquiring about patient eligibility. A Hipaa270 collaboration object validates the message, stores a minimal amount of operational and metrics data, and routes the message on to the payer.

**Note:** Not shown in this example, but included in any end-to-end process, the payer responds with a 271 response containing the requested information. A Hipaa271 collaboration object matches the response to the original request, updates its local data store table, and routes the message on to the provider.

**Business problem:** Provide correlation of 270/271 messages. Perform common validation processing.

**Business benefit realized:** Reduction of invalid message delivery. Collection of data on business metrics.

**WebSphere Business Integration Collaborations for HIPAA Transactions collaboration template utilized:** HIPAA270 Collaboration Template

### Process

1. Optionally, the collaboration object routes the message for external validation.
2. The collaboration object examines the message contents.
3. The collaboration object routes any messages containing valid Submitter ID, Provider ID, and Date and Time data.
4. The collaboration object records any pertinent data in a local data store.
5. Optionally, the collaboration object routes the message for logging to a user-maintained data store.

### Sample DTDs

The current version of WebSphere Business Integration Collaboration for HIPAA Transaction includes generic business objects (GBOs) that are designed to enable direct use by WebSphere Business Integration Adapters using the XML datahandler. Messages conforming to the supplied DTDs can be converted to and from the HIPAA Transaction GBOs without first being converted to Application Specific Business Objects and then utilizing maps.

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