JNbridge®
SPANNING JAVA & .NET

JNBridge Helps Large Pharmaceutical Company Eliminate Manual Recordkeeping for Increased Productivity and Product Accuracy

Business Challenge

Seamlessly integrate a pharmaceutical company's separate manufacturing and quality verification systems by using the Java Message Service supported in one system to connect to the BizTalk Server component in the other system, streamlining a previously manual product manufacturing and review process.

Solution

JNBridge's JMS Adapter for BizTalk provides seamless integration of Java Message Service (JMS) capabilities into BizTalk. With the adapter, BizTalk can be integrated into any existing JMS infrastructure — in this case, ActiveMQ.

"JNBridge made our lives far easier than if we had used a different approach to tie our ActiveMQ and BizTalk systems together … it just works."

Global Application Services Integration Lead

A large pharmaceutical company integrated two disparate systems using the Java Message Service: a third-party ERP and manufacturing execution system responsible for production control and inventory together with a proprietary application built using Microsoft technologies, including BizTalk. Automating the original paper-based control system ensured increased productivity and greater accuracy throughout the company's product review process that is responsible for the verification and release of production batches.

Situation

In the pharmaceutical world, great emphasis is placed on maintaining the integrity of a product and ensuring the accuracy of its composition. For this reason, one of the world's premier biopharmaceutical corporations engages in a complex review process to ensure that its production planning, materials inventory, and amounts of ingredients used all reconcile.

It all starts with the pharmaceutical company's internal organization that delivers manufacturing execution systems and other related plant-floor systems to the company's global manufacturing facilities. Based on Rockwell's PharamaSuite, the Manufacturing Execution System (MES) component is responsible for weighing all the ingredients prior to being used in a batch of a particular product, while the Enterprise Resource Planning (ERP) component records the amounts of ingredients used and keeps track for inventory purposes. Integrating the components in the suite is the Apache ActiveMQ™ JMS messaging engine.

The formulation side of the business is responsible for scaling recipes into production, planning and monitoring the manufacturing process, analyzing the results, and permitting the release of batches of product. Previously unautomated, the company built a system based on Microsoft® BizTalk® Server.

"We didn't find any other compatible answer. It's very solid, and once we installed and deployed it, no one knows it's there, which is a testament for any kind of integration piece."

Global Application Services Integration Lead

Challenge

Between the two systems, there existed a legacy paper document sign-off process. The MES and ERP production data, particularly the material usage and inventory numbers, required a chain of interdepartmental manual reviews and authorizations. The process was not only slow, it was susceptible to human error — transcription and hand-written copy errors followed by manual data entry — that triggered months-long batch reviews. Inventory sat in quarantine awaiting reconciliation of the paper trail. The stack of formal documents did not lend itself to objective analysis for verification purposes. Without an Electronic Data Interchange (EDI) solution between the two systems, the time-consuming human errors and intervention were proving costly.

Solution

Before any EDI solution could be implemented, the two systems needed to be connected, preferably using a supported integration point and mechanism. The Rockwell system already used Java Message Service — Apache ActiveMQ — not only as a messaging bus between its various components, but as a supported integration point. However, the Microsoft-based verification, quality assurance and release authorization system used BizTalk Server as its messaging and integration bus. File transfer between the two systems using the BizTalk File Adapter was an alternative, but did not provide the mandated level of reliability. JMS already provides reliable peer-to-peer transactional message delivery. In addition, the ActiveMQ implementation supported high availability/failover. It was obvious that using the intended JMS integration point was the best solution; however, that required connecting Microsoft BizTalk to a Java-based application — Apache ActiveMQ. The JNBridge JMS Adapter for BizTalk Server was the obvious — and only — choice.

Benefits

- *Installation and deployment was seamless.*
  The JNBridge JMS Adapter is a standard BizTalk Transport Adapter. It installs easily and quickly into the BizTalk Server stack and is immediately available from the BizTalk administration console. Configuration and connection is straightforward using standard properties. BizTalk developer-centric quick configuration guides target all the usual JMS implementations.
- *Eliminated any development costs.*
  Using the JNBridge JMS Adapter for BizTalk requires no extra developer time or costs to recode existing applications.
- *Leveraged existing supported mechanisms.*
  The third-party system already supported JMS, recognizing that messaging solutions provide the reliability, accountability and availability required when integrating a manufacturing floor. Integrating the Java-based MES to the Microsoft-based control system any other way would have been expensive, inelegant, and unsupported.

JNBridge
SPANNING JAVA & .NET

About JNBridge:

JNBridge has made seamless and cost-effective Java and .NET interoperability a reality since 2001. The company's award-winning bridging technologies, JNBridgePro and JMS Adapters for .NET and for BizTalk, enable rich cross-platform communications anywhere, so businesses can focus on innovation, not on solving interoperability issues. More than 600 organizations around the world rely on JNBridge, making it the most popular bridging solution in the industry. To learn more, please visit www.jnbridge.com.

JNBridge, LLC
info@jnbridge.com
www.jnbridge.com