



Small ISV Wins Big Business

4th Story

.NET Trading
Algorithms

JNbridgepro

Java
API

Business Challenge

Adapt high-performance, real-time .NET-based trading algorithms to support a large bank's automated trading activity through the bank's custom Java API.

Solution

Use JNBridgePro to easily consume the Java API and call it from the .NET applications just as if the API were written in .NET.

"The time to market advantage was EXTREME. I estimate the bridging part of the project took 10% of the time it would have taken without JNBridge. JNBridgePro paid for itself by noon of the first day."

*Philip Clem, CTO
4th Story*

Situation

The financial services industry relies on sophisticated algorithms to manage trading opportunities and risk. In the foreign exchange market, feeds generate offers that tick by in real time, so the trading application has to make incredibly fast decisions about which ticks to hit in order to book a trade. Millions and millions of dollars are at stake, so the supporting systems must be airtight and without down time.

In this highly competitive environment, investment banks are always looking for new wrinkles in trading algorithms. A large international bank turned to 4th Story to provide tools that capture opportunities via real-time operation of automated algorithmic strategies, including live visibility into decision logic, real time positions, and operational workflow.

Challenge

4th Story is an ISV (independent software vendor) whose solutions and software development expertise are based on Microsoft's .NET Framework. As part of adapting their .NET-based algorithmic solutions to support the bank's automated trading activity, 4th Story had to tie into the bank's host system, which is based on a custom Java API. Offered internally to the bank's traders and externally to its clients, this API exposes real-time trading opportunities to subscribers of the platform via enriched market data.

"When the bank first asked us to help, we knew their recommended Java-based middleware solution wasn't going to work very well" said Philip Clem, CTO of 4th Story. "Stability and throughput speed would be key to the success of the project, and the bank's proposed middleware solution wasn't up to the task."

The central requirement was for a system that would stay up for the entire trading day while handling potentially large amounts of real time data, including market data, orders, and order executions, plus supporting concurrent real-time integration with the algorithmic trading logic. The foreign exchange market trading day is a full 24 hours, and the tick throughput can come in high frequency bursts. The system could rarely be brought down for maintenance, and also required sufficient headroom for growth. This drove 4th Story to focus on a reliable high-performance, proven solution. They had to use the bank's existing Java based API, and integrate it with their algorithmic host that was implemented in C# on the .NET Framework. So the use of a powerful bridging solution was in order.

About 4th Story:

4th Story is an independent software vendor that provides automated trading software to banking institutions, hedge funds, and broker-dealers. The company's products give the user the power to rapidly test and implement automated algorithmic trading strategies that are arbitrarily and quantitatively complex.

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JNBridge connects Java- and .NET-based components and applications together with simple-to-use bridging tools and adapters that remove the complexities of cross-platform interoperability. JNBridge provides fast access to anything Java from anything .NET and anything .NET from anything Java, including JMS, EJBs, J2SE, J2EE, .NET APIs, WinForms, or BizTalk Server. Over 300 unique businesses in 37 countries use JNBridge's solutions for interoperability in industry applications ranging from financial services to media, manufacturing and healthcare.

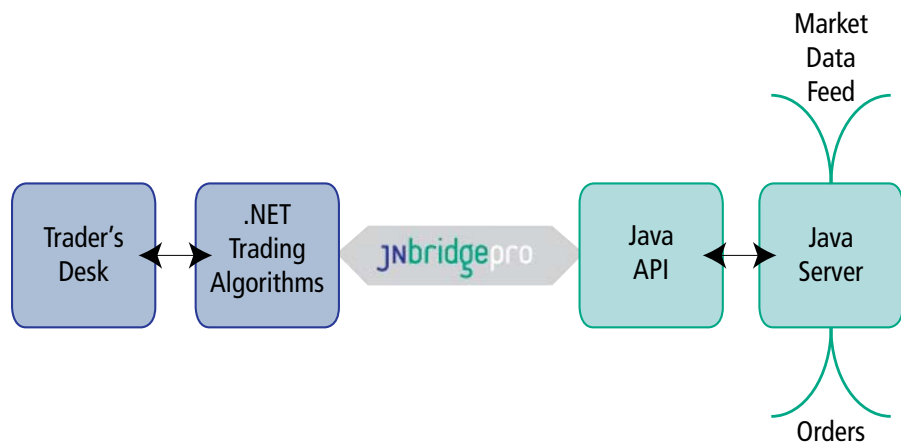
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Solution

"The bank recommended a Java-based open source middleware solution to act like a bridge. I knew it was a non-starter. Based on my previous experience with JNBridge four years ago, I went there directly."

With JNBridgePro, 4th Story was able to easily consume the Java API and call it from their .NET applications just as if the API were written in .NET. For the best performance, 4th Story used JNBridgePro's shared memory feature, which allows the Java code and the .NET code to run in the same process. Shared memory is set up in a single configuration file, and launched with a single action. "Simplicity in the world of trading is a good thing" added Philip Clem.

"The coverage in bridging the Java API to .NET was 100% complete, including the wrinkles involved with synchronous acquisition of market data, which can be a tricky thing to implement. JNBridge offers a clean bridging solution for Java based event listeners. When building adapters for order submissions, we usually expect an asynchronous callback for order fulfillment. However, the traders hit exact quotes, so they need a synchronous call to know whether or not the order was successful, or if it was too late to hit the quote. This is a somewhat unusual requirement, and the performance cost is quite high, but JNBridgePro was able to handle it with very little overhead. The overall package supports multi-threading, so it will still scale to meet the requirements."



Benefits

"We first encountered JNBridgePro about four years ago. The addition of the shared memory feature since we last looked at was one key to our success with this project. There weren't any bumps in the development cycle, and there was no question of JNBridgePro's ability to understand the Java API. Using JNBridgePro helped us offer a solution in record time, and the client was very pleased."