



SPANNING JAVA & .NET

Code Redevelopment Eliminated by Deploying Java API to VBA/.NET Developers

Swiss Re

Java
Actuarial API

JNbridgepro

Excel
Applications

Business Challenge

Enable actuaries all over the world to incorporate a common numerical analysis Java API in their local market Excel-based applications in order to eliminate the need for local code reinvention and duplication.

Solution

Use JNBridgePro to make the Java API directly callable from .NET. Actuaries can directly access complex numerical functions in the Java-based Swiss Re Actuarial Library from their Microsoft Excel coding environment. Resulting applications now deliver consistent and repeatable results based on the corporate knowledge embedded in the API while tailoring solutions to local markets.

“Giving actuaries working in local markets access to key functions from their VBA/.NET environments changed the way they develop applications. Without the need to reinvent critical code, they now can focus on integrating local market conditions for more accurate analysis.”

*Johannes M. Hug, Ph.D.
Director, Information Technology,
Swiss Re*

When Swiss Re needed to deliver a numerical analysis Java API to actuaries who code Excel applications, they turned to JNBridge. By making the API available for local development, actuaries no longer need to reinvent core functionality. The result—no more duplicate coding effort, shorter development times, improved localization, and more consistent business results.

Situation

Insurance underwriting relies on complex analysis to make critical business decisions — including reviewing financials, valuing potential losses and mitigating risk. At Swiss Re, a leading and highly diversified global reinsurer, these analyses are performed by market-savvy actuaries who chart and analyze probabilistic data using a proprietary library containing hundreds of classes of numerical and business functions that capture reinsurance knowledge and perform key computations.

Swiss Re has spent considerable resources in developing the Swiss Re Actuarial Library (SAL), its proprietary Java-based API that contains rich numerical analysis functionality. Readily available to actuaries working on corporate enterprise applications at the home office, it was not accessible to far flung actuaries in local markets. Local actuaries kept reinventing the wheel by writing their own logic, wasting time and effort creating and testing more limited function sets.

As Thomas Kruppa, Director, Products at Swiss Re, explains, “A great deal of business knowledge is embedded in the API — cost models, internal overhead and profit margin calculations, and critical numerical and business functionality — content local users might not think to create.” Yet the API cannot address every market or rapidly changing local conditions. “Local markets have unique characteristics that our Java-based enterprise library does not address. That is why many of Swiss Re’s actuaries develop standalone Microsoft Excel applications that are tailored to local markets.”

The Need — Make the Java API Available to Excel Users

With SAL inaccessible to VBA/.NET users, tailoring solutions to local conditions required actuaries to reinvent core functionality and create their own numerical analysis software. “Time to market and accuracy are key in our business”, said Johannes M. Hug, Ph.D., Director, Information Technology at Swiss Re. “We needed to stop reinventing code and find a way to make the SAL math library available to actuaries working in VBA/.NET environments.” While porting SAL to .NET was considered, JNBridgePro provided a superior solution by making the Java API available to Excel users. Swiss Re just needed to add a thin, generic COM layer which they quickly developed during the evaluation phase. Actuaries could then take direct advantage of the sophisticated functionality in SAL — without duplicating the code base or spending time recreating business-critical functionality, and the deployment team was able to quickly deliver a full solution.

Delivering APIs to the Desktop

JNBridgePro is an interoperability bridge between Java and .NET that simplifies the issue of cross-platform integration. Using proxy generation tools supplied with JNBridgePro, the Swiss Re team built proxy classes for the SAL API and distributed them to actuaries working with VBA/.NET applications. Each actuary received a copy of the proxied API, enabling them to access key SAL functions from their Excel development environment just as if they were local, native library calls. Figure 1 shows an Excel user accessing the *Benktander method* functions implemented in SAL directly from a Microsoft Excel spreadsheet.

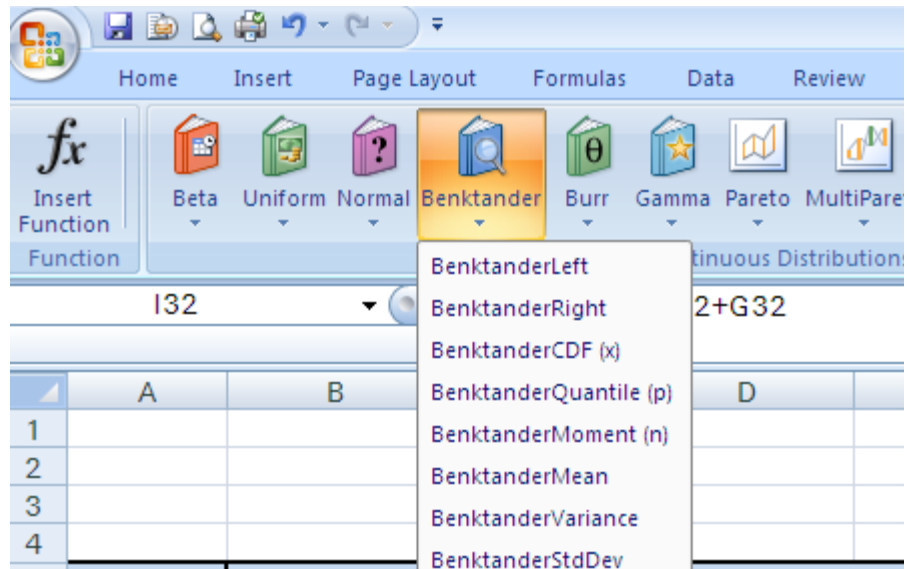


Figure 1. Actuaries now access SAL library routines directly from VBA/.NET applications.

Benefits

Using JNBridgePro, Swiss Re was able to:

- *Integrate the solution quickly with a simple deployment.* JNBridgePro quickly made SAL available to users. Dr. Hug estimates it took only a few weeks to validate the proxied Java API and distribute it directly to each user's desktop.
- *Gain consistent, repeatable results without reinventing code.* By exposing the Java API, VBA/.NET developers can take advantage of an extensively tested, common code base to ensure greater numerical accuracy and eliminate errors. Users no longer need to code functions in Visual Basic or C# and test them to ensure they return the same answer with the same precision as those provided by SAL. The result is centralized numerical and business intelligence that can be accessed by all actuaries to deliver consistent and repeatable results.
- *Develop local applications faster.* Access to powerful routines lets users take advantage of sophisticated functionality that is unavailable when creating code from scratch. As a result, actuaries can spend their valuable time developing market-specific logic, and build localized solutions faster.

Get Started

To solve the complex problem of Java and .NET interoperability in your organization, download a free trial copy of JNBridgePro from www.jnbridge.com.

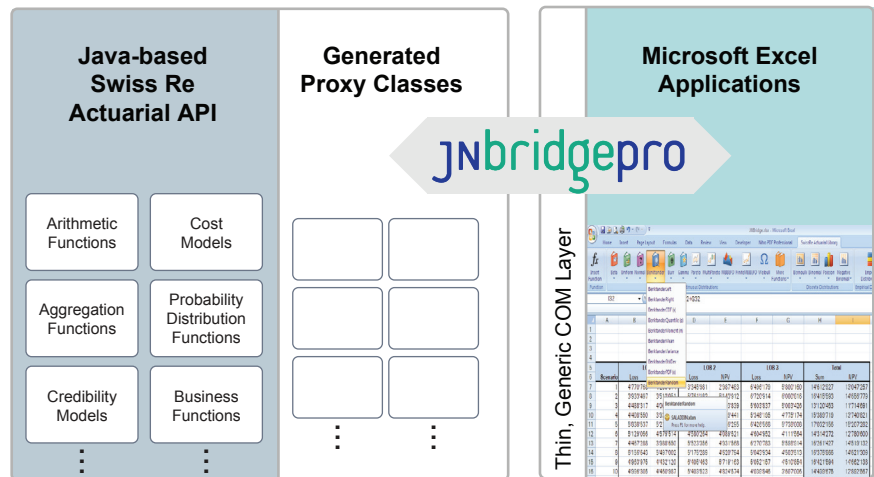


Figure 2. The Java API is distributed to the desktops of actuaries in local markets.

About Swiss Re

Operating in more than 20 countries, and with a presence on all continents, Swiss Re is one of the world's largest and most diversified reinsurers.

Swiss Re



About JNBridge

With more than 450 customers in 40 countries, JNBridge is a leading provider of Java and .NET connectivity solutions that solve the complex issues of cross-platform interoperability.

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