



SPANNING JAVA & .NET

## JNBRIDGEPRO CASE STUDY

### Istante Software Uses JNBridgePro to Deliver a C#-based .NET Product to Java-based UNIX Platforms

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*Update: Istante Software has been acquired, and the Istante RTS product is now Oracle BAM(Business Activity Monitoring).*

#### Challenge

Take an existing product written in C# that runs on the .NET platform and create a Java version for Unix platforms.

#### Solution

Port the back-end data server to Java, then use JNBridgePro to provide the necessary fast and fine-grained interoperability between C# and Java.

JNBridgePro was chosen for its ease of use and complete functionality including: pass by value, reference, and the support of mapped collections.

#### Results

JNBridgePro enabled Istante to quickly deliver a C#-based .NET product to customers running Java-based UNIX systems.

The result is a stable, high-performance system that meets the demands of real-time event-driven enterprises.

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*“With the use of JNBridgePro, Istante Software was able to quickly develop an interoperability path between C# and Java that was both fine-grained and provided excellent performance during runtime.”*

**- Tal Broda  
Chief Architect  
Istante Software**

**Istante Software** provides the Istante Real-Time Suite (Istante RTS), the world's first complete real-time information delivery solution for real-time enterprises. The Istante RTS combines a new, event-driven, memory-based architecture with a series of highly developed tools for real-time data integration, monitoring, alerting, delivery and analytics that allows any organization to deploy real-time information and analytics quickly and successfully.

#### Challenge

As part of a change in business strategy, Istante needed to offer two versions of its product: a Java version for UNIX-based platforms and the original .NET version for Windows platforms. This move was prompted by a desire to expand the installed customer base for the Istante RTS Server to both Linux and Solaris. As a complete conversion or code rewrite didn't make business or practical sense, Istante needed an alternative that allowed for code reuse, provided high performance because of the large amount of real-time data being displayed, enabled the existing front-end code to stay stable, and offered a sufficiently fine-grained degree of control.

#### Evaluation

The Istante Software development staff initially tried looking for alternatives that would enable .NET code to run directly on UNIX, but found that the available solutions were, for many reasons, unacceptable. The team also considered Web services, but came to the conclusion that web services were too slow and would not provide the tight coupling necessary for “true” integration between the C# and Java code. Their next step in the search for a good interoperability solution was to investigate bridging solutions; Istante evaluated both JNBridgePro and a competing product. Tal Broda, Chief Architect at Istante Software said “JNBridgePro came out the clear winner because of its ease of use, superior cross-platform exception handling, and provisions for multiple methods of parameter passing.”

#### Implementation

The first stage was to convert the Istante Active Data Cache (ADC) Server to Java. The Java/.NET bridge would then sit between the ADC Server and the existing ADC API, which was kept as a C# façade between the ADC Server and the rest of the system, including the Real-Time Suite front end and the Enterprise Link back end. JNBridgePro was then used to generate proxies for the Java code which would be accessible from the .NET-side API. The architecture is shown in Figure 1.

*“JNBridgePro is truly a complete Java/.NET bridging product and we exercised its functionality to the fullest extent.”*

**- Tal Broda  
Chief Architect  
Istante Software**



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JNBridge supplies software developers with a full line of Java/.NET interoperability tools that enable fast and seamless integration of pure Java code with Microsoft .NET components and applications. JNBridgePro offers full two-way interoperability between Java and

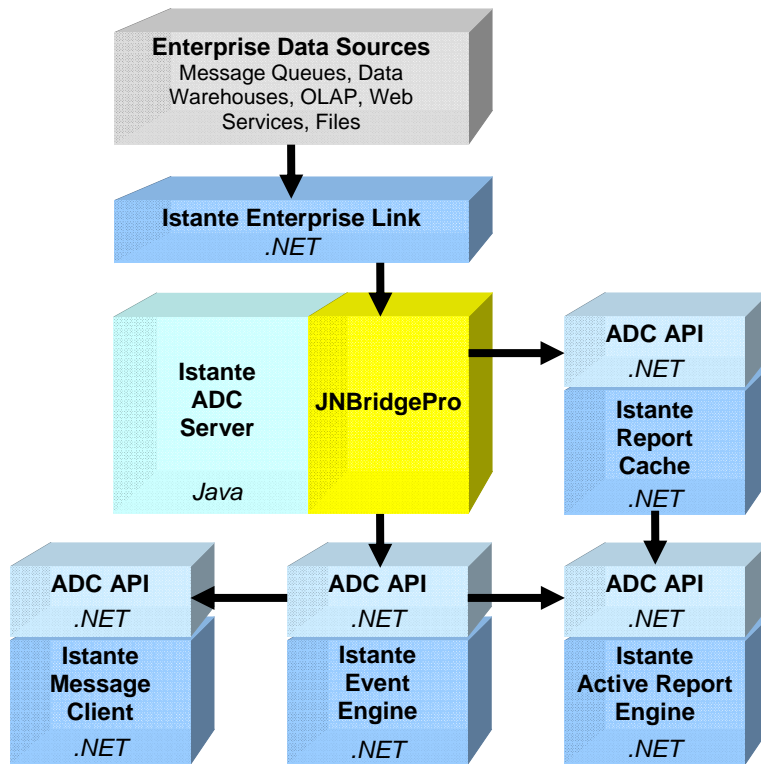


.NET with an easy to use proxy generating tool. JNBridge’s customers include ISVs, system integrators, financial institutions, and healthcare solution providers.

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**Istante Software** provides innovative real-time reporting and information software that empowers a broad range of decision-makers with the real-time, relevant, information-rich content they need to take the right action at the right time. By combining the latest in business intelligence and communications technology, the Istante Real-time Suite fuels the growth of the Real-Time Enterprise and enables mobile access to corporate systems and information for up-to-the-second reporting anytime, anywhere.

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**Figure 1: Istante Architecture Overview**

The Istante software solution includes passing objects by reference and value. Mapped collections were used extensively and saved a large amount of time and effort since collection classes such as `java.util.HashMap` are directly mapped to a `System.Collections.HashMap`. Mapped collections also increased the efficiency of the resulting solution. In addition, since the application is interactive, JNBridgePro’s ability to allow callbacks between the Java and .NET side was key to the success of the implementation. Other time-saving features of the JNBridgePro product included the graphical proxy generation tool.

“JNBridgePro is truly a complete Java/.NET bridging product and we exercised its functionality to the fullest extent” said Tal Broda. “A full unit testing suite (based on NUnit) has been used to extensively test the ADC API, the JNBridgePro interoperability solution, and our new Java-based Active Data Cache Server.”

## Conclusion

“With the use of JNBridgePro, Istante Software was able to quickly develop an interoperability path between C# and Java that was both fine-grained and provided excellent performance during runtime” said Tal Broda. “If we would have used web services, the system would not perform as it does today and there is no way we could have written a similar solution in such a short time frame. We expect to use JNBridgePro for additional interoperability needs in the future and are planning on using the new shared-memory communication channel in version 2.1.”