

### **Java and .NET**

Communication problems within heterogeneous environment that includes the .Net and Java applications may result in a number of problems. One of the solutions is to use JNI (Java Native Interface) that enables to control Java virtual machine using C/C++ languages. As a result, it is possible to create the .NET CC++ connection. Such a solution allows to achieve very high efficiency that is impossible to reach when using web services.

### **Delphi and .NET (SOAP interoperability)**

One of the challenges we have faced up to is a communication between a client application that was written in unmanaged Delphi code and a server working on .NET platform. We solved the problem using the SOAP protocol and web services. An additional difficulty occurred to be an integration and standardization of data transferred between these platforms (e.g. the problem of nullable value unsupported in Delphi). The aim was to synchronize data between the client and the server (the cache refreshing).

### **Java and C/C++**

Communication between C/C++ and JAVA applications is not direct. It is enabled by unified communication protocols available both in Java and C/C++. The XML-RPC and JSON protocols are used also because they are implemented in many environments. Additionally, usage of one more programming language (e.g. Perl does not require changes in an existing code).