The Java Connector (Jco), Enterprise Connector

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The Java Connector (Jco)

The Jco layer was developed to provide efficient access to R/3 systems from java via RFC on all supported SAP platforms. The JCo interface was not typed but provided a generic interface at the level of RFC semantics. The JCo layer tolerates changes in the interface structure because fields are accessed through a named lookup, rather than a simple offset and length based on runtime metadata. Nevertheless the only metadata available was restricted to what the RFC layer provided. This did not include ABAP dictionary metadata such as label texts or ValueSets. Also the JCo layer implemented a programming model similar to JDBC which proved quite complex due to structure nature of RFC module calls and their various structured parameters.

we use JCO only in Webdynpro applications - for creation adaptive models and jco.clients from webdynpro applications. From java application you can also retrieve properties of such jco destinations - but not all - password and user you can’t retrieve.

The Enterprise Connector

In order to simplify the use of the JCo layer, a typed interface containing a 1:1 representation of the RFC function and all of its structures and tables was required. This was provided by Enterprise Connector Framework (formerly known as the Java Connectivity Builder).

This layer was built on the JCo layer but worked on the basis of a static interface definition created via the import of metadata at design time. This meant that within the external program there was a static representation of the RFC module interface containing only the offset, length and primitive data type of each field as it was defined at the time the interface was imported. The byte stream exported from the SAP system was then subdivided using this hard coded offset and length information.

This type of interface seriously restricted the flexibility of the external program because it had no access to the information in the ABAP directory. This produced the following limitations:

ABAP Dictionary fields and data structures could only be represented by primitive data types.

No support for standard extensibility features found in the ABAP Dictionary such as .APPEND structure.

No support for different versions of dictionary structures found in different versions of SAP systems.

No availability of interface metadata at runtime.

The JCo layer contains the ability to access any part of the interface structure, but since the Enterprise Connector only held a static definition of the interface, it is made no use of this functionality and was therefore unable to react to modifications that took place in the interface after design time.

The SAP Enterprise Connector is a development tool that provides help classes and RFC function module method calls for Java applications. These method calls and help classes are called Java Proxy.