

IT/98 – 0425 X

NCITS  
Information Technology Industry Council (ITI)  
1250 Eye St. NW, Suite 200  
Washington, DC 20005



## **A PROPOSAL FOR NCITS FAST-TRACK PROCESSING**

### **SQLJ: Java Stored Procedures in SQL and SQLJ: Java Data Types in SQL**

#### **1. Source of the Proposed Standard**

1.1 Title: **SQLJ: Java Stored Procedures in SQL**

and

**SQLJ: Java Data Types in SQL**

1.2 Date Submitted: 18 September, 1998 — 1998-09-18

1.3 Proposer(s):

IBM Corporation  
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San Jose, CA 95141

Informix Corporation  
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Menlo Park, CA 94025

Micro Focus, Inc.  
2465 East Bayshore Road  
Palo Alto, CA 94303

Microsoft Corporation  
100 Microsoft Way  
Redmond, WA 98052

Oracle Corporation  
500 Oracle Parkway  
Redwood Shored, CA 94065

Sybase, Inc.  
6475 Christie Ave.  
Emeryville, CA 94608

Compaq Computer Corporation  
19191 Vallco Parkway  
Cupertino, CA 95014

## **2. Description of the Proposed Standard**

2.1 Type: This is a new standard

2.2 Definitions of Concepts and Special Terms

None beyond those that are associated with Database Language SQL and programming language Java.

2.3 Proposed NCITS Technical Committee for Interpretations and Revision: H2

2.4 Estimated Useful Life of Standard or Technical Report

Based on related language standards, the estimated useful life is at least ten (10) years and probably twenty (20) years; however, because of the highly dynamic nature of this technology, revisions and/or amendments are to be expected periodically.

## **3. Business Case for Developing the Proposed Standard or Technical Report**

3.1 Description:

The Proposed Standard specifies the way in which procedures and functions written in the Java programming language can be stored in SQL databases and invoked from SQL language, and ways in which Java classes can be used as data types in SQL. The Proposed Standard has two parts, which are proposed for processing asynchronously from one another.

Part one of the Proposed Standard specifies SQL extensions for installing Java classes in an SQL system, for invoking static methods of Java classes in SQL as SQL functions and stored procedures, for obtaining specified output values of parameters, and for returning SQL result sets.

Part one of the Proposed Standard specifies

- New built-in procedures that manage Java classes in an SQL system
- A new built-in schema to contain built-in Java procedures and functions in an SQL system
- Enhancements to SQL DDL statements to support the mapping of Java routines to SQL naming conventions

Part two of the Proposed Standard specifies SQL extensions for using Java classes as data types in an SQL system.

Part two of the Proposed Standard specifies

- Enhancements to SQL DDL statements to support the mapping of Java classes to SQL data type naming conventions
- A persistent data capability for Java, which one can use to store data in SQL that is created and processed (mainly) in Java. The advantage of part two's facilities over plain SQL facilities is that applications don't have to map the Java objects into scalar SQL data types, or to store the Java objects as untyped binary strings.

### 3.2. Existing Practice and the Need for a Standard:

Java is the programming language of choice for Internet and Web applications and has the fastest-growing user base of all programming languages.

Database language SQL is implemented by all major database management systems and has been an American National Standard and an International Standard since 1986; it has been replaced twice—and is due to be replaced again very soon—with enhanced versions. Recent enhancements to SQL (dpANS X3.135.10, currently being processed by NCITS and ANSI) support applications written in Java with embedded SQL statements.

However, application requirements go further and include the need to utilize code written in Java within SQL database systems and from SQL statements. All major database system vendors have collaborated in the development of a standard way of responding to this requirement. The Proposed Standard implements that collaboration.

### 3.3. Implementation Impacts of the Proposed Standard

#### 3.3.1 Impact on Existing or Potential Markets:

There are *no* negative impacts on existing markets envisioned as a result of the Proposed Standard. Indeed, significant positive impacts are expected, as a large range of applications will be able to manage their SQL data more effectively through the use of Java code.

#### 3.3.2 Costs and Methods for Conformity Assessment:

The existing SQL conformance test suite (originally written and maintained by NIST, but now in the public domain and used by all SQL database system vendors) can be enhanced at reasonable cost to cover conformance assessment of facilities specified in the Proposed Standard.

### 3.4 Legal Considerations

3.4.1 Patent Assertions: The Proposers believe that there are no relevant patents associated with the technology specified by the Proposed Standard.

#### 3.4.2 Dissemination of the Standard or Technical Report:

The Sponsors will provide the NCITS Secretariat with a PDF file of the Proposed Standard for dissemination to the committee and for public review. The Sponsors retain copyrights until the Proposed Standard is approved as an American National Standard, at which time copyrights will be transferred in accordance with NCITS policies.

## 4. Related Standards Activities

4.1 Existing Standards: ANSI X3.135-1992, *Information Systems — Database Language — SQL*, is closely related and comprises a prerequisite standard

ANSI X3.135.10-199x, *Information Systems — Database Language — SQL — Part 10: Object Language Bindings (SQL/OLB)*, is similarly closely related, although it does not comprise a prerequisite for the Proposed Standard

#### 4.2 Related Standards Activity:

The Sponsors are not aware of any related domestic or international voluntary consensus standards projects related to the Proposed Standard other than those cited in 4.1 above.

#### 4.3 Recommendations for Coordinating Liaison:

None.

#### 4.4 Recommendations for Close Liaison:

NCITS J22 Java Study Group TAG may be appropriate for Close Liaison

## 5. Materially Affected or Interested Parties

The Sponsors believe that all parties involved with providing and using Java classes and Java routines in SQL would be interested parties. This encompasses a very large range of business type and related applications, systems, and solutions.

— End of Proposed Project —