Reality
SQL Features

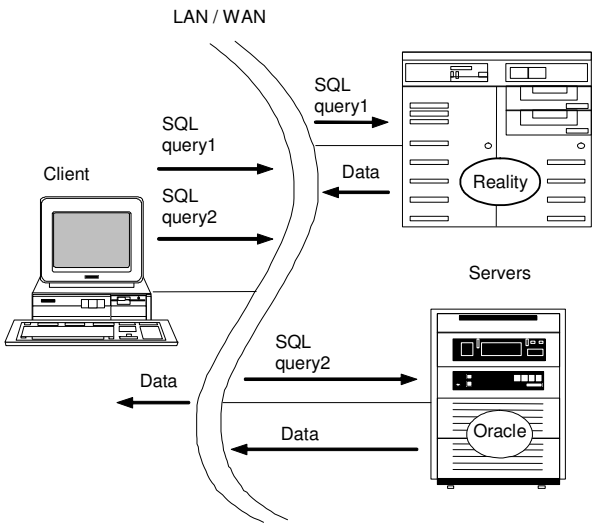
Introduction

SQL (Structured Query Language) is a data management language that has become the established standard for access to information on a database management system (DBMS). Reality supports two interfaces for access to Reality as an SQL data source: ODBC[*1] and JDBC[*2].

ODBC

ODBC (Open Database Connectivity) is a Microsoft Windows and open standard interface that allows applications to be independent of the DBMS from which they derive their data. ODBC-compliant applications use SQL to access databases that support the ODBC interface. Applications supporting the ODBC interface for SQL include all of Microsoft's Office packages and Cognos' business reporting tools, Impromptu and Powerplay. There are also numerous other applications and reporting packages from the MultiValue and relational sectors.

COM+/MTS (Microsoft Transaction Server) is supported for management of distributed transactions. This enables Reality to transparently participate in distributed transactions coordinated by Microsoft's Distributed Transaction Coordinator (MSDTC) via ODBC and XA interfaces.



JDBC

JDBC is similar to ODBC, but is a standard API – Application Programming Interface) for applications, applets and servlets written in Java.

The advantages of these interfaces include the application's ability to extract data from different types of database, and compatibility with nearly all DBMS as data sources. This permits a single spreadsheet, for example, to comprise data from one or more independent databases, of different types, on different hosts.

Structured Query Language

SQL is a data management language that is the established standard for information retrieval from databases.

The database is defined as a set of tables with rows and columns defining fields that comprise the stored information. SQL uses an English language like syntax to form commands. Commands consist of the names of tables and columns together with values and SQL keywords. The SQL processor finds and returns the information requested.

With ODBC, applications can automatically generate SQL queries based on point-and-click operations that select the data needed. The user therefore generally requires no SQL knowledge. A limited amount of SQL knowledge is needed by the administrator of the database to perform routine maintenance tasks.

The JDBC interface to Reality consists of a package of Java classes. These classes can be instantiated by a Java application, applet or servlet and their methods can be called to connect to a Reality database, send requests to the Reality SQL server and receive the results.

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Client / Server Model

Reality supports ODBC and JDBC via a client/server model.

With ODBC, the client is an ODBC-compliant application running on a system using an ODBC driver provided by Northgate. This driver communicates with a data source that is a Reality DBMS.

With JDBC, the client is an application, applet or servlet written in Java. The client can run on any platform that supports a Java Virtual Machine (JVM)

In both cases, the connection between the client and the Reality server uses the TCP/IP communications protocol, over a local or wide area network (LAN or WAN).

Reality SQL Database Access

Reality includes a server that accepts SQL queries from the Northgate-supplied driver on the client and returns data, or updates the database or its definitions, as required. The Reality database can belong to an existing application or can be created specifically for SQL access.

The database contents are defined in an SQL catalog. Existing Reality applications may already have catalogs. If not, utilities are provided to create the catalog based on English dictionaries, with some help from a user with application knowledge. These utilities can also be used for subsequent maintenance of the catalog.

Alternatively, a client application may automatically define the SQL catalog it requires when creating an entirely new table.

SQL features supported include binary data types (ODBC only) and stored procedures.

Notes*

1. ODBC – Open Database Connectivity
   A standard for accessing different SQL-based database systems.

2. JDBC –Java Database Connectivity
   Part of the Java Development Kit which defines an application programming interface for Java for standard SQL access to databases from Java programs.

Refer to http://www.opengroup.org/

SQL-VIEW

Tables on remote relational databases are presented as MultiValue files within Reality, allowing direct read and write access.

Software Compliance

The SQL interfaces for Reality complies with the following open standards:

SQL/ODBC

ODBC version 2.0, API (Application Programming Interface) Level 1 and SQL Core Grammar.

SQL/JDBC

Java 2 SDK Standard Edition V1.2.2, JDBC 2.0 Core API (Application Programming Interface) and SQL-92 Entry Level.

Prerequisites

SQL/ODBC Driver

Microsoft Windows 2000, XP, Server 2003 or Vista.
Northgate PCSNI software V2.2 Rev C or later.
Any ODBC Level 1 or 2 compliant application.
A Winsock compliant transport stack for TCP/IP connections.
Northgate UNIX-Connect for connecting to Reality databases on a UNIX host platform.

SQL/JDBC Driver

Java Run Time (JRE) version 1.2 or above.
Northgate UNIX-Connect for connecting to Reality databases on a UNIX host platform.

Note:

Refer to the *SQL for Reality* section of the latest On-Line User Documentation for full details.

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