



Oracle8i Generic Connectivity

Technical Data Sheet

November 1999

Oracle8i with its server integrated technology, called Heterogeneous Services is introducing two new connectivity solutions to address the needs of disparate data access. They are: Oracle8i Generic Connectivity and Oracle8i Transparent Gateways®. These technologies make it possible to access any number of non-Oracle systems from an Oracle database in a heterogeneously distributed environment. Oracle8i generic connectivity enables connectivity using industry standards such as ODBC and OLEDB. Generic connectivity feature enables access to many data stores (relational and non-relational) for which Oracle does not have a specific gateway.

PRODUCT SUMMARY

The demand to deliver corporate data to internal and external customers via the Internet is a major priority for the information system professional. The challenge is to quickly, efficiently, and economically deploy corporate data that may exist on many disparate systems through a single web application, providing the customer with a comprehensive view of the corporate data assets. A technical solution is required that allows the IS professional to easily publish the corporate data on the Internet, regardless of the non-Oracle system, operating system, or networking platform.

Oracle introduces two connectivity solutions in heterogeneous environment. They are:

1. Oracle8i Generic Connectivity:
2. Oracle8i Transparent Gateways

Generic connectivity is a Oracle8i release 8.1.6 feature. This connectivity solution addresses the needs of data access to many data stores for which Oracle does not have a gateway solution. This feature enables transparent connectivity using industry standards such as ODBC and OLEDB. This feature is mainly intended for Adhoc queries against low end datastores such as Access, FoxPro, dBase etc.

Oracle8i Transparent Gateways® provide the flexibility, power, and scalability to transparently access to many non-Oracle data stores, including Microsoft SQL Server, IBM DB2, and Sybase, from an Oracle environment (see a complete list of gateways at <http://www.oracle.com/gateways/>). Application and web developers alike can focus their efforts on developing business solutions instead of trying to re-invent transparent access to non-Oracle systems. Combine Oracle Transparent Gateways with the industry leading internet capabilities of Oracle8i for a complete and powerful solution to publish your heterogeneously distributed data on the Internet.

Heterogeneous Services Technology

Beginning with Oracle8 release 8.0, the generic core of the Oracle Transparent Gateway is incorporated into the database as the *Heterogeneous Services* facility. Heterogeneous Services extend the Oracle SQL engine to recognize the SQL and procedural capabilities of the remote non-Oracle system and the mappings required to obtain necessary data dictionary information. Heterogeneous Services also maintains the transaction coordination between Oracle and the remote non-Oracle system, such as providing the two-phase commit protocol to ensure distributed transaction integrity, even for non-Oracle systems that do not natively support two-phase commit. Generic Connectivity feature is based on this Heterogeneous Services Technology.

Oracle8/ Generic Connectivity Feature

This feature is available from Oracle8*i* server release 8.1.6 onwards.

Generic connectivity can be implemented as one of the following types of HS agents:

- ODBC agent for accessing ODBC data providers
- OLE DB agent for accessing OLE DB data providers that support SQL processing—sometimes referred to as OLE DB-SQL (based system)
- OLE DB agent for accessing OLE DB data providers without SQL processing support—sometimes referred to as OLE DB-FS (File System)

Architecture:

Generic Connectivity feature works with ODBC/OLEDB drivers. Oracle8*i* provides the interface required to communicate with these non-Oracle drivers. The driver needs to be on the same platform as the Oracle8*i* server with its agent. The non-Oracle system itself can exist either on the same machine or on a separate machine.

Some examples of Generic Connectivity configuration:

Example 1: Non-Oracle system on a different Machine

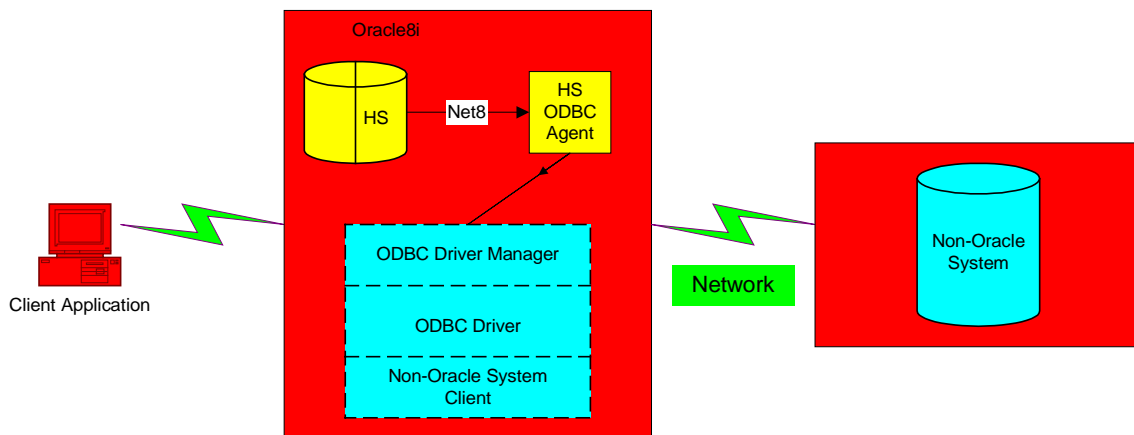


Figure 1: Oracle8*i* Release 8.1.6 ODBC Generic Connectivity Configuration Example

Example 2: Non-Oracle System on the same machine as the Oracle Server

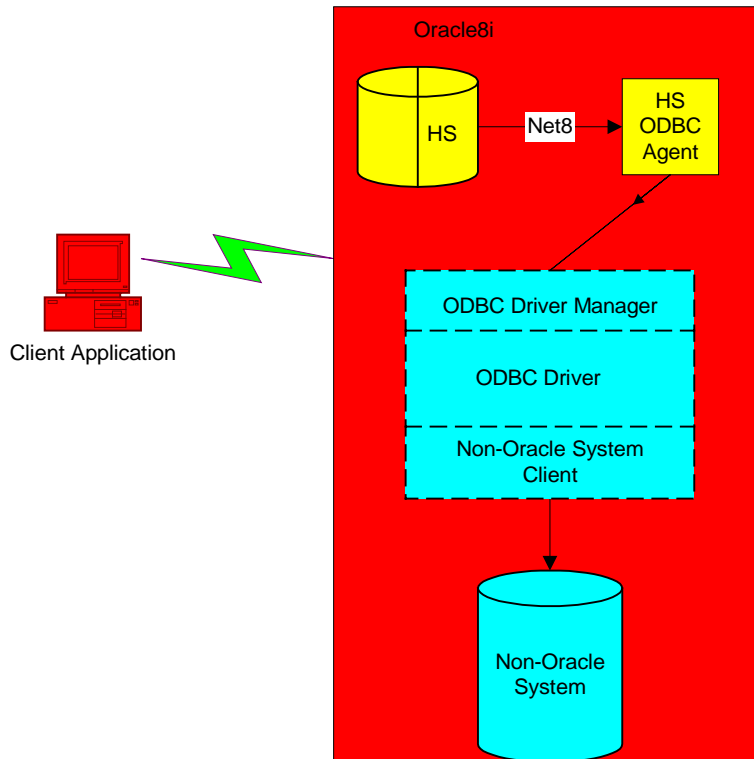


Figure 2: Oracle8i Release 8.1.6 ODBC Generic Connectivity Configuration Example

Generic Connectivity Key Features:

- *SQL Statement Execution:*

SQL statements sent using a generic connectivity agent are executed differently depending on the type of agent you are using: ODBC, OLE DB (SQL), or OLE DB (FS).

- *Datatype Mapping:*

Oracle8i maps the datatypes used in ODBC and OLE DB compliant data sources to supported Oracle datatypes.

- *SQL statement and Function support:*

As long as the ODBC/OLEDB drivers support these SQL statements, generic connectivity supports them as well: DELETE, INSERT, UPDATE, SELECT

The following functions are supported by Generic Connectivity: AVG(exp), LIKE(exp), COUNT(*), MAX(exp), MIN(exp), NOT

- *Monitoring Tool Availability:*

Distributed Access Manager, a GUI component of Oracle Enterprise Manager, Version 2.1, can be used to monitor the agents providing generic connectivity

Generic Connectivity Main Restrictions:

- A table including a LOB column must have a separate column that serves as a primary key.
- LOB data cannot be read through passthrough queries.
- Updates or deletes that include functions within a WHERE clause are not allowed.
- Stored procedures are not supported.

- Generic connectivity agents cannot participate in distributed transactions--they support single-site transactions only.

Generic Connectivity Availability:

The feature is going to be available with:

- Oracle8i release 8.1.6 Enterprise Edition
- Oracle8i release 8.1.6 Standard Edition
- Oracle8i release 8.1.6 Personal Edition

Platform Availability:

- Sun Solaris
- HP-UX (Post 8.1.6 release)
- IBM AIX (Post 8.1.6 release)
- Windows NT

ORACLE®

Enabling the Information Age™

Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
+ 1.650.506.7000
Fax + 1.650.506.7200
<http://www.oracle.com/>

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