

# USING PROGRESS DATADIRECT FOR ODBC WITH THE ORACLE DATABASE GATEWAY

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# Introduction

**Heterogeneous Services** and Database Gateway for ODBC allow Oracle customers to access and integrate non-Oracle data sources, offering flexibility in multi-database environments.

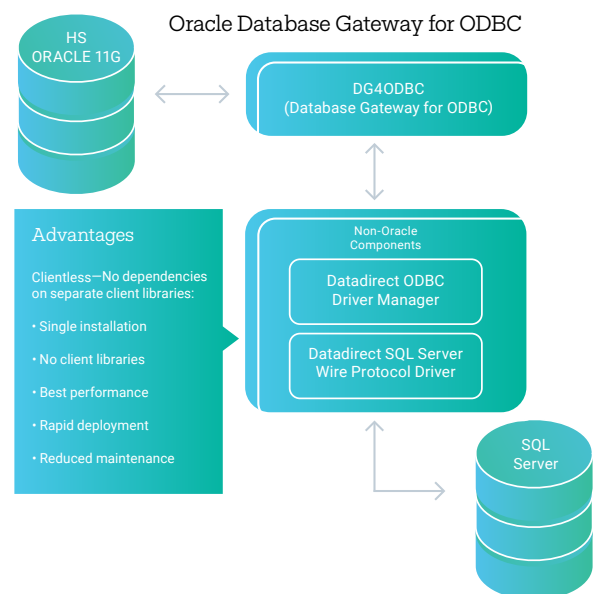
Using Database Gateway for ODBC requires optimal connectivity to ensure the best application performance. Progress® DataDirect® for ODBC drivers deliver the most scalable and bestperforming connectivity for Oracle Database Gateway.

- Architecture: Oracle Database Gateway for ODBC
- Installation Steps and Code Examples
- Common Errors and Solutions

## Architecture: Oracle Database Gateway for ODBC

The Oracle Database Gateway for ODBC is implemented by using a Heterogeneous Services ODBC agent. An ODBC agent is one of the gateways available with the Oracle Database Gateway software.

To access a non-Oracle data store using the Database Gateway for ODBC, the agent works with an ODBC driver. The ODBC driver must be on the same platform as the ODBC agent. The non-Oracle data stores can reside on the same machine as the Oracle database or a different machine.



# Installation Steps and Code Examples

This example shows the configuration of the Database Gateway for ODBC on a Sun Solaris system using a DataDirect ODBC driver to connect to Microsoft SQL Server. Please check your Oracle documentation for specific version and platform support.

## 1. Install the Database Gateway for ODBC

Oracle Database Gateway has its own installer similar to the one used to install the Oracle server. Run the installer and choose Database Gateway for ODBC and follow the prompts. If the Gateway and Oracle server are on the same machine, make sure to configure the Gateway with a different port number than the Oracle listener is using.

## 2. Install the DataDirect for ODBC Driver

Some non-Oracle data stores will require the database's client library components to be installed. If the database is DB2, Sybase, SQL Server or Informix, you should use the DataDirect for ODBC Wire Protocol driver for that database because DataDirect drivers don't require client libraries to connect to the database.

## 3. Configure Your ODBC Data Source in the .odbc.ini file

The example below is a data source to connect to Microsoft SQL Server 2008.

**Note:** Annotations to the following examples that begin with the // symbol should not be included in the actual file.

```
[MS_SQLServer] // Configured during ODBC driver installation
Driver=/opt/odbc/lib/ivmsqlsXX.so
Description=DataDirect SQL Server Wire Protocol
Database=dbname // Name of target database
HostName=120.2.200.176,1433 // IP address of target database
PortNumber=1433 // Port number of target database.
```

## 4. Make Sure the Following Entries are in the tnsnames.ora and listener.ora files

TNSNAMES.ORA

```
hsalias=
    (description=
        (address=(protocol=tcp)(host=hostname)(port=1521))
        (connect_data=(sid=DataDirectODBC))
        // Needs to match the sid in listener.ora.
    (hs=ok) // hs clause goes in the description.
    )
```

LISTENER.ORA

```
listener =
    (description_list =
        (description =
            (address_list =
                (address = (protocol = tcp)(host =
                    unixhost)(port = 1521))
            )
        )
    )
sid_list_listener=
    sid_list=
        sid_desc=
            sid_name=DataDirectODBC) // Match the sid
            in tnsnames.ora.

            (oracle_home=/db/oracle/product/11g)\
            // Appropriate $ORACLE_HOME
            (program= dg4odbc) // Agent Executable
        (ENVS=LD_LIBRARY_PATH=/opt/odbc/lib:$ORACLE_HOME/LIB)
    )
```

(Note: Shared library path is LIBPATH on AIX, and SHLIB\_PATH on HP-US PA RISC)

## 5. Run “lsnrctl Services” to Verify that You Now Have a Service Handler for the hsmsql sid

```
LSNRCTL> status
Services Summary...
Service “dg4odbc” has 1 instance(s).
    Instance “dg4odbc”, status UNKNOWN, has 1
        handler(s) for this service...
    The command completed successfully
```

## 6. Create the Initialization File

You must create and customize an initialization file for your Database Gateway for ODBC agent. Oracle supplies a sample initialization file named “initdg4odbc.ora”—which is stored in the \$ORACLE\_HOME/hs/admin directory.

To create an initialization file, copy the appropriate sample file and rename the file to initHS\_SID.ora. In this example, the SID noted in the listener and tnsnames files is “DataDirectODBC” so the new initialization file is called “initDataDirectODBC.ora.”

**Note** that the SID name and the initialization file name are case sensitive.

## 7. Make sure the Following Entries are in the initdg4odbc.ora Now Located in ORACLE\_HOME/hs/admin

```
INITDataDirectODBC.ORA
# HS init parameters
#
HS_FDS_CONNECT_INFO = MS_SQLServer // odbc data_source_name
HS_FDS_TRACE_LEVEL = OFF // range includes OFF, ON, DEBUG
HS_FDS_TRACE_FILE_NAME = hsmsql.trc // trace file name
HS_FDS_SHAREABLE_NAME = /opt/odbc/lib/libodbc.so
// full path to odbc driver manager
#
#
# ODBC specific environment variables
#
set ODBCINI=/opt/odbc/odbc.ini // location of odbc.ini
#
```

```
# Environment variables required for the non-Oracle system
#
(Note: Driver manager library configured for HS_FDS_SHAREABLE_
NAME is odbc.so on AIX)
```

## 8. Stop and Start the Oracle Net Listener for the Gateway

```
$ lsnrctl stop
$ lsnrctl start
```

## 9. Create a Database Link to Access the Target Database

Be sure to use the appropriate quotes as shown in the following example:

```
SQL> create database link hsmsql
SQL> connect to "user" identified by "password"
SQL> using 'hsalias';
```

## 10. To Test, Run a Simple Query of a Known Table on the Target Data Store

```
SQL> select * from employee@hsmsql;
8 rows selected.
```

<b>EMPID</b>	<b>FIRSTNAME</b>	<b>LASTNAME</b>	<b>DEPT</b>	<b>JOB</b>
10000	Joseph	Johnston	Sales	CDW
10001	John	Ladd	Sales	WNV
10002	Ronald	Wall	Relations	NPI
10003	Julie	Reynolds	Relations	NPO
10004	Bill	Baird	Telemarket	PHN
10005	Jason	Linde	Sales	WND
10006	Edward	Lufner	Telemarket	CDG
10007	Mike	Seibt	Networking	IDW

# Common Errors and Solutions— Oracle Heterogeneous Services and Database Gateway for ODBC

Error	Cause	Action
<p>ORA-28509: unable to establish a connection to non-Oracle system</p> <p>ORA-02063: preceding line from HS</p>	Problem with the Oracle configuration files!	<p>Make sure:</p> <ul style="list-style-type: none"> <li>•HOST parameter in the tnsnames.ora file is correct.</li> <li>•PORT number is correct.</li> <li>•SID name is correct in both tnsnames.ora and listener.ora.</li> </ul>
<p>ORA-02068: following severe error from HS</p> <p>ORA-03114: not connected to ORACLE</p>	The required syntax for the TNSNAMES.ORA file is not present.	<p>Add (HS=OK) in the description section of the tnsnames.ora file.</p> <p>NOTE: the listener is unable to start if an invalid PROGRAM name is provided.</p>
<p>ERROR at line 1:</p> <p>ORA-28500: connection from ORACLE to a non-Oracle system returned this message:</p> <p>[DataDirect][ODBC lib] Data source name not found and no default driver specified</p> <p>ORA-02063: preceding 2 lines from ODBCLINK</p>	Incorrect parameter settings in the HS init.ora file.	<p>Set HS_FDS_CONNECT_INFO in the HS init.ora file to the data source name located in the odbc.ini file.</p> <p>Example: HS_FDS_CONNECT_INFO = MS_SQLServer Wire Protocol</p> <p>Make sure the HS init.ora file exists in the \$ORACLE_HOME/hs/admin directory and has the same name as the SID in the listener.ora.</p> <p>Example: If SID=hsodbc in the listener.ora file, then the HS init.ora file would be named \$ORACLE_HOME/hs/admin/inithsodbc.ora.</p>
<p>ERROR at line 1:</p> <p>ORA-28500: connection from Oracle to a non-Oracle system returned this message:</p> <p>ORA-02063: preceding line from ODBCLINK</p>	Incorrect parameter settings in the HS init.ora file.	<p>Set HS_FDS_SHAREABLE_NAME to the full path plus filename to the libodbc.so file.</p> <p>Example: HS_FDS_SHAREABLE_NAME=/opt/odbc/lib/libodbc.so</p>



Error	Cause	Action
<p>ERROR at line 1:</p> <p>ORA-28500: connection from Oracle to a non-Oracle system returned this message:</p> <p>[DataDirect][ODBC lib] Data source name not found and no default driver specified</p> <p>ORA-02063: preceding 2 lines from ODBCLINK</p>	<p>The HS agent cannot find the odbc.ini file.</p>	<p>Set the ODBCINI variable in the HS init.ora file.</p> <p>Example: set ODBCINI=/opt/odbc/odbc.ini</p>
<p>ERROR at line 1:</p> <p>ORA-00942: table or view does not exist</p> <p>[DataDirect][ODBC SQL Server Driver][SQL Server]Invalid object name 'BADTABLE'.</p> <p>ORA-02063: preceding 2 lines from ODBCLINK</p>	<p>The data source in the odbc.ini file has incorrect database information.</p>	<p>Consult the <a href="#">DataDirect for ODBC Reference Guide</a> for information on setting parameters for your data source.</p>
<p>ERROR at line 1:</p> <p>ORA-28500: connection from Oracle to a non-Oracle system returned this message:</p> <p>[DataDirect][ODBC SQL Server Driver][libssclient23]General network error. Check your network documentation. [DataDirect][ODBC SQL Server Driver][libssclient23]ConnectionOpen (Temporary failure in name resolution())</p> <p>ORA-02063: preceding 2 lines from ODBCLINK</p>	<p>There is a problem communicating with the foreign data source at the network layer.</p>	<p>Make sure the destination host or IP address and port number are correct for the data source in the odbc.ini file.</p>
<p>ERROR at line 1:</p> <p>ORA-01017: invalid username/password; logon denied</p> <p>[DataDirect][ODBC SQL Server Driver][SQL Server]Login failed for user 'test01'.</p> <p>ORA-02063: preceding 2 lines from ODBCLINK</p>	<p>The Oracle database link created for the foreign data source either has no credentials or incorrect credentials.</p>	<p>Recreate the Oracle database link with the proper username and password. Note that the username and password must be in double quotes.</p> <p>Example: Create database link ODBC connect to "sa" identified by "pencil" using 'hsodbc'.</p>




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