PROGRESS DATADIRECT

DataDirect Connect® Series *for* ODBC
Troubleshooting Guide

Release 7.1.0

PROGRESS software

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Preface

This book is your troubleshooting guide to Progress® DataDirect Connect® Series *for* ODBC, which includes the following products:

- DataDirect Connect *for* ODBC
- DataDirect Connect64 *for* ODBC
- DataDirect Connect XE (Extended Edition) *for* ODBC
- DataDirect Connect64 XE *for* ODBC

Using this Book

The content of this book assumes that you are familiar with your operating system and its commands. It contains the following information:

- Chapter 1 “Diagnostic Tools” on page 11 discusses the diagnostic tools that are available to you when you are configuring and troubleshooting your ODBC environment.
- Chapter 2 “Error Messages” on page 21 discusses error messages that you might encounter.
- Chapter 3 “Troubleshooting” on page 23 describes issues you might encounter, provides some typical causes of the issues, lists some diagnostic tools that are useful to troubleshoot the issues, and, in some cases, explains possible actions you can take to resolve the issues.

Conventions Used in This Book

The following sections describe the typography and other conventions used in this book.

Typographical Conventions

This book uses the following typographical conventions:

Convention	Explanation
italics	Introduces new terms with which you may not be familiar, and is used occasionally for emphasis.
bold	Emphasizes important information. Also indicates button, menu, and icon names on which you can act. For example, click **Next**.
UPPERCASE	Indicates keys or key combinations that you can use. For example, press the ENTER key. Also used for SQL reserved words.

Convention	Explanation
`monospace`	Indicates syntax examples, values that you specify, or results that you receive.
`monospaced italics`	Indicates names that are placeholders for values that you specify. For example, *`filename`*.
forward slash /	Separates menus and their associated commands. For example, Select File / Copy means that you should select Copy from the File menu. The slash also separates directory levels when specifying locations under UNIX.
vertical rule |	Indicates an "OR" separator used to delineate items.
brackets [ ]	Indicates optional items. For example, in the following statement: SELECT [DISTINCT], DISTINCT is an optional keyword. Also indicates sections of the Windows Registry.
braces { }	Indicates that you must select one item. For example, {yes | no} means that you must specify either yes or no.
ellipsis . . .	Indicates that the immediately preceding item can be repeated any number of times in succession. An ellipsis following a closing bracket indicates that all information in that unit can be repeated.

Environment-Specific Information

The drivers are supported in the Windows, UNIX, and Linux environments. When the information provided is not applicable to all supported environments, the following symbols are used to identify that information:

The Windows symbol signifies text that is applicable only to Windows.

The UNIX symbol signifies text that is applicable only to UNIX and Linux.

About the Product Documentation

The product library consists of the following books:

- *DataDirect Connect Series for ODBC Installation Guide* details requirements and procedures for installing the product.
- *DataDirect Connect Series for ODBC User's Guide* provides information about configuring and using the product.
- *DataDirect Connect Series for ODBC Reference* provides detailed reference information about the product.
- *DataDirect Connect Series for ODBC Troubleshooting Guide* provides information about error messages and troubleshooting procedures for the product.

HTML Version

This library, except for the installation guide, is placed on your system as HTML-based online help during a normal installation of the product. It is located in the help subdirectory of the product installation directory. To use online help, you must have one of the following Internet browsers installed.

- Internet Explorer 5.*x*, 6.*x*, 7.*x*, 8.*x*, and 9.*x*
- Mozilla Firefox 1.*x*, 2.*x*, 3.*x,* 8.0, and 10.0
- Netscape 4.*x*, 7.*x* 8.*x*, and 9.0
- Safari 1.*x*, 2.*x*, 3.*x*, and 5.1.7
- Opera 7.54u2, 8.*x*, 9.*x*, and 12.0

On Windows, you can access the entire Help system by selecting the help icon that appears in the DataDirect program group.

On all platforms, you can access the entire Help system by opening the following file from within your browser:

install_dir/help/help.htm

where *install_dir* is the path to the product installation directory.

Or, from a command-line environment, at a command prompt, enter:

browser_exe install_dir/help/help.htm

where *browser_exe* is the name of your browser executable and *install_dir* is the path to the product installation directory.

After the browser opens, the left pane displays the Table of Contents, Index, and Search tabs for the entire documentation library. When you have opened the main screen of the Help system in your browser, you can bookmark it in the browser for quick access later.

NOTE: Security features set in your browser can prevent the Help system from launching. A security warning message is displayed. Often, the warning message provides instructions for unblocking the Help system for the current session. To allow the Help system to launch without encountering a security warning message, the security settings in your browser can be modified. Check with your system administrator before disabling any security features.

Help is also available from the setup dialog box for each driver. When you click **Help**, your browser opens to the correct topic without opening the help Table of Contents. A grey toolbar appears at the top of the browser window.

This tool bar contains previous and next navigation buttons. If, after viewing the help topic, you want to see the entire library, click:

on the left side of the toolbar, which opens the left pane and displays the Table of Contents, Index, and Search tabs.

PDF Version

The product documentation is also provided in PDF format. You can view or print the documentation, and perform text searches in the files. The PDF documentation is available on the Progress DataDirect Web site at:

http://www.datadirect.com/support/product-info/documentation/by-product.html

You can download the entire library in a compressed file. When you uncompress the file, it appears in the correct directory structure.

Maintaining the correct directory structure allows cross-book text searches and cross-references. If you download or copy the books individually outside of their normal directory structure, their cross-book search indexes and hyperlinked cross-references to other volumes will not work. You can view a book individually, but it will not automatically open other books to which it has cross-references.

To help you navigate through the library, a file, called books.pdf, is provided. This file lists each online book provided for the product. We recommend that you open this file first and, from this file, open the book you want to view.

NOTE: To use the cross-book search feature, you must use Adobe Reader 8.0 or higher. If you are using a version of Adobe Reader that does not support the cross book search feature or are using a version of Adobe Reader earlier than 8.0, you can still view the books and use the Find feature within a single book.

Contacting Customer Support

Progress DataDirect offers a variety of options to meet your customer support needs. Please visit our Web site for more details and for contact information:

http://www.datadirect.com/support/index.html

The Progress DataDirect Web site provides the latest support information through our global service network. The SupportLink program provides access to support contact details, tools, patches, and valuable information, including a list of FAQs for each product. In addition, you can search our Knowledgebase for technical bulletins and other information.

When you contact us for assistance, please provide the following information:

- Your customer number or the serial number that corresponds to the product for which you are seeking support, or a case number if you have been provided one for your issue. If you do not have a SupportLink contract, the SupportLink representative assisting you will connect you with our Sales team.
- Your name, phone number, email address, and organization. For a first-time call, you may be asked for full customer information, including location.
- The Progress DataDirect product and the version that you are using.
- The type and version of the operating system where you have installed your product.

- Any database, database version, third-party software, or other environment information required to understand the problem.
- A brief description of the problem, including, but not limited to, any error messages you have received, what steps you followed prior to the initial occurrence of the problem, any trace logs capturing the issue, and so on. Depending on the complexity of the problem, you may be asked to submit an example or reproducible application so that the issue can be re-created.
- A description of what you have attempted to resolve the issue. If you have researched your issue on Web search engines, our Knowledgebase, or have tested additional configurations, applications, or other vendor products, you will want to carefully note everything you have already attempted.
- A simple assessment of how the severity of the issue is impacting your organization.

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1 Diagnostic Tools

This chapter discusses the following diagnostic tools you use when configuring and troubleshooting your ODBC environment:

- "ODBC Trace" on page 11
- "The Test Loading Tool" on page 15
- "ODBC Test" on page 15
- "Logging (Salesforce Driver)" on page 15
- "The demoodbc Application" on page 19
- "The example Application" on page 19
- "Other Tools" on page 20

ODBC Trace

ODBC tracing allows you to trace calls to ODBC drivers and create a log of the traces. Creating a trace log is particularly useful when you are troubleshooting an issue.

To create a trace log:

1. Enable tracing (see "Enabling Tracing" for more information).
2. Start the ODBC application and reproduce the issue.
3. Stop the application and turn off tracing.
4. Open the log file in a text editor and review the output to help you debug the problem.

For a complete explanation of tracing, refer to the following Progress DataDirect Knowledgebase document:

http://progresscustomersupport-survey.force.com/ConnectKB/articles/Article/3049?retURL=%2Fapex%2FKnowledgeSearch&popup=false

Enabling Tracing

Progress DataDirect provides a tracing library that is enhanced to operate more efficiently, especially in production environments, where log files can rapidly grow in size. The DataDirect tracing library allows you to control the size and number of log files.

On Windows, you can enable tracing through the Tracing tab of the ODBC Data Source Administrator.

On UNIX and Linux, you can enable tracing by directly modifying the [ODBC] section in the system information (odbc.ini) file. On Linux, you can also enable tracing through the Trace tab of the DataDirect ODBC Data Source Administrator for Linux.

Windows ODBC Administrator

On Windows, open the ODBC Data Source Administrator and the Tracing tab. To specify the path and name of the trace log file, type the path and name in the Log File Path field or click **Browse** to select a log file. If no location is specified, the trace log resides in the working directory of the application you are using.

Click **Select DLL** in the Custom Trace DLL pane to select the DataDirect enhanced tracing library, *xx*trc*yy*.dll, where *xx* represents either iv (32-bit version) or dd (64-bit version), and *yy* represents the driver level number, for example, ivtrc27.dll. The library is installed in the \Windows\System32 directory.

After making changes on the Tracing tab, click **Apply** for them to take effect.

Enable tracing by clicking **Start Tracing Now**. Tracing continues until you disable it by clicking **Stop Tracing Now**. Be sure to turn off tracing when you are finished reproducing the issue because tracing decreases the performance of your ODBC application.

When tracing is enabled, information is written to the following trace log files:

- Trace log file (*trace_filename*.log) in the specified directory.
- Trace information log file (*trace_filename*INFO.log). This file is created in the same directory as the trace log file and logs the following SQLGetInfo information:
  - SQL_DBMS_NAME
  - SQL_DBMS_VER
  - SQL_DRIVER_NAME
  - SQL_DRIVER_VER
  - SQL_DEFAULT_TXN_ISOLATION

The DataDirect enhanced tracing library allows you to control the size and number of log files. The file size limit of the log file (in KB) is specified by the Windows Registry key ODBCTraceMaxFileSize. Once the size limit is reached, a new log file is created and logging continues in the new file until it reaches its file size limit, after which another log file is created, and so on.

The maximum number of files that can be created is specified by the Registry key ODBCTraceMaxNumFiles. Once the maximum number of log files is created, tracing reopens the first file in the sequence, deletes the content, and continues logging in that file until the file size limit is reached, after which it repeats the process with the next file in the sequence. Subsequent files are named by appending sequential numbers, starting at 1 and incrementing by 1, to the end of the original file name, for example, SQL1.LOG, SQL2.LOG, and so on.

The default values of ODBCTraceMaxFileSize and ODBCTraceMaxNumFiles are 102400 KB and 10, respectively. To change these values, add or modify the keys in the following Windows Registry section:

[HKEY_CURRENT_USER\SOFTWARE\ODBC\ODBC.INI\ODBC]

WARNING: Do not edit the Registry unless you are an experienced user. Consult your system administrator if you have not edited the Registry before.

Edit each key using your values and close the Registry.

Linux ODBC Administrator

On Linux, you can enable tracing either through the Trace tab of the DataDirect ODBC Data Source Administrator for Linux (the Linux ODBC Administrator) or by directly modifying the [ODBC] section in the system information (odbc.ini) file.

To specify the path and name of the trace log file, type the path and name in the Trace File field or click **Browse** to select a log file. If no location is specified, the trace log resides in the working directory of the application you are using.

DataDirect ships an enhanced library to perform tracing. This library appears by default in the Trace Library field. If you want to use a custom library instead, type the path and name of the library in the Trace Library field or click **Browse** to select a library.

To enable tracing, select the **Enable Tracing** check box on the Trace tab of the Administrator. Clear the check box to disable tracing. Tracing continues until you disable it. Be sure to turn off tracing when you are finished reproducing the issue because tracing decreases the performance of your ODBC application.

After making changes on the Trace tab, click **Apply** for them to take effect.

The DataDirect enhanced tracing library gives you more control over tracing. See "System Information (odbc.ini) File" for a complete discussion of how to configure enhanced tracing.

System Information (odbc.ini) File

The [ODBC] section of the system information file includes several keywords that control tracing:

```
Trace=[0 | 1]
TraceFile=trace_filename
TraceDll=ODBCHOME/lib/xxtrcyy.zz
ODBCTraceMaxFileSize=file_size
ODBCTraceMaxNumFiles=file_number
TraceOptions=0
```

Where:

`Trace=[0 | 1]`—Allows you to enable tracing by setting the value of Trace to 1. Disable tracing by setting the value to 0 (the default). Tracing continues until you disable it. Be sure to turn off tracing when you are finished reproducing the issue because tracing decreases the performance of your ODBC application.

`TraceFile=`*`trace_filename`*—Specifies the path and name of the trace log file. If no path is specified, the trace log resides in the working directory of the application you are using.

`TraceDll=ODBCHOME/lib/`*`xxtrcyy.zz`* —Specifies the library to use for tracing. The driver installation includes a DataDirect enhanced library to perform tracing, *`xxtrcyy.zz`*, where *`xx`* represents either iv (32-bit version) or dd (64-bit version), *`yy`* represents the driver level number, and *`zz`* represents either so or sl. For example, ivtrc27.so is the 32-bit version of the library. To use a custom shared library instead, enter the path and name of the library as the value for the TraceDll keyword.

The DataDirect enhanced tracing library allows you to control the size and number of log files with the ODBCTraceMaxFileSize and ODBCTraceMaxNumFiles keywords.

`ODBCTraceMaxFileSize=file_size`. The ODBCTraceMaxFileSize keyword specifies the file size limit (in KB) of the log file. Once this file size limit is reached, a new log file is created and logging continues in the new file until it reaches the file size limit, after which another log file is created, and so on. The default is 102400.

`ODBCTraceMaxNumFiles=file_number`. The ODBCTraceMaxNumFiles keyword specifies the maximum number of log files that can be created. The default is 10. Once the maximum number of log files is created, tracing reopens the first file in the sequence, deletes the content, and continues logging in that file until the file size limit is reached, after which it repeats the process with the next file in the sequence. Subsequent files are named by appending sequential numbers, starting at 1 and incrementing by 1, to the end of the original file name, for example, odbctrace1.out, odbctrace2.out, and so on.

`TraceOptions=[0|1|2|3]`. The ODBCTraceMaxNumFiles keyword specifies whether to print the current timestamp, parent process id, process id, and thread id for all ODBC functions to the output file. The default is 0.

- If set to 0, the driver uses standard ODBC tracing.
- If set to 1, the log file includes a timestamp on ENTRY and EXIT of each ODBC function.
- If set to 2, the log file prints a header on every line. By default, the header includes the parent process ID and process ID.
- If set to 3, both TraceOptions=1 and TraceOptions=2 are enabled. The header includes a timestamp as well as a parent process ID and process ID.

Example

In the following example of trace settings, tracing has been enabled, the name of the log file is odbctrace.out, the library for tracing is ivtrc27.so, the maximum size of the log file is 51200 KB, and the maximum number of log files is 8. Timestamp and other information is included in odbctrace.out.

```
Trace=1
TraceFile=ODBCHOME/lib/odbctrace.out
TraceDll=ODBCHOME/lib/ivtrc27.so
ODBCTraceMaxFileSize=51200
ODBCTraceMaxNumFiles=8
TraceOptions=3
```

The Test Loading Tool

Before using the test loading tool, be sure that your environment variables are set correctly. Refer to "Environment Variables" in Chapter 4 of the *DataDirect Connect Series for ODBC User's Guide* for details about environment variables.

The ivtestlib (32-bit drivers) and ddtestlib (64-bit drivers) test loading tools are provided to test load drivers and help diagnose configuration problems in the UNIX and Linux environments, such as environment variables not correctly set or missing database client components. This tool is installed in the /bin subdirectory in the product installation directory. It attempts to load a specified ODBC driver and prints out all available error information if the load fails.

For example, if the drivers are installed in /opt/odbc/lib, the following command attempts to load the 32-bit Oracle Wire Protocol driver on Solaris, where *xx* represents the version number of the driver:

```
ivtestlib /opt/odbc/lib/ivoraxx.so
```

NOTE: On Solaris, AIX, and Linux, the full path to the driver does not have to be specified for the tool. The HP-UX version, however, requires the full path.

If the load is successful, the tool returns a success message along with the version string of the driver. If the driver cannot be loaded, the tool returns an error message explaining why.

Refer to "Version String Information" in Chapter 2 of the *DataDirect Connect Series for ODBC User's Guide* for details about version strings.

ODBC Test

On Windows, Microsoft® ships with its ODBC SDK an ODBC-enabled application, named ODBC Test, that you can use to test ODBC drivers and the ODBC Driver Manager. ODBC 3.51 includes both ANSI and Unicode-enabled versions of ODBC Test.

To use ODBC Test, you must understand the ODBC API, the C language, and SQL. For more information about ODBC Test, refer to the *Microsoft ODBC SDK Guide*.

Logging (Salesforce Driver)

The Salesforce driver provides a flexible and comprehensive logging mechanism of its Java components that allows logging to be incorporated seamlessly with the logging of your application or enabled and configured independently from the application. The logging mechanism can be instrumental in investigating and diagnosing issues. It also provides valuable insight into the type and number of operations requested by the application from the driver and requested by the driver from the remote data source. This information can help you tune and optimize your application.

Logging Components

The Salesforce driver uses the Java Logging API to configure and control the loggers (individual logging components) used by the driver. The Java Logging API is built into the JVM.

The Java Logging API allows applications or components to define one or more named loggers. Messages written to the loggers can be given different levels of importance. For example, warnings that occur in the driver can be written to a logger at the WARNING level, while progress or flow information can be written to a logger at the INFO or FINER level. Each logger used by the driver can be configured independently. The configuration for a logger includes what level of log messages are written, the location to which they are written, and the format of the log message.

The Java Logging API defines the following levels:

- SEVERE
- CONFIG
- FINE
- FINER
- FINEST
- INFO
- WARNING

NOTE: Log messages logged by the driver only use the CONFIG, FINE, FINER, and FINEST logging levels.

Setting the log threshold of a logger to a particular level causes the logger to write log messages of that level and higher to the log. For example, if the threshold is set to `FINE`, the logger writes messages of levels FINE. CONFIG, and SEVERE to its log. Messages of level FINER or FINEST are not written to the log.

The driver exposes loggers for the following functional areas:

- Driver to SQL Communication
- SQL Engine
- Web service adapter

Driver to SQL Communication Logger

Name com.ddtek.cloud.drivercommunication

Description Logs all calls made by the driver to the SQL Engine and the responses from the SQL Engine back to the driver.

Message Levels CONFIG - Errors and Warnings encountered by the communication protocol are logged at this level.

FINER - The message type and arguments for requests and responses sent between the driver and SQL Engine are logged at this level. Data transferred between the driver and SQL Engine is not logged.

FINEST - Data transferred between the driver and SQL Engine is logged at this level.

Default OFF

SQL Engine Logger

Name com.ddtek.cloud.sql.level

Description Logs the operations that the SQL engine performs while executing a query. Operations include preparing a statement to be executed, executing the statement, and fetching the data, if needed. These are internal operations that do not necessarily directly correlate with Web service calls made to the remote data source.

Message Levels `CONFIG` - Any errors or warnings detected by the SQL engine are written at this level.

`FINE` - In addition to the same information logged by the CONFIG level, SQL engine operations are logged at this level. In particular, the SQL statement that is being executed is written at this level.

`FINER` - In addition to the same information logged by the CONFIG and FINE levels, data sent or received in the process of performing an operation is written at this level.

Web Service Adapter Logger

Name com.ddtek.cloud.adapter.level

Description Logs the Web service calls the driver makes to the remote data source and the responses it receives from the remote data source.

Message Levels `CONFIG` - Any errors or warnings detected by the Web service adapter are written at this level.

`FINE` - In addition to the information logged by the CONFIG level, information about Web service calls made by the Web service adapter and responses received by the Web service adapter are written at this level. In particular, the Web service calls made to execute the query and the calls to fetch or send the data are logged. The log entries for the calls to execute the query include the Salesforce-specific query being executed. The actual data sent or fetched is not written at this level.

`FINER` - In addition to the information logged by the CONFIG and FINE levels, this level provides additional information.

`FINEST` - In addition to the information logged by the CONFIG, FINE, and FINER levels, data associated with the Web service calls made by the Web service adapter is written.

Configuring Logging

You can configure logging using a standard Java properties file in either of the following ways:

- Using the properties file that is shipped with your JVM. See "Using the JVM" on page 18 for details.
- Using the driver. See "Using the Driver" on page 18 for details.

Using the JVM

If you want to configure logging using the properties file that is shipped with your JVM, use a text editor to modify the properties file in your JVM. Typically, this file is named logging.properties and is located in the JRE/lib subdirectory of your JVM. The JRE looks for this file when it is loading.

You can also specify which properties file to use by setting the java.util.logging.config.file system property. At a command prompt, enter:

```
java -Djava.util.logging.config.file=properties_file
```

where *properties_file* is the name of the properties file you want to load.

Using the Driver

If you want to configure logging using the driver, you can use either of the following approaches:

- Use a single properties file for all Salesforce connections.
- Use a different properties file for each embedded database. For example, if you have two embedded databases (johnsmith.xxx and pattijohnson.xxx, for example), you can load one properties file for the johnsmith.xxx database and load another properties file for the pattijohnson.xxx database.

NOTE: By default, the name of the embedded database is the user ID specified for the connection. You can specify the name of the embedded database using the DatabaseName property. Refer to "Connection Option Descriptions" in Chapter 21 of the *DataDirect Connect Series for ODBC User's Guide* for details on using LogConfigFile and other connection options.

By default, the driver looks for the file named ddlogging.properties in the current working directory to load for all Salesforce connections. If the SQLEngineMode connection option is set to Server, the driver uses the ddlogging.properties file that is specified by the Server DB Directory connection option.

If a properties file is specified for the LogConfigFile connection option, the driver uses the following process to determine which file to load:

1. The driver looks for the file specified by the LogConfigFile connection option.
2. If the driver cannot find the file in Step 1, it looks for a properties file named *database_name*.logging.properties in the directory containing the embedded database for the connection, where *database_name* is the name of the embedded database.
3. If the driver cannot find the file in Step 2, it looks for a properties file named ddlog.properties in the current working directory.
4. If the driver cannot find the file in Step 3, it abandons its attempt to load a properties file.

If any of these files exist, but the logging initialization fails for some reason while using that file, the driver writes a warning to the standard output (System.out), specifying the name of the properties file being used.

A sample properties filenamed ddlogging.properties is installed in the *install_dir*\samples subdirectory of your product installation directory, where *install_dir* is your product installation directory. For example, you can find the ddlogging.properties file in *install_dir*\Samples\Bulkstrm, *install_dir*\Samples\Bulk, and *install_dir*\Samples\Example. You can copy this file to the current working directory of your application or embedded database directory, and modify it using a text editor for your needs.

The demoodbc Application

DataDirect provides a simple C application, named demoodbc, that is useful for:

- Executing `SELECT * FROM emp`, where `emp` is a database table. The scripts for building the `emp` database tables (one for each supported database) are in the demo subdirectory in the product installation directory.
- Testing database connections.
- Creating reproducibles.
- Persisting data to an XML data file.

The demoodbc application is installed in the /samples/demo subdirectory in the product installation directory. Refer to demoodbc.txt or demoodbc64.txt in the demo directory for an explanation of how to build and use this application.

The example Application

Progress DataDirect provides a simple C application, named example, that is useful for:

- Executing any type of SQL statement
- Testing database connections
- Testing SQL statements
- Verifying your database environment

The example application is installed in the /samples/example subdirectory in the product installation directory. Refer to example.txt or example64.txt in the example directory for an explanation of how to build and use this application.

Other Tools

The Progress DataDirect Support Web site provides other diagnostic tools that you can download to assist you with troubleshooting. These tools are not shipped with the product. Refer to the Progress DataDirect Web page:

http://www.datadirect.com/support/downloads/tools.html

Progress DataDirect also provides a knowledgebase that is useful in troubleshooting problems. Refer to the Progress DataDirect Knowledgebase page:

http://progresscustomersupport-survey.force.com/ConnectKB

2 Error Messages

Error messages can be generated from:

- ODBC driver
- Database system
- ODBC driver manager

An error reported on an ODBC driver has the following format:

```
[vendor] [ODBC_component] message
```

where *ODBC_component* is the component in which the error occurred. For example, an error message from a DataDirect Oracle driver would look like this:

```
[DataDirect] [ODBC Oracle driver] Invalid precision specified.
```

If you receive this type of error, check the last ODBC call made by your application for possible problems or contact your ODBC application vendor.

An error that occurs in the data source includes the data store name, in the following format:

```
[vendor] [ODBC_component] [data_store] message
```

With this type of message, *ODBC_component* is the component that received the error specified by the data store. For example, you may receive the following message from an Oracle data store:

```
[DataDirect] [ODBC Oracle driver] [Oracle] ORA-0919: specified length too long
for CHAR column
```

This type of error is generated by the database system. Check your database system documentation for more information or consult your database administrator. In this example, you would check your Oracle documentation.

On Windows, the Microsoft Driver Manager is a DLL that establishes connections with drivers, submits requests to drivers, and returns results to applications. An error that occurs in the Driver Manager has the following format:

```
[vendor] [ODBC XXX] message
```

For example, an error from the Microsoft Driver Manager might look like this:

```
[Microsoft] [ODBC Driver Manager] Driver does not support this function
```

If you receive this type of error, consult the *Programmer's Reference* for the Microsoft ODBC Software Development Kit available from Microsoft.

On UNIX and Linux, the Driver Manager is provided by Progress DataDirect. For example, an error from the DataDirect Driver Manager might look like this:

```
[DataDirect][ODBC lib] String data code page conversion failed.
```

UNIX and Linux error handling follows the X/Open XPG3 messaging catalog system. Localized error messages are stored in the subdirectory:

`locale/`*`localized_territory_directory`*`/LC_MESSAGES`

where *`localized_territory_directory`* depends on your language.

For instance, German localization files are stored in `locale/de/LC_MESSAGES`, where `de` is the locale for German.

If localized error messages are not available for your locale, then they will contain message numbers instead of text. For example:

```
[DataDirect] [ODBC 20101 driver] 30040
```

3 Troubleshooting

If you are having an issue while using DataDirect Connect Series *for* ODBC, first determine the type of issue that you are encountering:

- Setup/connection
- Performance
- Interoperability (ODBC application, ODBC driver, ODBC Driver Manager, or data source)

This chapter describes these three types of issues, provides some typical causes of the issues, lists some diagnostic tools that are useful to troubleshoot the issues, and, in some cases, explains possible actions you can take to resolve the issues.

Setup/Connection Issues

You are experiencing a setup/connection issue if you are encountering an error or hang while you are trying to make a database connection with the ODBC driver or are trying to configure the ODBC driver.

Some common errors that are returned by the ODBC driver if you are experiencing a setup/connection issue include:

- `Specified driver could not be loaded.`
- `Data source name not found and no default driver specified.`
- `Cannot open shared library: libodbc.sl.`
- `ORA-12203: Unable to connect to destination.`
- `ORA-01017: invalid username/password; logon denied.`

Troubleshooting the Issue

Some common reasons that setup/connection issues occur are:

- The library path environment variable is not set correctly.

  NOTE: The 32-bit and 64-bit Salesforce drivers require that you set the library path environment for your operating system to the directory containing your 32-bit JVM's libjvm.so [sl | a] file, and that directory's parent directory before using the driver.

  HP-UX ONLY:

  - When setting the library path environment variable on HP-UX operating systems, specifying the parent directory is not required.
  - You also must set the LD_PRELOAD environment variable to the fully qualified path of the libjvm.so[sl].

The library path environment variable is:

32-bit Drivers

- PATH on Windows
- LD_LIBRARY_PATH on Solaris, Linux and HP-UX Itanium
- SHLIB_PATH on HP-UX PA_RISC
- LIBPATH on AIX

64-bit Drivers

- PATH on Windows
- LD_LIBRARY_PATH on Solaris, HP-UX Itanium, and Linux
- LIBPATH on AIX

- The database and/or listener are not started.
- The ODBCINI environment variable is not set correctly for the ODBC drivers on UNIX and Linux.
- The ODBC driver's connection attributes are not set correctly in the system information file on UNIX and Linux (refer to "Data Source Configuration" in Chapter 4 of the *DataDirect Connect Series for ODBC User's Guide*). For example, the host name or port number are not correctly configured. Refer to individual driver chapters in the *DataDirect Connect Series for ODBC User's Guide* for a list of connection string attributes that are required for each driver to connect properly to the underlying database.

For UNIX and Linux users: Refer to Chapter 4 "Configuring the Product on UNIX/Linux" in the *DataDirect Connect Series for ODBC User's Guide* for more information. See also "The Test Loading Tool" on page 15 for information about a helpful diagnostic tool.

Interoperability Issues

Interoperability issues can occur with a working ODBC application in any of the following ODBC components: ODBC application, ODBC driver, ODBC Driver Manager, and/or data source. Refer to "What Is ODBC?" in Chapter 2 of the *DataDirect Connect Series for ODBC User's Guide* for more information about ODBC components.

For example, any of the following problems may occur because of an interoperability issue:

- SQL statements may fail to execute.
- Data may be returned/updated/deleted/inserted incorrectly.
- A hang or core dump may occur.

Troubleshooting the Issue

Isolate the component in which the issue is occurring. Is it an ODBC application, an ODBC driver, an ODBC Driver Manager, or a data source issue?

To troubleshoot the issue:

1. Test to see if your ODBC application is the source of the problem. To do this, replace your working ODBC application with a more simple application. If you can reproduce the issue, you know your ODBC application is **not** the cause.

   On Windows, you can use ODBC Test, which is part of the Microsoft ODBC SDK, or the example application that is shipped with the DataDirect Connect Series *for* ODBC drivers. See "ODBC Test" on page 15 and "The example Application" on page 19 for details.

   On UNIX and Linux, you can use the example application that is shipped with the DataDirect Connect Series *for* ODBC drivers. See "The example Application" on page 19 for details.

2. Test to see if the data source is the source of the problem. To do this, use the native database tools that are provided by your database vendor.

3. If neither the ODBC application nor the data source is the source of your problem, troubleshoot the ODBC driver and the ODBC Driver Manager.

   In this case, we recommend that you create an ODBC trace log to provide to Customer Support. See "ODBC Trace" on page 11 for details.

Performance Issues

Developing performance-oriented ODBC applications is not an easy task. You must be willing to change your application and test it to see if your changes helped performance. Microsoft's *ODBC Programmer's Reference* does not provide information about system performance. In addition, ODBC drivers and the ODBC Driver Manager do not return warnings when applications run inefficiently.

Some general guidelines for developing performance-oriented ODBC applications include:

- Use catalog functions appropriately.
- Retrieve only required data.
- Select functions that optimize performance.
- Manage connections and updates.

Refer to Chapter 5 "Designing ODBC Applications for Performance Optimization" in the *DataDirect Connect Series for ODBC Reference* for complete information.

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