


Easysoft[®] Data Access
dbExpress-ODBC Gateway

**Installation Guide and User
Manual**





This manual documents version 1.1.n of the Easysoft dbExpress-ODBC Gateway.

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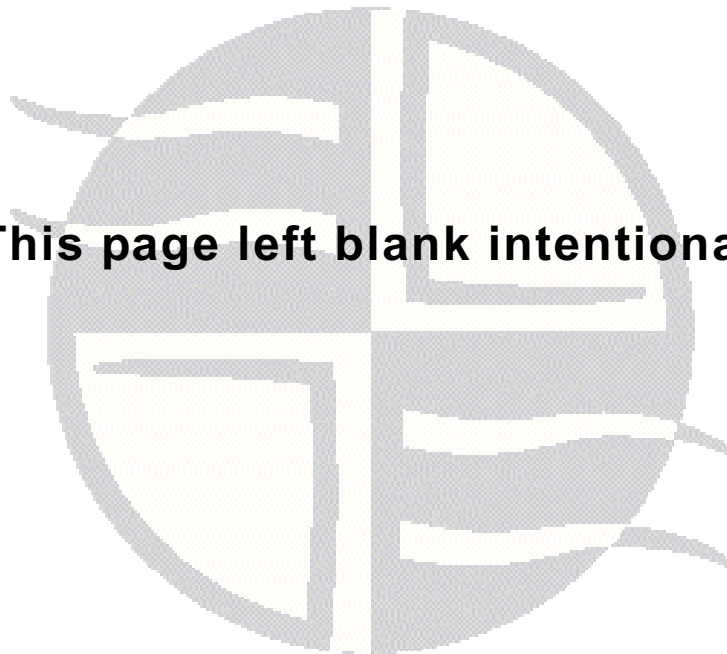
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PREFACE



About this manual

This manual is intended for use by anyone who wants to access ODBC data sources from applications developed using Borland's Kylix or Delphi RAD applications.

Chapter Guide

Intended Audience

Displaying the Manual

Notational Conventions

Typographical Conventions

Contents

Trademarks



PREFACE

About this manual

Intended Audience

The sections written for the Microsoft Windows platforms require some familiarity with the use of buttons, menus, icons and text boxes. If you have any experience of Apple Macintosh computers, Microsoft Windows or the X Window System, you will have no difficulty with these sections.

The Unix-based sections require that you are experienced at using a Unix shell, and can perform basic functions like editing a file. More complex activities are detailed more clearly and do not require any knowledge of specialist Unix shells.

Displaying the Manual

This manual is available in the following formats:

- Portable Document Format (PDF), which can be displayed and printed using the Acrobat Reader, available free from Adobe at <http://www.adobe.com>.
- HTML (the format Easysoft recommend for viewing onscreen).

Notational Conventions

Across the range of Easysoft manuals you will encounter passages that are emphasized with a box and a label.

A *note box* provides additional information that may further your understanding of a particular procedure or piece of information relating to a particular section of this manual:

NB Note boxes often highlight information that you may need to be aware of when using a particular feature.

A *reference box* refers to resources external to the manual, such as a useful website or suggested reading:

REF For more manuals that use this convention, see the rest of the Easysoft documentation.

A *platform note* provides platform-specific information for a particular procedure step:

Linux

In Linux you must log on as the `root` user in order to make many important changes.

A *caution box* is used to provide important information that you should check and understand, prior to starting a particular procedure or reading a particular section of this manual:

Caution!

Be sure to pay attention to these paragraphs because Caution boxes are important!

Information has also been grouped within some chapters into two broad classes of operating system, Windows and Unix, for which side tabs are used to help you turn to the section relevant to you.

Typographical Conventions

To avoid ambiguity, typographic effects have been applied to certain types of reference:

- User interface components such as icon names, menu names, buttons and selections are presented in bold, for example:

Click **Next** to continue.

Where there is a chain of submenus, the following convention is used:

Choose **Start > Programs > Command Prompt**.

- Commands to be typed are presented using a monotype font, for example:

At the command prompt type `admin`.

- Keyboard Commands

It is assumed that all typed commands will be committed by pressing the *<Enter>* key, and as such this will not normally be indicated in this manual. Other key presses are italicized and enclosed by angle brackets, for example:

Press *<F1>* for help.

- File listings and system names (such as file names, directories and database fields) are presented using the monotype plain text style.

Contents

- **Introduction**
Introduces the Easysoft dbExpress-ODBC Gateway.
- **Installation**
Explains how to install the Easysoft dbExpress-ODBC Gateway.
- **Appendices**
Comprising a Technical Reference and Glossary.



PREFACE

About this manual

Trademarks

Throughout this manual, *Windows* refers generically to Microsoft Windows 7, 8, 2012 R2, 10, 2016, 2019 or 2022, which are trademarks of the Microsoft Corporation. The X Window system is specifically excluded from this and is referred to as *The X Window System* or just *X*.

Note also that although the name UNIX is a registered trademark of The Open Group, the term has come to encompass a whole range of UNIX-like operating systems, including the free, public Linux and even the proprietary Solaris. Easysoft use Unix (note the case) as a general term covering the wide range of Open and proprietary operating systems commonly understood to be Unix ‘flavors’.

Easysoft and Easysoft Data Access are trademarks of Easysoft Limited.

INTRODUCTION

1

Introducing the Easysoft dbExpress-ODBC Gateway

Easysoft Data Access is a series of programs that allow you to have heterogeneous access to any database on any platform.

With Easysoft software you can connect applications on more platforms to more database systems than ever before.

This section explains what the Easysoft dbExpress-ODBC Gateway is and how it works, and how to obtain and test the unixODBC driver manager.

Chapter Guide

- **Deployment**
- **Functionality**
- **Compatibility**
- **Obtaining the unixODBC driver manager**
- **Testing the unixODBC driver manager**

INTRODUCTION

Introducing the Easysoft dbExpress-ODBC Gateway

Deployment

The Easysoft dbExpress-ODBC Gateway consists of a library loaded by the dbExpress part of an application, which links to either the target ODBC 3 driver, or (preferably) an ODBC 3 driver manager which in turn links to an ODBC 2 or an ODBC3 driver:

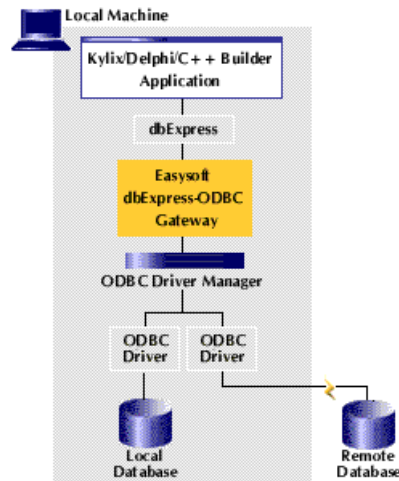


Figure 1: Easysoft dbExpress-ODBC Gateway deployment

Functionality

The Easysoft dbExpress-ODBC Gateway allows applications developed using Borland's Kylix (on Unix platforms), Delphi or C++ Builder (under Windows platforms) applications to access data in any local or remote ODBC compliant database.

It enables users to develop for ODBC and deploy against any database, anywhere on the network.

Compatibility

The Easysoft dbExpress-ODBC Gateway is compatible with both the Microsoft ODBC Driver Manager and unixODBC, the open source ODBC driver manager available on Linux and Unix platforms.

Database systems which can be accessed include Postgres, MySQL, InterBase, DB2, Oracle, Microsoft SQL Server, Microsoft Access and every other database which has a Windows or Unix compatible ODBC driver.

Obtaining the unixODBC driver manager

The Easysoft dbExpress-ODBC Gateway has been developed using the driver manager supplied as part of the unixODBC source.

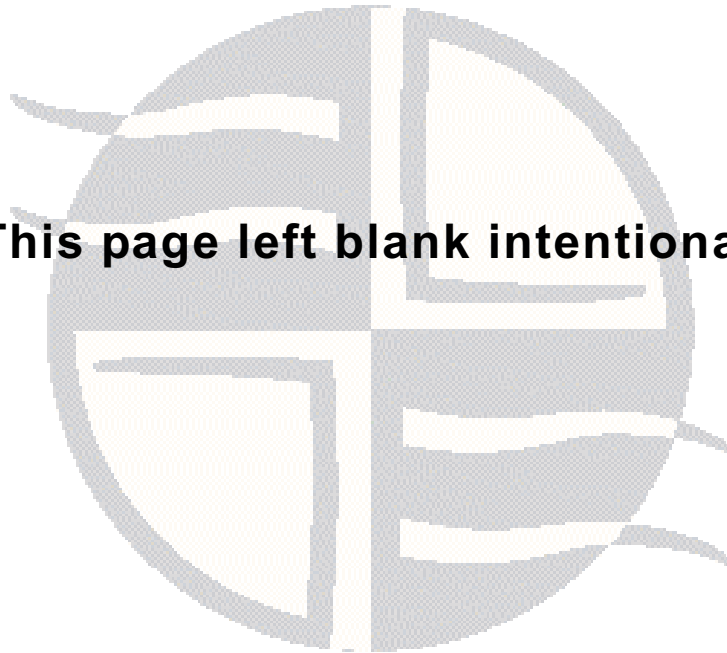
This should be downloaded from <http://www.unixodbc.org> and built on your target machine before using the Easysoft dbExpress-ODBC Gateway.

Testing the unixODBC driver manager

Easysoft recommend that you should prove that the connection between the driver manager, the ODBC driver and the target database is working before you start to configure the Easysoft dbExpress-ODBC Gateway, as this will help you to pinpoint the source of any problems you encounter.

The unixODBC web site (<http://www.unixodbc.org>) shows how you can use either `isql` or the unixODBC `DataManager` utility to verify your DSN setup.

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INSTALLATION

Installing the Easysoft dbExpress-ODBC Gateway

This section explains how to install, license and remove the Easysoft dbExpress-ODBC Gateway on supported Windows and Unix platforms.

The Windows installation can be carried out by anyone with local administrator privileges for the target machine.

The Unix installation assumes you are, or have available for consultation, a system administrator.

Chapter Guide

- **Obtaining the Easysoft dbExpress-ODBC Gateway**
- **What to install**
- **Installing on Windows**
- **Uninstalling on Windows**
- **Installing on Unix**
- **Uninstalling on Unix**

Obtaining the Easysoft dbExpress-ODBC Gateway

There are three ways to obtain the Easysoft dbExpress-ODBC Gateway:

- The Easysoft web site is available 24 hours a day at <http://www.easysoft.com> for downloads of definitive releases and documentation.

Select **Download** from the Easysoft dbExpress-ODBC Gateway section of the website and then choose the platform release that you require.

First time visitors must complete the new user form and click **Register**. Note that your personal Internet options may require you to login and click **Continue** if you have previously registered.

- The Easysoft FTP server is available 24 hours a day at <ftp://ftp.easysoft.com>, containing free patches, upgrades, documentation and beta releases of Easysoft products, as well as definitive releases.

Change to the `pub/kylix` directory and then choose the platform release that you require.

- You can order Easysoft software on CD by email, telephone or post (see [Contact Details](#)).

What to install

The name of the Easysoft dbExpress-ODBC Gateway install file varies from platform to platform, but is of the form:

- `dbxodbc-x.y.z.zip` (Windows)

– OR –

- `libsqlodbc.x.y.z.tar.gz` (Unix)

where "x" is the major version number, "y" is the minor version number and "z" is the build index, which is incremented when minor changes are made.

NB

Select the highest release available for your platform within your licensed major version number (installing software of a different major version number requires a new Easysoft license).

Unix filenames may also be suffixed with `.gz` for a "gzipped" archive, or `.Z` for a "compressed" archive.

NB

If you download a Unix file using Windows, the browser may corrupt the filename. For example, if you download a `.gz` file and Windows corrupts the filename, it may not be obvious that the file is gzipped. Use file *filename* to find out the file type of the downloaded file.

INSTALLATION

Installing the Easysoft dbExpress-ODBC Gateway

You can now download a file and begin the installation process.

Caution!

As long as you stop all running applications (under Windows), or any software either from Easysoft or using Easysoft drivers (under Unix), it is safe to reinstall or upgrade the Easysoft dbExpress-ODBC Gateway without uninstalling.

If you do uninstall, you should first back up any configuration data that you still need, as uninstalling some Easysoft products will result in this information being deleted (license details remain in place).

Refer to the section relevant to your platform to continue:

- **"Installing on Windows" on page 21**
- **"Uninstalling on Windows" on page 23**
- **"Installing on Unix" on page 24**
- **"Uninstalling on Unix" on page 26**

Installing on Windows

The distribution for the Easysoft dbExpress-ODBC Gateway under Windows consists of a zip file which contains a text file called `Readme.win32` and a dynamic link library file called `dbexpodbc.dll`.

To install:

1. Copy `dbexpodbc.dll` into either:
the `C:\WINNT\System32` Windows system directory

Win 9x

Under Windows 9x, the Windows system directory is called `C:\Windows\System`.

– OR –

the `Delphi6\Bin` directory.

NB

If the Delphi directory is selected then the driver will only be usable within the Delphi6 IDE.

2. Edit the dbExpress setup files, which should be found in the **Program Files > Common Files > Borland Shared > DBExpress** directory:

- In the drivers `bxdrivers.ini` file, include the line `ODBC=1` to add ODBC to the list of installed drivers:

```
[Installed Drivers]
```

```
.
```

```
.
```

```
.
```

```
ODBC=1
```

INSTALLATION

Installing the Easysoft dbExpress-ODBC Gateway

- In the drivers `bxdriers.ini` file, add an ODBC section to describe the Easysoft dbExpress-ODBC Gateway:

```
[ODBC]

GetDriverFunc=getSQLDriverODBC

LibraryName=DBEXPODBC.DLL

VendorLib=ODBC32.DLL

BlobSize=-1

Database=DBNAME

Password=password

User_Name=user

RowSetSize=
```

where `LibraryName` points to the Easysoft dbExpress-ODBC Gateway driver and `VendorLib` to the ODBC Driver Manager.

- In the connections `dbxconnections.ini` file, add a section to describe your specific data source:

```
[ib]

DriverName=ODBC

BlobSize=-1

Database=ib

Password=masterkey

User_Name=sysdba

RowSetSize=
```

Database indicates the DSN that will be connected to using ODBC. An alternative syntax allows any Delphi user name or password to be overridden and to specify the "Database" attribute explicitly (see [Easysoft dbExpress-ODBC Gateway FAQ](#)):

```
Database=DSN=test;UID=user;PWD=password;Database=testdb  
Password and User_Name are passed to SQLConnect when  
your data source is accessed.
```

This example adds a DSN called `ib` (in this case to Borland InterBase).

NB The driver type is not important to the Easysoft dbExpress-ODBC Gateway, as the loading of the ODBC driver is performed by the driver manager.

`RowsetSize=` enables an issue to be addressed where only 20 rows are returned to dbExpress by default (see [Easysoft dbExpress-ODBC Gateway FAQ](#)). Amend this line to `RowsetSize=0` to return the full RowSet.

Uninstalling on Windows

To uninstall the Easysoft dbExpress-ODBC Gateway under Windows, delete the `dbexpodbc.dll` file from the install directory into which they were copied, as specified in [step 1 on page 21](#).

Installing on Unix

The distribution file for the Easysoft dbExpress-ODBC Gateway under Unix consists of a text file called `Readme` and a dynamic shared library called `libsqlodbc`.

To install:

1. Copy all the `libsqlodbc.so*` files to a location that the dynamic linker on the system can find, such as `/usr/lib`, `/lib` or `/usr/local/lib` (if it is included in `/etc/ld.so.conf`).
2. Edit the Borland driver and connection setup files, which are named `$HOME/.borland/dbxdrivers` and `$HOME/.borland/dbxconnections` respectively:

- In the drivers `bxdrivers.ini` file, add ODBC to the list of installed drivers:

```
[Installed Drivers]
```

```
.  
.
.
```

```
ODBC=1
```

- In the drivers `bxdrivers.ini` file, add an ODBC section to describe the Easysoft dbExpress-ODBC Gateway:

```
[ODBC]
```

```
GetDriverFunc=getSQLDriverODBC
```

```
LibraryName=libsqlodbc.so
```

```
VendorLib=libodbc.so
```



```
BlobSize=-1  
Database=DBNAME  
Password=password  
User_Name=user  
RowsetSize=
```

where `LibraryName` points to the Easysoft dbExpress-ODBC Gateway driver and `VendorLib` to the ODBC Driver Manager.

- In the connections `dbxconnections.ini` file, add a section to describe your specific data source:

This example adds a DSN called `ib` (in this case to Borland InterBase).

NB The driver type is not important to the Easysoft dbExpress-ODBC Gateway, as the loading of the ODBC driver is performed by the driver manager.

```
[ib]  
DriverName=ODBC  
BlobSize=-1  
Database=ib  
Password=masterkey  
User_Name=sysdba  
RowsetSize=
```

INSTALLATION

Installing the Easysoft dbExpress-ODBC Gateway

Database indicates the DSN that will be connected to using ODBC. An alternative syntax allows any Delphi user name or password to be overridden and to specify the "Database" attribute explicitly (see [Easysoft dbExpress-ODBC Gateway FAQ](#)):

```
Database=DSN=test;UID=user;PWD=password;Database=testdb
```

Password and UID are passed to SQLConnect when your data source is accessed.

RowsetSize= enables an issue to be addressed where only 20 rows are returned to dbExpress by default (see [Easysoft dbExpress-ODBC Gateway FAQ](#)). Amend this line to RowsetSize=0 to return the full RowSet.

Uninstalling on Unix

To uninstall the Easysoft dbExpress-ODBC Gateway under Unix, delete all the `libsqlodbc.so*` files from the install directory into which they were copied, as specified in [step 1 on page 24](#).

TECHNICAL REFERENCE



Technical Reference

This section contains extra information relating to the deployment of the Easysoft dbExpress-ODBC Gateway.

Appendix Guide

- [Shared ODBC functions](#)
- [Compliance](#)
- [Build Issues](#)
- [Connectivity](#)

Shared ODBC functions

If you wish either to connect directly to a driver or via another driver manager, this is the list of ODBC functions that the Easysoft dbExpress-ODBC Gateway driver expects to find in the shared library referenced by the `VendorLib` setting in the drivers file:

`SQLAllocHandle`

`SQLFreeHandle`

`SQLSetEnvAttr`

`SQLConnect`

`SQLDriverConnect`

`SQLDisconnect`

`SQLGetDiagRec`

`SQLGetInfo`

`SQLTables`

`SQLFreeStmt`

`SQLFetch`

`SQLNumResultCols`

`SQLColAttribute`

`SQLGetData`

`SQLColumns`

`SQLPrepare`

`SQLExecute`

`SQLExecDirect`

SQLRowCount
SQLStatistics
SQLCloseCursor
SQLPrimaryKeys
SQLNumParams
SQLBindParameter
SQLDescribeParam
SQLEndTran
SQLSetConnectAttr
SQLProcedures
SQLMoreResults
SQLProcedureColumns
SQLGetConnectAttr
SQLGetCursorName
SQLSetStmtAttr
SQLGetStmtAttr

Compliance

Note that many Linux ODBC drivers (**PostgreSQL**, for example) are still only ODBC 2 compliant and therefore will not work directly without a driver manager.

The use of an ODBC 3 driver manager will solve this problem.

Build Issues

If you are using Kylix 1 and it has stopped working with build 1.0.18 of the Easysoft dbExpress-ODBC Gateway, then please contact Easysoft via support@easysoft.com to obtain an alternative build, as version 1.0.18 has been linked to work with Kylix 2 only.

Note that this restriction with Kylix 1 is only present in the trial driver, because of the need to create a splash screen.

Connectivity

The Easysoft dbExpress-ODBC Gateway has been used successfully with the following drivers:

- **PostgreSQL** (part of the unixODBC distribution).
- The **Easysoft ODBC-Interbase Driver**.
- The **Easysoft ODBC-ODBC Bridge** to Microsoft SQL Server and Microsoft Access.

If you have successfully used other drivers, please let us know and they will be added to this list.

GLOSSARY

B

Terms and definitions

API (Application Programmer Interface)

A published set of function calls and constants allowing different programmers to utilize a ready-written library of subroutines.

Application

A program that applies the computer to solving some real-world problem. In ODBC terms, it is the program connecting to the data source.

Authorization code

You must have an authorization code for the Easysoft product you wish to license in order to obtain a purchased license. When you purchase a product your authorization code is emailed to you. You do not need an authorization code to obtain a trial license.

Client

A process performing tasks local to the current user, for example, formatting and displaying a report from data retrieved from the server.

Client/Server

The architecture whereby one process (the server) keeps track of global data, and another task (the client) is responsible for formatting and presenting the data. The client connects to the server and requests queries or actions be performed on its behalf. Often these processes run on different hosts across a local-area network.

Column

The vertical dimension of a table. Columns are named and have a domain (or type).

Database

A collection of data files.

Data source

In ODBC terms, a data source is a database or other data repository coupled with an ODBC Driver, which has been given a Data Source Name (see "**DSN**" on page 33) to identify it to the ODBC Driver Manager.

Data type

The specification of permitted values. A data type limits the values which are allowed to be used.

DBMS

Database Management System - software that handles access to a database.

Download

To retrieve data from a remote machine (or the Internet) to your local machine. Mechanisms for achieving this include FTP and the World Wide Web.

Driver

See **ODBC driver**.

Driver Manager

Software whose main function is to load ODBC drivers. ODBC applications connect to the Driver Manager and request a data source name (DSN). The Driver Manager loads the driver specified

in the DSN's configuration file. In Windows, the ODBC Data Source Administrator is used to set up the Driver Manager.

DSN

Data Source Name. A name associated with an ODBC data source. Driver Managers, such as unixODBC or the Microsoft Windows Driver Manager, use the Data Source Name to cross-reference configuration information and load the required driver.

Field

A placeholder for a single datum in a record, for example you can have a Surname field in a Contact Details record. Fields are sometimes referred to as cells.

FTP

File Transfer Protocol - a standard method of transferring files between different machines.

Host

A computer visible on the network.

HTTP

HyperText Transfer Protocol. The means of transferring web pages.

Middleware

Software that is placed between the client and the server to improve or expand functionality.

License key

A string which is provided by Easysoft for use in the licensing process.

ODBC

Open Data Base Connectivity - a programming interface that enables applications to access data in database management systems that use Structured Query Language (SQL) as a data access standard.

ODBC driver

Software that accesses a proprietary data source, providing a standardized view of the data to ODBC.

Row

The horizontal dimension of a table. At its most basic, a row equates to a record within a file.

Schema

A specification of the structure of a database, including the tables, their column headings and keys.

Server

A computer, or host, on the network, designed for power and robustness rather than user-friendliness and convenience. Servers typically run around-the-clock and carry central corporate data.

OR

A process performing the centralized component of some task, for example, extracting information from a corporate database.

SQL

Structured Query Language (SQL) - an international standard text language for querying and manipulating databases.

System data source

In the context of ODBC under Microsoft Windows, a data source which can be accessed by any user on a given system. Compare with "**User data source**" on page 35.

Table

A data set in a relational database, composed of rows and columns.

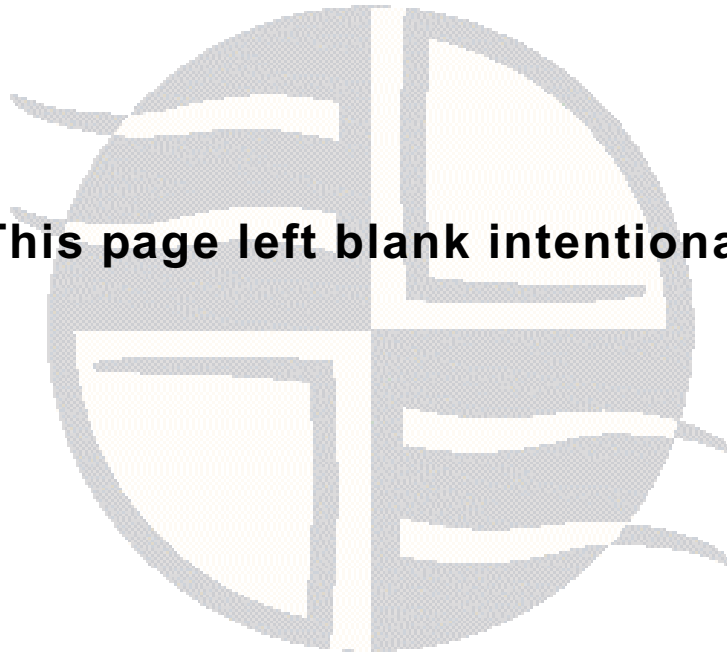
TCP/IP

Transmission Control Protocol/Internet Protocol - a standard method of accessing data on different machines.

User data source

In the context of ODBC under Microsoft Windows, a data source which can only be accessed by a specific user on a given system. Compare with "**System data source**" on page 35.

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