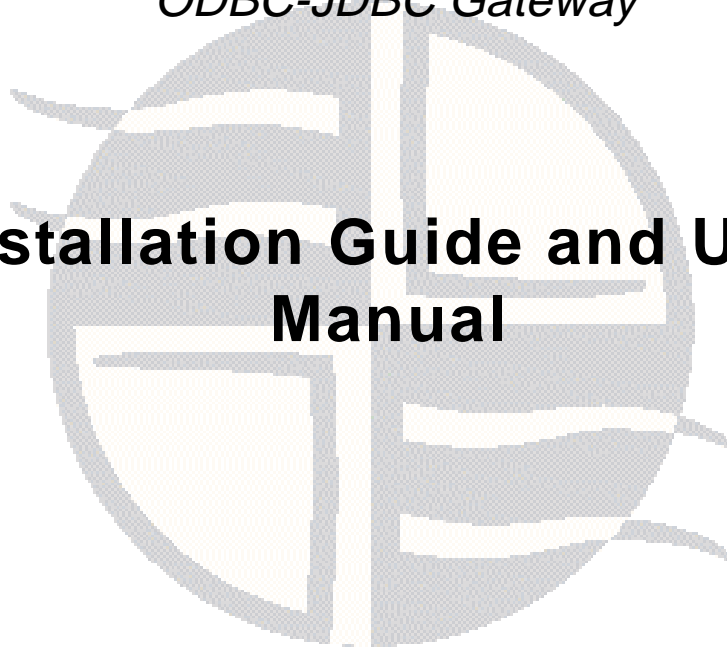


Easysoft Data Access

ODBC-JDBC Gateway

Installation Guide and User Manual





Version 13.

This manual documents version 1.3 of the Easysoft ODBC-JDBC Gateway.

Publisher: Easysoft Limited

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Thorp Arch

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United Kingdom

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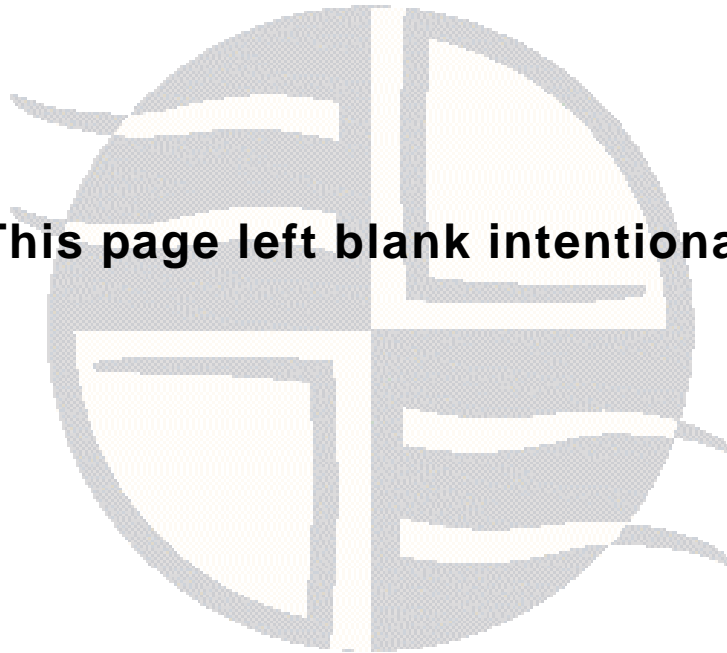


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PREFACE



About this manual

This manual is intended for use by anyone who wants to access JDBC data sources from ODBC 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 experience of using a Unix shell and basic functions like editing a file.

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 ODBC-JDBC Gateway.
- **Installation**
Explains how to install the Easysoft ODBC-JDBC Gateway.
- **Configuration**
Explains how to configure a data source for the Easysoft ODBC-JDBC Gateway.
- **Appendices**
Comprising a Glossary.

PREFACE

About this manual

Trademarks

Throughout this manual, *Windows* refers generically to Microsoft Windows 95, 98, 2000, NT, XP, ME or 2003 Server, 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

Introducing the Easysoft ODBC-JDBC Gateway

The Easysoft ODBC-JDBC Gateway enables ODBC applications to access JDBC data sources.

Chapter Guide

- [Why ODBC?](#)
- [Driver Managers](#)
- [Why JDBC?](#)
- [The Easysoft ODBC-JDBC Gateway](#)

INTRODUCTION

Introducing the Easysoft ODBC-JDBC Gateway

Why ODBC?

Historically, corporate data was held on large, centralized computing resources that performed all the processing required on it. Changes to the business practice meant changes had to be made to the corporate mainframe system. Worse still was the problem of integrating two or more of these highly individual systems, for example in the event of a corporate merger.

As the desktop computer improved in power, users began to want to access corporate data in order to process it on their own desktop. The client-server architecture became a popular goal: the central computing resource (server) would produce a subset of its data for a user-friendly tool (client). The client would use desktop computing power to format and present the data.

Database application writers and their customers found themselves with a key problem: it was necessary to produce one version of a piece of software for each DataBase Management System (DBMS) they wished to use it with.

Relational databases and SQL went part way toward alleviating the problem. For the first time there was a defined, open, standard language for querying databases. In theory at least, it was possible to use the same language in dealing with databases from a variety of manufacturers. The X/Open consortium went on to define a Call Level Interface (CLI) so that programmers could effectively use SQL within their own programs.

ODBC (Open Database Connectivity) has for many years been recognised as the de facto data access method for Windows applications and ODBC drivers are available on Windows for all leading database systems.

ODBC is an API definition, compliant with ANSI SQL and the X/Open SQL CLI which allows an application to be written without considering the intricacies of the particular database engine to which it connects.

An ODBC *driver* takes care of all database-specific code, if necessary transforming the structure of the underlying system into a relational framework.

Figure 1 on page 15 illustrates the principle of separating the driver from the application:

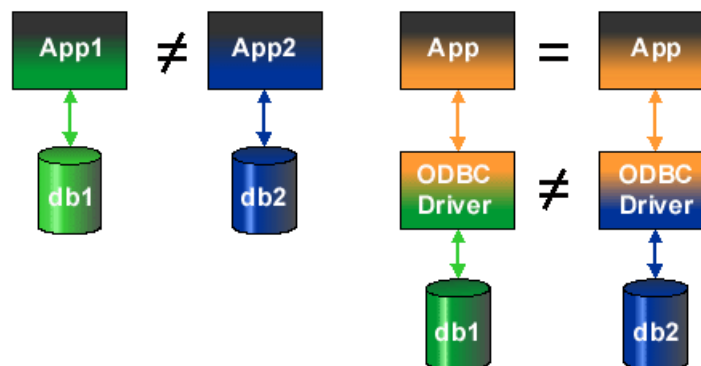


Figure 1: Before and after ODBC

Before ODBC, even if *App1* and *App2* were functionally equivalent, there had to be two programs, one for each DataBase Management System (DBMS), whereas ODBC permits the DBMS-specific parts of the program to be separated from the part that fulfils the functional requirement.

The result is that the completed application can be attached to any DBMS that has a corresponding driver. There are currently over fifty DataBase Management Systems supported in this way.

INTRODUCTION

Introducing the Easysoft ODBC-JDBC Gateway

Driver Managers

The barest ODBC system would include an ODBC-conformant driver accessing some data, and an ODBC-conformant application, linked to the driver library.

If commercial applications were distributed in this way, users would need to re-link their applications to their chosen driver whenever they wanted to access a different data source.

Instead, the application program is linked to a *driver manager*, which loads the required driver at runtime.

The driver manager also initializes the driver with a stored set of attributes.

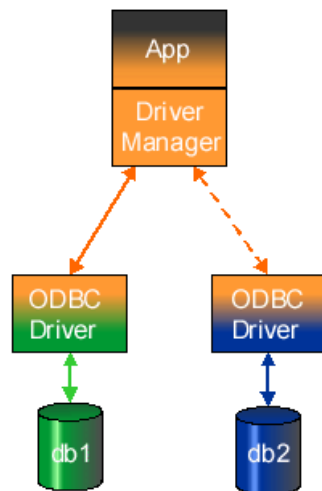


Figure 2: The Driver Manager as a dynamic linker

This approach provides three key results:

- Once developers have written applications to satisfy a business requirement, the application can be 'plugged in' to whatever database management system satisfies the technical demands.
- Administrators can connect a variety of applications (such as generic query tools) to their databases to browse and investigate the data.
- *Data access middleware* can be inserted between the ODBC application and driver to add strategic functionality such as joining heterogeneous databases into one data source or bridging a network.

Why JDBC?

JDBC provides a call-level API for SQL-based database access and is the industry standard for database-independent connectivity between the Java programming language and a wide range of databases.

The JDBC API makes it possible to:

- Establish a connection with a database
- Send SQL statements
- Process the results

Support for JDBC technology has been built into many new products, ensuring that customers are not locked into any proprietary architecture and can continue to access information stored on different database management systems.

No configuration is required on client machines, as all connection information is defined by the JDBC URL used to access the server.

INTRODUCTION

Introducing the Easysoft ODBC-JDBC Gateway

The Easysoft ODBC-JDBC Gateway

ODBC has for many years been recognised as the de facto data access method for Windows applications. Java has introduced an alternative standard, known as JDBC (Java DataBase Connectivity).

A growing number of database systems targeted at the Java marketplace only provide access via JDBC, thus excluding the use of popular ODBC applications such as Microsoft Excel and Crystal Reports for reporting and analysis.

The Easysoft ODBC-JDBC Gateway is the solution to this problem, a fully functional ODBC 3.5 driver which allows you to access all your existing JDBC data sources from any ODBC 2.0, 2.5, 3.0 or 3.5 compliant application.

The Easysoft ODBC-JDBC Gateway uses the JNI (Java Native Interface) to load JDBC Driver classes and to call JDBC methods in the loaded JDBC drivers.

Version 1.3x, 1.4x or the latest 1.5x build of the Java Virtual Machine (JVM) and the Java2 Runtime Environment (JRE) must be installed on the target machine before attempting to install the Easysoft ODBC-JDBC Gateway.

All details concerning Java downloads and installation can be found on the Sun Java web site at <http://java.sun.com>.

The driver DLL file (`o2jg.dll`) contains an implementation of all the ODBC API functions and a separate DLL file (`o2jgs.dll`) contains ODBC Setup API functions.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

This section explains how to install, license and remove the Easysoft ODBC-JDBC 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 ODBC-JDBC Gateway**
- **What to install**
- **Installing on Windows**
- **Uninstalling on Windows**
- **Installing on Unix**
- **Uninstalling on Unix**

Obtaining the Easysoft ODBC-JDBC Gateway

There are three ways to obtain the Easysoft ODBC-JDBC 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 ODBC-JDBC 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/odbc-jdbc-gateway` 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 ODBC-JDBC Gateway distribution file varies from platform to platform, but is of the form:

- `odbc-jdbc-gateway-x_y_z-platform.exe` (Windows)

– OR –

- `odbc-jdbc-gateway-x_y_z-platform.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.

"platform" will vary depending on the operating system distribution you require.

NB

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

Unix filenames may also be suffixed with `.gz` for a "gzipped" archive, `.bz2` for a "bzip2ed" archive, or `.Z` for a "compressed" archive.

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

Caution!

As long as you stop all running applications, it is safe to reinstall or upgrade the Easysoft ODBC-JDBC 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).

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

Refer to the section relevant to your platform to continue:

- **"Installing on Windows" on page 23**
- **"Uninstalling on Windows" on page 37**
- **"Installing on Unix" on page 39**
- **"Uninstalling on Unix" on page 63**

Installing on Windows

1. Execute the file distribution that you downloaded in "**Obtaining the Easysoft ODBC-JDBC Gateway**" on page 20.

Caution!

Please shut down other Windows programs before installing. In particular, Microsoft Outlook can cause the installation routine to pause for several minutes when you start it.

There will be a short delay while setup prepares the wizard to guide you through the rest of the install procedure before the **Welcome** dialog box is displayed:

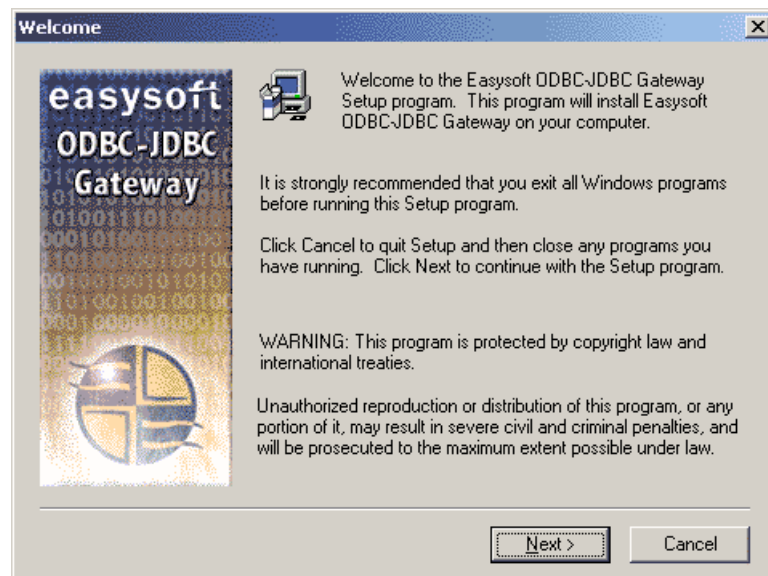


Figure 3: The Welcome dialog box

2. Click **Next** to continue.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

The **Software License Agreement** dialog box displays more information about licensing and the components which are installed.

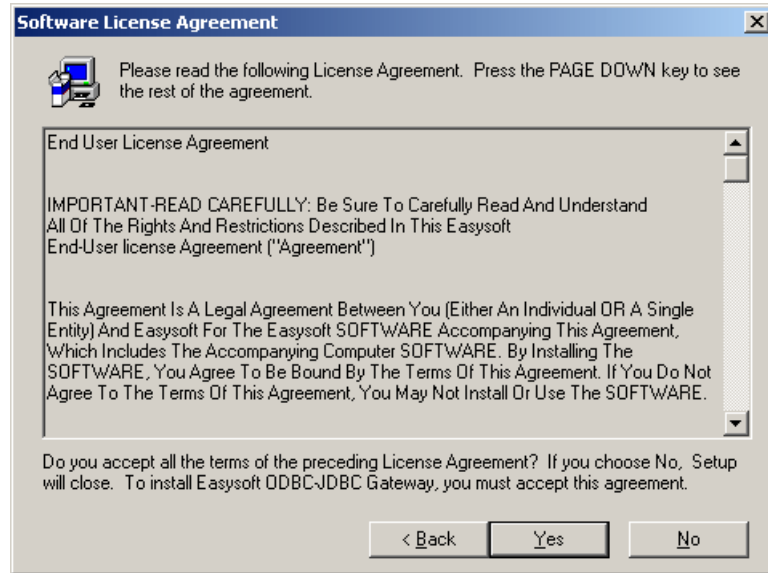


Figure 4: The Software License Agreement dialog box

3. When you have read this information, click **Yes** to continue.

The **Search for a Java Virtual Machine** dialog box is displayed:

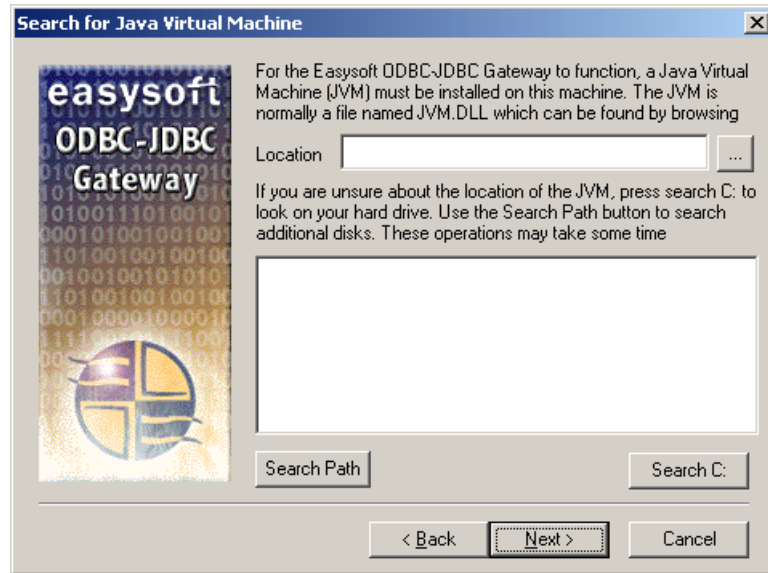


Figure 5: The Search for Java Virtual Machine dialog box

4. Click the ... button and then use the **Find JVM** dialog box to browse for the JVM that you want to use with the Easysoft ODBC-JDBC Gateway. The JVM is usually a file named `jvm.dll`. Alternatively, in the **Location** box, type the path of the JVM. For example:

```
C:\Program
Files\Java\jre1.5.0_02\bin\client\jvm.dll
```

– OR –

If you are unsure where the JVM is installed, click **Search C:**. Setup will search your C drive for JVMs. In the JVM search results list, double-click the JVM that you want to use.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

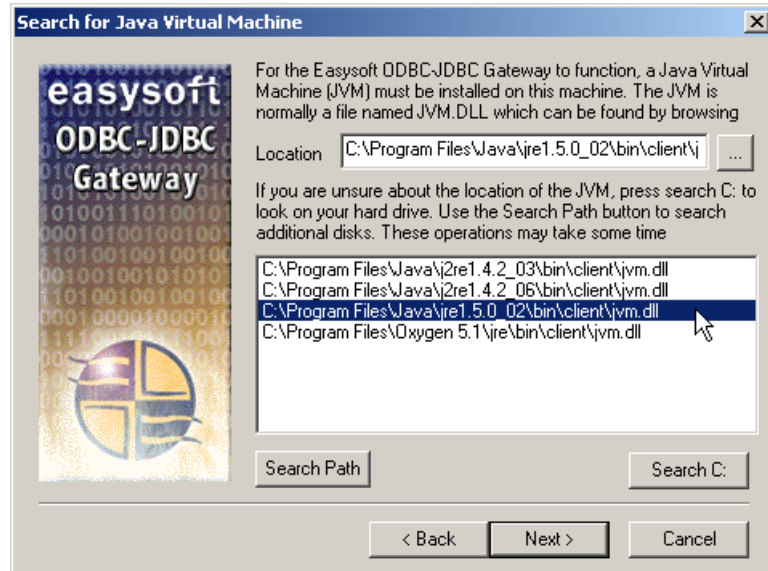


Figure 6: The JVM search results list

If Setup does not find any JVMs, click **Search Path** to search for JVMs on other drives.

5. If a JVM is specified in the **Location** box, click **Next**.

– OR –

If you were unable to locate a JVM, click **Cancel** and then **Exit Setup** to exit the installation.

NB

To obtain a JVM, download Java from either the Sun Java web site at <http://java.sun.com/j2se/1.4/download.html> or IBM at <http://www-106.ibm.com/developerworks/java/jdk/>, both of which have been tested with the Easysoft ODBC-JDBC Gateway.

If you download Java then you will need to reinstall the Easysoft ODBC-JDBC Gateway so that it is registered by the software (it is not necessary to uninstall).

The **Information** dialog box is displayed:

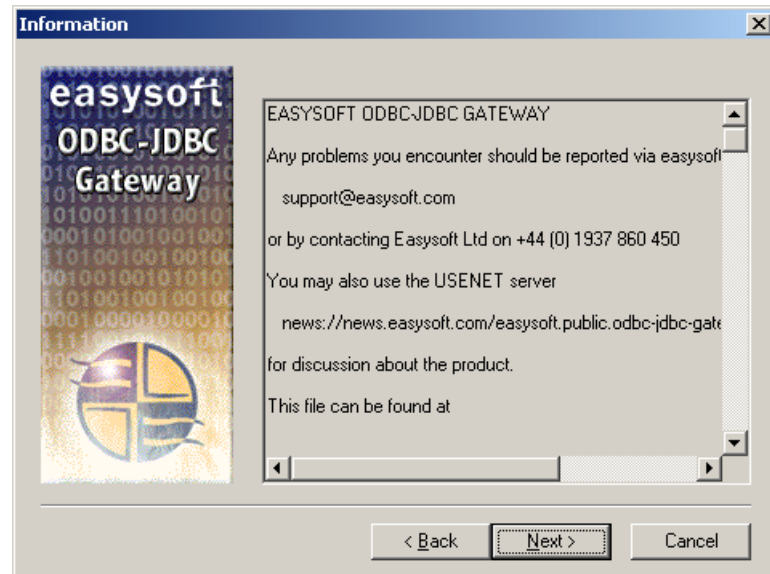


Figure 7: The Information dialog box

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

6. When you have read this information, click **Next** to continue.

The **User Information** dialog box is displayed:

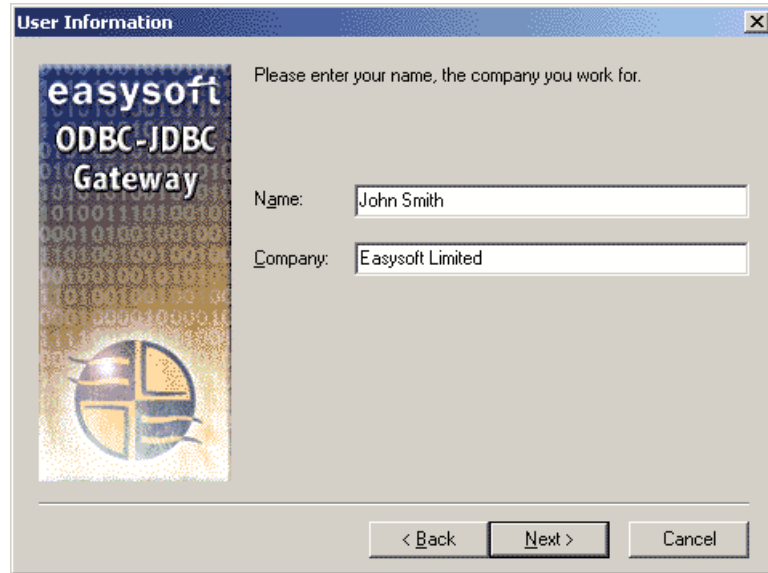


Figure 8: The User Information dialog box

7. Enter your name and the name of your company. Then click **Next** to continue.

NB

The name and company that you enter here will become the defaults in the License Manager later on.

You are then asked to choose where to install the Easysoft ODBC-JDBC Gateway files in the **Choose Destination Location** dialog box:

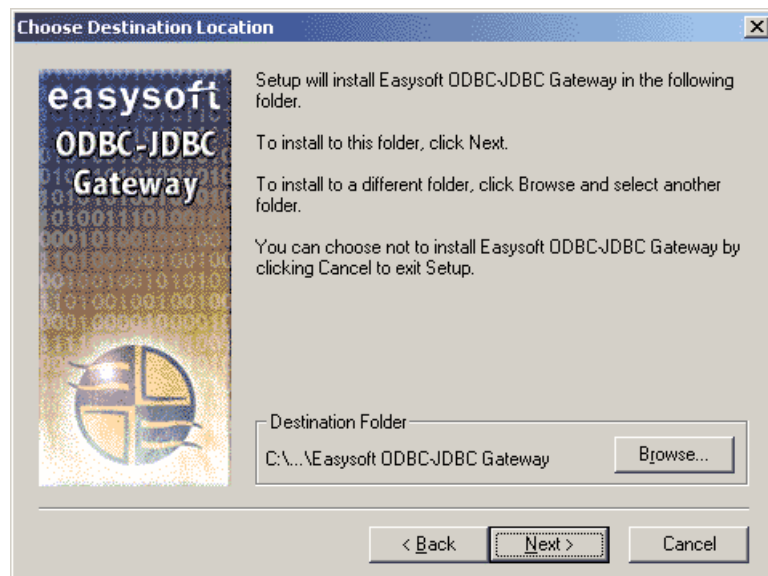


Figure 9: The Choose Destination Location dialog box

8. Click **Next** to install the application into the default directory location:

C:\Program Files\Easysoft\Easysoft ODBC-JDBC Gateway

– OR –

Click **Browse** and select an alternative directory location for the installation, before clicking **Next**.

The install program now starts the Easysoft License Manager (explained fully in the [Licensing Guide](#)).

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

The following types of license are available:

- a *free time-limited trial license* which gives you free and unrestricted use of the product for a limited period (usually 30 days).
- a *full license* if you have purchased the product. On purchasing the product you are given an authorization code which you should have to hand.

Easysoft Data Access License Manager

Contact Information

The following contact details are required to generate your license keys. If you have already registered with the Easysoft web site, please ensure your details are consistent with your registration.

Name: John Smith

E-Mail Address: john.smith@easysoft.com

Company: Easysoft

Telephone: 01937 860 000

Facsimile: 01937 860 001

Installed Licenses

License keys can be generated by choosing the Request option. To add licenses already supplied to you, choose the Enter License option.

Buttons: Finish, Help, Request License, Remove License, Remote License, Enter License

Figure 10: The License Manager window

9. Enter your contact details.

You **MUST** enter the **Name**, **E-Mail Address** and **Company** fields.

The **Telephone** and **Facsimile** fields are important if you require Easysoft to contact you by those methods.

10. Click **Request License**.

You are asked for a license type:

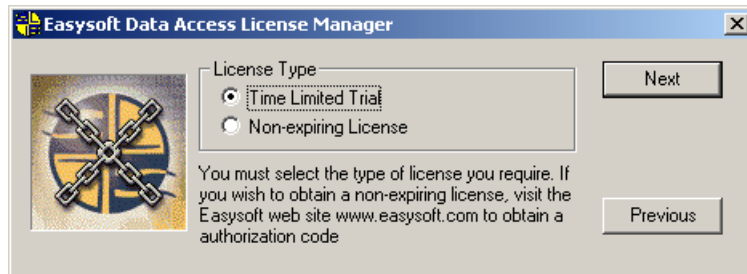


Figure 11: The License Type dialog box

11. For a trial license click **Time Limited Trial** and then click **Next**.

The License Manager asks what software you are licensing:



Figure 12: Select the product you are licensing

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

Select **Easysoft ODBC-JDBC Gateway** from the drop-down list and then click **Next**.

– OR –

If you have obtained an authorization code for a purchased license, select **Non-expiring License** and then click **Next**.

The License Manager requests an authorization code.

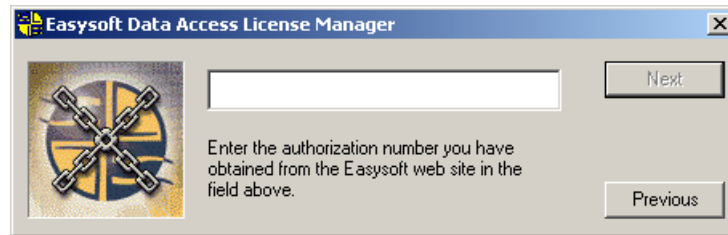


Figure 13: The Authorization Number dialog box

12. Enter the authorization code and then click **Next**.

The License Manager displays a summary of your details and allows you to choose the method of applying for your license:



Figure 14: The License Application dialog box

Choose **On-line Request** if your machine has a connection to the internet.

The License Manager then transmits a network packet to the license server at Easysoft. The whole process is automatic and you can proceed to **step 13 on page 34**.

NB Only your license request identifier and contact details as they are displayed in the main License Manager screen are sent to Easysoft.

The remaining three options (**Email Request**, **Print Request** and **View Request**) are all ways to obtain a license if your machine is offline (i.e. does not have a connection to the internet).

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

Each of these methods involves providing Easysoft with information including your site number (a number unique to your machine) and then waiting to receive your license key.

Instead of emailing, faxing or telephoning your details to Easysoft, you can enter them directly onto Easysoft's web site and your license key will be emailed to you automatically.

To use this method, click **View Request** to display your site number, then run a web browser and go to

<http://www.easysoft.com/sales/autolicense.phtml>.

Choose the type of license you require, enter your site number and then click **Continue**. Your license key will now be emailed to you.

When you receive the license key, you can activate it either by double-clicking the email attachment or by clicking **Enter License** on the License Manager main screen and pasting the license key into the dialog box.

A message is displayed, telling you how many licenses have been added.

NB

If you use the **Email Request** option, the license key is emailed to the email address as displayed on the License Manager main screen, not the `from:` address of your email.

13. Click **Finish** in the License Manager to return to the install program.

The **Setup Complete** dialog box is displayed:

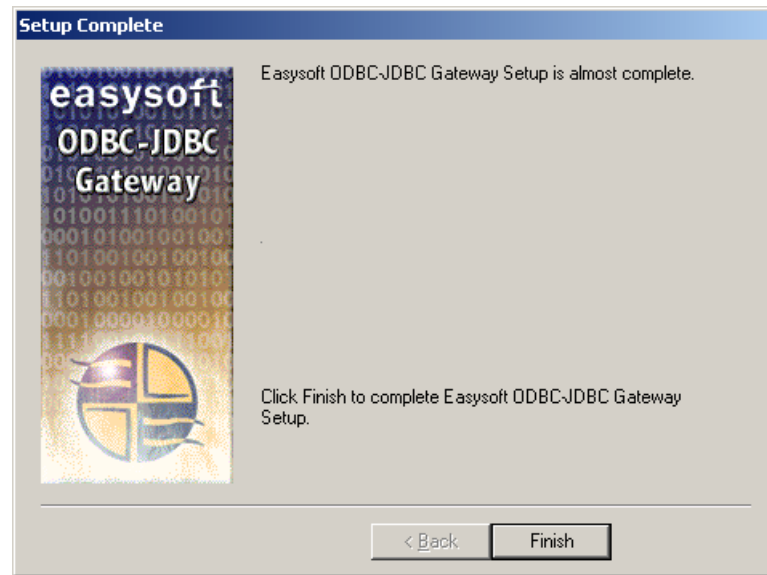


Figure 15: The Setup Complete dialog box

14. Click **Finish**.

The installation is complete.

A new **Programs>Easysoft>ODBC-JDBC Gateway** program group is added with links to this manual in PDF format, the Easysoft web site, a Getting Started Guide, Licensing documentation, and the Easysoft ODBC-JDBC Gateway News Group.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

VALIDATING THE INSTALLATION

The version number and installation details of the Easysoft ODBC-JDBC Gateway can be verified by running the **ODBC Data Source Administrator**.

1. Select **Start > Settings > Control Panel**, double-click **Administrative Tools** and then **Data Sources (ODBC)**.

9x

Select **Start > Settings > Control Panel** and double-click **ODBC Data Sources (32bit)**.

NT

Select **Start > Settings > Control Panel** and double-click **Data Sources (ODBC)**.

2. Select the **Drivers** tab and the Easysoft ODBC-JDBC Gateway installation details are displayed:

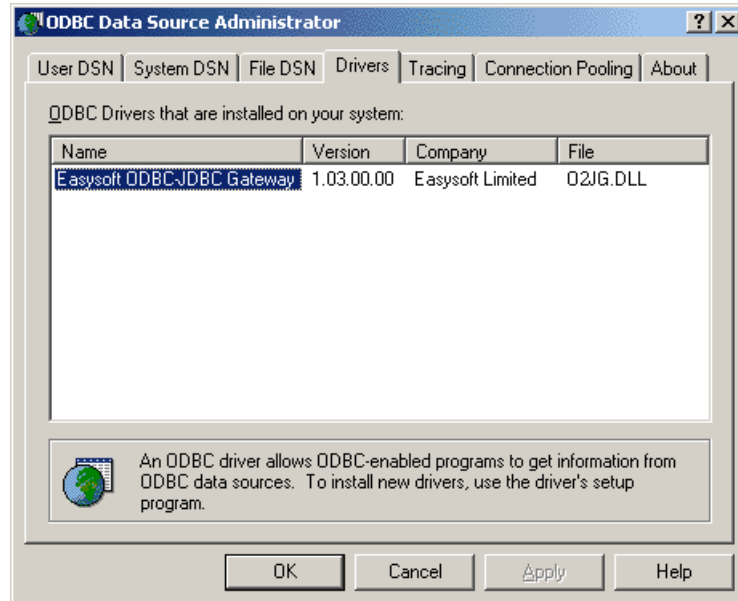


Figure 16: The ODBC Data Source Administrator Drivers tab

Uninstalling on Windows

This section explains how to remove the Easysoft ODBC-JDBC Gateway from your system.

1. Select **Start > Settings > Control Panel**, then double-click the **Add/Remove Programs** icon.

A list is displayed of applications that can be automatically removed.

2. Select **Easysoft ODBC-JDBC Gateway** and click **Add/Remove**.
3. Click **Yes** to confirm that you wish to remove the Easysoft ODBC-JDBC Gateway and all its components.

The system begins to remove all the components. If shared components seem not to be required, you will be prompted to decide whether or not to delete them.

NB	The Windows install/uninstall procedure incorporates a mechanism in the registry to determine whether or not shared files are still required by other programs. Sometimes this database can become out-of-date, such as when an application is deleted directly without using Add/Remove Programs , or when the registry is 'repaired' after a system crash.
-----------	---

4. If you feel confident with the registry (i.e. your system has had relatively few programs installed and removed) you should click **Yes** or **Yes to All** to continue.

– OR –

If you have any doubts (e.g. uninstall procedures have failed in the past) you should click **No** or **No to All**.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

The uninstall process removes the Easysoft ODBC-JDBC Gateway components from your system.

NB

If files have been created in any of the installation directories then these directories will not be removed. In this case, the uninstall program will issue a warning and you can click **Details** to find out what directories remain.

5. On completion, click **OK** to go back to the Control Panel **Install/Uninstall** window.
6. The uninstall process is complete.

Any licenses you obtained for the Easysoft ODBC-JDBC Gateway and other Easysoft products are held in the Windows registry.

Note that your licenses are not removed when you uninstall, so the product does not need to be relicensed if you reinstall or upgrade.

Installing on Unix

These instructions show how to install the Easysoft ODBC-JDBC Gateway on Unix platforms.

BEFORE YOU INSTALL

Requirements

The installation script has a minimal set of requirements:

- Bourne shell in `/bin/sh` (if your Bourne shell is not located there you may need to edit the first line of the install file).
- Various commonly used Unix commands such as:

```
grep, awk, test, cut, ps, sed, cat, wc, uname,  
tr, find, echo, sum, head, tee, id
```

If you are missing any of these commands, they can generally be obtained from the Free Software Foundation. As some machines have a broken tee command, the distribution comes with a tee replacement.

- Depending on the platform, you will need up to 10Mb of disk space free for the installed programs and up to 10Mb temporary space of the installation files themselves. If you install the unixODBC Driver Manager as well, these numbers increase by approximately 1.5Mb.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

- For Easysoft Licensing to work, you must either install in `/usr/local/easysoft` or symbolically link `/usr/local/easysoft` to wherever you chose to install the software. The installation will do this automatically for you so long as you run the installation as someone with permission to create `/usr/local/easysoft`.
- An ODBC Driver Manager. Easysoft ODBC-JDBC Gateway distributions contain the unixODBC Driver Manager but you can use an already installed unixODBC if you prefer.
- You do not have to be the `root` user to install Easysoft ODBC-JDBC Gateway but you will need permission to create a directory in the chosen installation path. Also, if you are not the `root` user it may not be possible for the installation to:
 1. Register the Easysoft ODBC-JDBC Gateway Client with unixODBC.
 2. Create the demo data source in the SYSTEM `odbc.ini` file.
 3. Update the dynamic linker entries (only some platforms).

If you are not `root`, these tasks will have to be done manually later. Easysoft recommend you install all Easysoft ODBC-JDBC Gateway components as the `root` user.

What you can install

This Easysoft ODBC-JDBC Gateway distribution contains:

- the Easysoft ODBC-JDBC Gateway ODBC Driver
- the unixODBC Driver Manager

You will need an ODBC Driver Manager to use the Easysoft ODBC-JDBC Gateway Client from your applications. Easysoft ODBC-JDBC Gateway distributions contain the unixODBC Driver Manager (see <http://www.unixodbc.org>). Most (if not all) Unix applications and interfaces (for example Perl DBD::ODBC, PHP, Python and so on) support the unixODBC Driver Manager. You do not have to install the unixODBC Driver Manager in this distribution as you can use an already installed unixODBC (whether that was installed with another Easysoft product, from your Operating System Vendor or even if you built it yourself). However, Easysoft ensure the unixODBC distributed with Easysoft ODBC Drivers has been tested with our drivers, so we recommend you use it.

If you choose to use an already installed unixODBC Driver Manager, the installation script will attempt to locate it. The installation looks in the standard places but if you have installed it in a non-standard location you will need to provide that location to the installation script when it prompts you. The installation primarily needs unixODBC's `odbcinst` command to install drivers and any data sources.

Where to install

This installation needs a location for the installed files. The default is `/usr/local`.

At the start of the installation you will be prompted for an installation path. All files are installed in a subdirectory of your specified path called "easysoft". For example, if you pick the default of `/usr/local`, the Easysoft ODBC-JDBC Gateway will be installed in `/usr/local/easysoft` and below.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

If you choose an install path different from the default then the installation will try to symbolically link `/usr/local/easysoft` to the `easysoft` in your chosen path. This allows us to distribute binaries with built in dynamic linker run paths. If you are not `root` or the path `/usr/local/easysoft` already exists and is not a symbolic link this will fail (see later for how this may be corrected manually). You should note that you cannot license Easysoft products until `/usr/local/easysoft` exists either as a symbolic link to your chosen install path or as the install path itself.

Changes made to your system

This installation installs files in subdirectories of the path requested at the start of the installation and depending on what is installed, a few changes may be made to your system as outlined below:

1. If you choose to install the Easysoft ODBC-JDBC Gateway into `unixODBC` then `unixODBC`'s `odbcinst` command will be run to add an entry to your `odbcinst.ini` file. You can locate this file with `"odbcinst -j"` (`odbcinst` will be in `/usr/local/easysoft/unixODBC/bin`) if you are using the `unixODBC` that comes with the Easysoft ODBC-JDBC Gateway.

The entry for Easysoft ODBC-JDBC Gateway will look similar to this:

```
[Easysoft ODBC-JDBC Gateway]
Description      = ODBC-JDBC Gateway
Driver          = /usr/local/easysoft/ojg/libo2jg.so
Setup           = /usr/local/easysoft/ojg/libo2jgS.so
JvmPath         = /usr/jdk1.3.1/jre/lib/i386/client/libjvm.so
FileUsage       = 1
DontDLClose    = 1
UsageCount     = 1
```

Obviously, the paths depend on where you installed Easysoft ODBC-JDBC Gateway and where your JVM is located. See **["Uninstalling on Unix" on page 63](#)** for ways to remove this.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

2. The installation installs an example data source into unixODBC. This entry will be added to your `SYSTEM odbc.ini` file. You can locate your `SYSTEM odbc.ini` file using `odbcinst -j`. The entry will look similar to this:

```
[SAMPLE_OJG]
Driver           = Easysoft ODBC-JDBC Gateway
Description      = sample OJG DSN
DriverClass     = com.borland.datastore.jdbc.DataStoreDriver
User            = uid
Password        = pwd
ClassPath       = /tmp/jdsserver6.jar
URL             = jdbc:borland:dsremote://server/C:\JDatastore6\bin\TEST.jds
Strip_Quote     = 1
With_Schema     = 0
Single_Statement = 0
```

See "[Uninstalling on Unix](#)" on page 63 for ways to remove this.

3. Dynamic Linker.

On operating systems where the dynamic linker has a file specifying locations for shared objects (Linux, FreeBSD), the installation will attempt to add paths under the path you provided at the start of the install to the end of this list.

On Linux, this is generally the file `/etc/ld.so.conf`.

On FreeBSD, this is generally the file `/etc/defaults/rc.conf`.

Reinstalling or installing when you already have other Easysoft products installed

Each Easysoft distribution contains common files shared between Easysoft products. These shared objects are placed in `/usr/local/easysoft/lib`. When you run an installation, the dates and versions of these files will be compared with the same files in the distribution and only updated if the files being installed are newer or have a later version number.

You should ensure that nothing on your system is using Easysoft software before starting an installation because on some platforms, files in use cannot be replaced. If a file cannot be updated, you will see a warning during the installation. You may review all warnings after the installation in the file called "warnings" in the directory you unpacked the distribution into.

If the installer detects you are upgrading a product, the installer will suggest you delete the product directory to avoid having problems with files in use. An alternative is to rename the specified directory.

If you are upgrading the Easysoft ODBC-JDBC Gateway, you will need a new license from Easysoft to use the new driver.

Gathering information required during the installation

During the installation you will be prompted for various information. Before installing you should determine:

- If you have unixODBC already installed and where it is installed. The install searches standard places like `/usr` and `/usr/local` but if you installed in a non-standard place and you don't install the unixODBC that comes with Easysoft ODBC-JDBC Gateway, you will need to know the location.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

INSTALLATION

Unpacking the distribution

The Easysoft ODBC-JDBC Gateway distribution for Unix platforms is distributed as a tar file. There are multiple copies of the same distribution with different levels of compression. You unpack the distribution as follows.

If the distribution file has been gzipped (i.e. the filename ends in `.gz`), then use:

```
gunzip odbc-jdbc-gateway-x.y.z-platform.tar.gz
```

If the distribution file has been bziped (i.e. the filename ends in `.bz2`), then use:

```
bunzip2 odbc-jdbc-gateway-x.y.z-platform.tar.bz2
```

If the distribution file has been compressed (i.e. the filename ends in `.Z`), then use:

```
uncompress odbc-jdbc-gateway-x.y.z-platform.tar.Z
```

You may have a distribution file which is not compressed at all (i.e. the filename ends in `.tar`).

To extract the installation files from the tar file use:

```
tar -xvf odbc-jdbc-gateway-x.y.z-platform.tar
```

This will create a directory with the same name as the tar file (without the `.tar` postfix) containing further archives, checksum files, an install script and various other installation files.

Change directory into the directory created by unpacking the tar file.

License to use

The license text can be found in the file `license.txt` and be sure to understand the terms before continuing, as you will be required to accept the license terms at the start of the installation.

Answering questions during the installation

Throughout the installation, you will be asked to supply the answer to some questions. In each case, the default will be displayed in square brackets and you need only press `<Enter>` to take the default. If there are alternative responses, these will be shown in round brackets; to pick one of these type them and press `<Enter>`.

For example:

```
Do you want to continue? (y/n) [n]:
```

The possible answers to this question are "y" or "n". The default when you enter nothing and hit `<Enter>` is "n".

Running the installer

Before you run the installer, make sure you have read the "**Before you install**" section. If you are considering running the installation as a non `root` user, we suggest you review this carefully as you will have to get a `root` user to manually complete some parts of the installation afterwards. Easysoft recommend installing as the `root` user. (If you are concerned about the changes that will be made to your system see "**Changes made to your system**" on page 42.)

To start the installation run:

```
./install
```

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

You will need to:

- Confirm your acceptance of the license agreement with "yes" or "no". See "**License to use**" on page 47.
- Enter a location where the software is to be installed. Easysoft recommend taking the default here. See "**Where to install**" on page 41..

NB

If you are upgrading Easysoft ODBC-JDBC Gateway you will need a new license from Easysoft.

The next step is Locating or installing unixODBC.

Locating or installing unixODBC

Easysoft strongly recommend you use the unixODBC Driver Manager because:

- The installation is designed to work with unixODBC and can automatically add ODBC drivers and DSNs during the install.
- Most applications and interfaces that can use ODBC know about unixODBC and so any new ODBC drivers or data sources you add with this installation will automatically become available to your applications and interfaces.
- unixODBC is currently maintained by Easysoft developer Nick Gorham. This means there is much greater experience with unixODBC within Easysoft and we will be able to provide better support for Easysoft ODBC-JDBC Gateway running under unixODBC. It also means that if you find a problem in unixODBC it is much easier for us to facilitate a fix.

- The unixODBC package contains much more than a driver manager. The aim of the unixODBC project is to provide all the ODBC functionality available on Windows for Unix operating systems. The unixODBC package may be built with the QT libraries to allow GUI configuration of DSNs and drivers. It also contains the GUI DataManager program which may be used to explore your ODBC data. The Easysoft ODBC-JDBC Gateway contains the code and shared object which is used by unixODBC's GUI ODBCConfig utility to add/delete and configure Easysoft ODBC-JDBC Gateway DSNs.

The installation will start by searching for an installed unixODBC.

There are two possible outcomes here:

1. If unixODBC is located a message will be output saying:

```
Found unixODBC under /path_to_unixODBC and it is  
version n.n.n
```

2. unixODBC is not found.

If unixODBC is not found in the standard places you will be asked whether you have it installed.

If you have it installed, you need to provide the argument given to unixODBC's configure as `--prefix`. i.e. if you built unixODBC with "configure --prefix=/usr/local/unixODBC" you enter "/usr/local/unixODBC". Generally the path required is the directory above where `odbcinst` is installed i.e. if `odbcinst` is in `/opt/unixODBC/bin/odbcinst` the required path is `/opt/unixODBC`.

If you have not got unixODBC installed, you should install the unixODBC included with Easysoft ODBC-JDBC Gateway.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

If you already have unixODBC installed you do not have to install the unixODBC included with Easysoft ODBC-JDBC Gateway but you might consider doing so if your version is older than the one included with Easysoft ODBC-JDBC Gateway.

The unixODBC in the Easysoft ODBC-JDBC Gateway distribution is not built with the default options in unixODBC's configure line:

- `--prefix=/etc`

This means the default SYSTEM `odbc.ini` file where SYSTEM dsn's are located will be `/etc/odbc.ini`.

- `--enable-drivers=no`

This means other ODBC drivers that come with unixODBC are not installed.

- `--enable-iconv=no`

This means unixODBC will not look for a `libiconv`. Warnings about not finding an `iconv` library were confusing our customers.

- `--enable-stats=no`

Disables unixODBC statistics which uses system semaphores to keep track of used handles. Many machines do not have sufficient semaphore resources to keep track of statistics and they are only available in the GUI ODBC Administrator anyway.

- `--enable-readline=no`

This disables readline support in `isql`.

We disabled this because it ties `isql` to the version of `libreadline` on the machine we build on. We build on as old a version of the Operating System we can for upwards compatibility. Many newer Linux machines no longer come with the older `readline` libraries and so enabling `readline` support renders `isql` unusable.

- `--prefix=/usr/local/easysoft/unixODBC`

This installs `unixODBC` into

`/usr/local/easysoft/unixODBC`.

Installing the Easysoft ODBC-JDBC Gateway Driver

The Easysoft ODBC-JDBC Gateway installation comprises of:

- Installing the Easysoft ODBC-JDBC Gateway driver.
- Registering the Easysoft ODBC-JDBC Gateway ODBC Driver with the `unixODBC` Driver Manager

If `unixODBC` is now installed (either installed by this installation or an existing copy was found) the Easysoft ODBC-JDBC Gateway ODBC Driver will be registered as an ODBC driver with the `unixODBC` Driver Manager.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

If you already have the Easysoft ODBC-JDBC Gateway registered with unixODBC, you will see a warning that Easysoft ODBC-JDBC Gateway is already registered and a list of the drivers unixODBC knows about. If you are installing the Easysoft ODBC-JDBC Gateway into a different directory than it was installed before, you will need to edit your `odbcinst.ini` file after the installation and correct the Driver and Setup paths as unixODBC's `odbcinst` will not update them if a driver is already registered.

- Creating an Easysoft ODBC-JDBC Gateway example source in unixODBC

If unixODBC is installed and you registered the Easysoft ODBC-JDBC Gateway with unixODBC, an example data source will be added to your `odbc.ini` file.

To use the example data source, you will need to update it for the JDBC driver you are using (see **"Post Installation" on page 56**).

If a data source called "ODBC_JDBC_SAMPLE" already exists the existing data source will be displayed and you have the option to replace it.

Licensing the Easysoft ODBC-JDBC Gateway

The program `/usr/local/easysoft/license/licshell` is used to obtain or list licenses.

Licenses are stored in the file `/usr/local/easysoft/license/licenses`. After obtaining a license, you should take a copy of this file in case something happens to it.

When you install the Easysoft ODBC-JDBC Gateway, the installation will ask you if you want to request an Easysoft ODBC-JDBC Gateway license:

```
Would you like to request a Easysoft ODBC-JDBC
Gateway license now (y/n) [y]:
```

You do not need to obtain a license during the installation, you can run `licshell` after the installation to obtain or view licenses.

If you answer yes to this the installation will run the `licshell` script. The process of obtaining a license is best described in the **Licensing Guide** and on the Easysoft web site.

To obtain a license automatically you will need to be connected to the Internet and allow outgoing connections to `license.easysoft.com` on port 8884. If you are not connected to the Internet or do not allow outgoing connections on port 8884 then the License Client can create a license request file which you can:

1. Enter at <http://www.easysoft.com/sales/autolicense.phtml> to obtain your license.
2. Mail, fax or telephone to Easysoft.

Obviously, option 1 is quickest if you have a web browser and access to the Internet.

Once the License Client has started you are presented with a menu of options which allow you to:

```
[0] exit
```

```
[1] view existing license
```

```
[n] obtain a license for the desired product.
```

Obviously, if you have not got any other Easysoft products licensed then option [1] will not show any existing licenses.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

To obtain a license, select one of the options from [2] onwards for the product you are installing. The License Client will then run a program that was installed for that product which generates a key which is used to identify the product and operating system (we need this key to license you).

Once you have picked the product to license (ODBC-JDBC Gateway), you need to supply:

1. Your full name
2. Your company name
3. An email contact address. This (currently) **must** be the email address you registered on the Easysoft web site.
4. Your telephone number (you need to specify this if you telephone the license request to us).
5. Your fax number (you need to specify this if you fax the license request to us).
6. A reference number. When applying for a trial license just hit *<Enter>* on this field as this field is used to enter a reference number we will supply you for full (paid) licenses.

You will then be asked for a method of obtaining the license where the choices are:

[1] Automatically by contacting the Easysoft License Daemon (this requires connection to the Internet and the ability to support an outgoing TCPIP connection to `license.easysoft.com` on port 8884).

[2] Write information to file so you can:

a) obtain your license at

<http://www.easysoft.com/sales/autolicense.phtml>

b) fax, telephone it.

The license request is output to `license_request.txt`.

[3] Cancel request

If you choose to obtain the license automatically, the License Client will start a TCP/IP connection to `license.easysoft.com` on port 8884 and send the details you entered at the prompts above and your site number. No other data is sent. The data sent is transmitted as plain text so if you do not want this information possibly intercepted by someone else on the net you should choose [2] and telephone or fax the request to us. The License daemon will return the license key, print it to the screen and make it available to the installation script in the file `licenses.out`.

If you choose option [2], the license request is written to the file `license_request.txt` and you should exit the License Client via option [0] and complete the installation. Once you have mailed, faxed or telephoned the license request to us, we will return a license key which should add to the end of the file `install_path/easysoft/license/licenses`.

If during this process any warnings or errors are output, please mail the output to support@easysoft.com and we will rectify the problem.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

POST INSTALLATION

Supplied documents and examples

The last part of the installation runs a post install script which lists resources available to you.

- Included documentation is installed in
`/usr/local/easysoft/ojg/doc`

The Easysoft ODBC-JDBC Gateway manual (this manual) in PDF format.

`CHANGES.txt` - a list of all the changes in each Easysoft ODBC-JDBC Gateway version.

The Easysoft ODBC-JDBC Gateway license

`dlg_help.html` contains example DSN information for various JDBC drivers.

There are many resources at the Easysoft web site.

Post installation steps for non-root installations

If you installed Easysoft ODBC-JDBC Gateway as a non-`root` user (not recommended) then there may be some manual steps you will need to perform:

1. If you attempt to install the Easysoft ODBC-JDBC Gateway ODBC Driver under the unixODBC Driver Manager and you do not have write permission to unixODBC's `odbcinst.ini` file, the Easysoft ODBC-JDBC Gateway driver cannot be added.

You can manually install the Easysoft ODBC-JDBC Gateway driver under unixODBC by adding an entry to the `odbcinst.ini` file. Run `odbcinst -j` to ascertain the `DRIVERS` file then append the lines from the `drv_template` file (in the directory where the Easysoft ODBC-JDBC Gateway distribution was untarred to) to the `odbcinst.ini` file.

2. As step 1, no example dsns can be added into unixODBC if you do not have write permission to the `SYSTEM odbc.ini` file. Run `odbcinst -j` to ascertain the name of the "SYSTEM DATA SOURCES" file then add your DSNs.
3. On machines where the dynamic linker has a configuration file defining the locations where it looks for shared objects (Linux/FreeBSD), you will need to add:

```
install_path/easysoft/lib
```

```
install_path/easysoft/unixODBC/lib
```

The latter one is only required if you installed the unixODBC included with Easysoft ODBC-JDBC Gateway. Sometimes after changing the dynamic linker configuration file you need to run a program to update the dynamic linker cache (e.g. `/sbin/ldconfig` on Linux).

4. If you did not install Easysoft ODBC-JDBC Gateway in the default location then you need to link `/usr/local/easysoft` to the `easysoft` directory in your chosen install path.

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Installing the Easysoft ODBC-JDBC Gateway

e.g. If you installed in `/home/martin` the installation will create `/home/martin/easysoft` and you need to symbolically link `/usr/local/easysoft` to `/home/martin/easysoft`:

```
ln -s /home/martin/easysoft /usr/local/easysoft
```

5. If your system does not have a dynamic linker configuration file you need to add the paths listed in step **3** above to whatever environment path the dynamic linker uses to locate shared objects. You may want to amend this in a system file run whenever someone logs in like `/etc/profile`.

The environment variable differs per dynamic linker. Consult your `ld` or `ld.so` man page. It is usually:

`LD_LIBRARY_PATH`, `LIBPATH`, `LD_RUN_PATH` or `SHLIB_PATH`.

Defining which JVM to use

After a typical installation, the Easysoft ODBC-JDBC Gateway will be accessible in `/usr/local/easysoft/ojg`. The installation will also have installed:

- the unixODBC driver manager (or used your existing copy)
- installed Easysoft ODBC-JDBC Gateway as an ODBC driver under unixODBC by adding an entry to your `odbcinst.ini` file.
- installed an example Easysoft ODBC-JDBC Gateway data source in your system `odbc.ini`.

NB

The unixODBC included with Easysoft ODBC-JDBC Gateway has `sysconfdir` set to `/etc`. This means if you use the included unixODBC your `odbcinst.ini` and `odbc.ini` files (defining ODBC drivers and system DSNs) are in `/etc`. If you built unixODBC yourself or are using a copy installed from RPM etc, it is more likely that `sysconfdir` was set to `/usr/local/etc` when unixODBC was built. You can check by running `odbcinst -j`

If you did not obtain a license during the installation you need to do this now (you need to run `/usr/local/easysoft/license/licshell` and see the license instructions in "**Licensing the Easysoft ODBC-JDBC Gateway**" on page 52.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

Currently the installation installs the Easysoft ODBC-JDBC Gateway driver in `odbcinst.ini` with a default `JvmPath`. e.g.

```
[OJG]
Description      = ODBC JDBC Gateway
Driver           = /usr/local/easysoft/ojg/libo2jg.so
Setup           = /usr/local/easysoft/ojg/libo2jgS.so
JvmPath         = /usr/jdk1.3.1/jre/lib/i386/client/libjvm.so
FileUsage       = 4
DontDLClose     = 1
```

You need to change `JvmPath` to point at a valid JVM on your system. You may also need to ensure `LD_LIBRARY_PATH/LIBPATH` etc are pointing to any directories containing the JVM shared objects and JVM required shared objects or the dynamic linker knows where to find dependent shared objects. e.g. With JDK 1.4.1 for Linux, `libjvm.so` loads `libverify` which is found in the `jre/lib/i386` directory.

As an example:

```
LD_LIBRARY_PATH=/usr/local/j2sdk1.4.1_06/jre/lib/i
386/client:/usr/local/j2sdk1.4.1_06/jre/lib/i386
export LD_LIBRARY_PATH
```

Editing the example DSN for your JDBC Driver

The sample ODBC data source called `ODBC_JDBC_SAMPLE` is installed into your system `odbc.ini` file. You need to edit this DSN or create a different named one with the correct `DriverClass`, `User`, `Password`, `ClassPath` and `URL` for your JDBC driver. The sample one looks similar to this:

```
[ODBC_JDBC_SAMPLE]
```

```
Driver          = OJG
```

```
DriverClass     = com.borland.datastore.jdbc.DataStoreDriver
```

```
User           = dbo
```

```
Password       = password
```

```
ClassPath      = /tmp/jdsserver6.jar
```

```
URL            = jdbc:borland:dsremote://server//C:\JDatastorein\TEST.jds
```

```
Strip_Quote    = 1
```

```
With_Schema    = 0
```

"Driver = OJG" tells unixODBC which driver to use i.e. which entry in `odbcinst.ini` file defines the ODBC driver.

"DriverClass" defines the JAVA class you need to use for the JDBC driver defined in "ClassPath".

"URL" is the required URL to connect to your JDBC database.

You can find some examples for different JDBC drivers in the file `dlg_help.html`.

Testing the Easysoft ODBC-JDBC Gateway ODBC Driver

To test the Easysoft ODBC-JDBC Gateway you need to complete all the processes described in **"Post Installation" on page 56**. In particular, you need to edit the sample DSN or create a new one.

Once your DSN is defined you can use unixODBC's `isql` to try a connection.

INSTALLATION

Installing the Easysoft ODBC-JDBC Gateway

e.g.

Suppose the DSN defined in `odbc.ini` is `ODBC_JDBC_SAMPLE` and your JDBC database needs a username and password of `testuser/password` then:

```
cd /usr/local/easysoft/unixODBC/bin (or wherever your  
unixODBC's isql is)
```

```
./isql -v ODBC_JDBC_SAMPLE testuser password
```

If this connects you will get a prompt you can start typing SQL into or just "help" to get a list of tables. Pressing `<enter>` on a new line will exit `isql`.

Uninstalling on Unix

There is no automated method of removal of the Easysoft ODBC-JDBC Gateway in this release. However, removal is quite simple. Follow the instructions below:

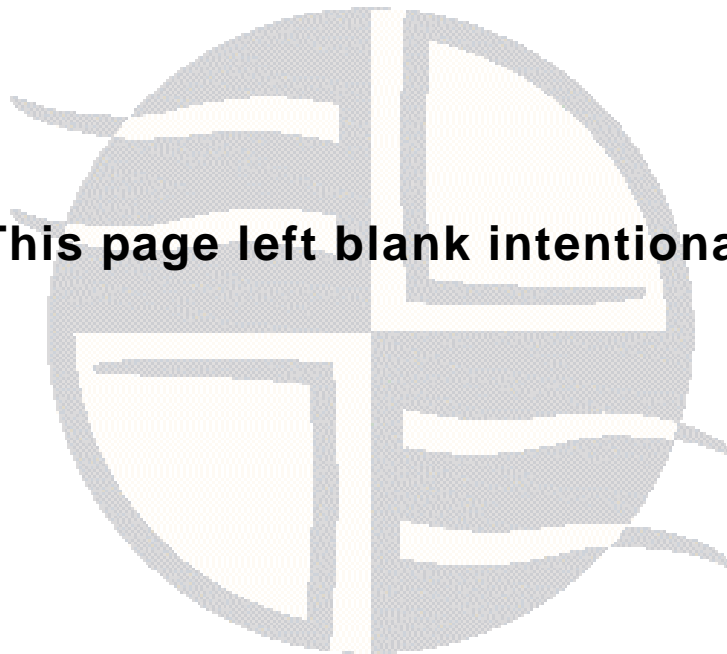
1. Change directory to *installpath/easysoft* and delete the directory tree "ojg" (where *installpath* is what was specified at install time).
2. If you had to add the above path to the dynamic linker search paths (e.g. */etc/ld.so.conf* in Linux) remove this entry. You may have to run a linker command such as */sbin/ldconfig* to get the dynamic linker to reread the configuration file. This step can generally only be performed by the *root* user.
3. If you were using unixODBC, the Easysoft ODBC-JDBC Gateway ODBC Driver entry needs to be removed from the *odbcinst.ini* file. To check whether Easysoft ODBC-JDBC Gateway is configured under unixODBC use `odbcinst -q -d`. If this outputs "Easysoft ODBC-JDBC Gateway" you should uninstall the driver using

```
odbcinst -u -d -n "Easysoft ODBC-JDBC Gateway"
```

If a message is displayed saying reduced usage count, repeat these commands until `odbcinst` states the driver is removed.

4. If you created any Easysoft ODBC-JDBC Gateway data sources under unixODBC, you may want to delete these. You need to use `odbcinst -j` to locate user and system *odbc.ini* files and then check those files for DSNs having the driver attribute set to "Easysoft ODBC-JDBC Gateway".
5. Remove *ojg_install.info* from the */usr/local/easysoft* directory.

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CONFIGURATION

Configuring the Easysoft ODBC-JDBC Gateway

This section describes how to create an ODBC data source for the Easysoft ODBC-JDBC Gateway.

Chapter Guide

- [Creating a System Data Source Name](#)
- [DSN-less connections](#)

Creating a System Data Source Name

This section describes how to create ODBC data sources for the Easysoft ODBC-JDBC Gateway:

1. Select **Start > Settings > Control Panel**, double-click **Administrative Tools** and then **Data Sources (ODBC)**.

9x

Select **Start > Settings > Control Panel** and double-click **ODBC Data Sources (32bit)**.

NT

Select **Start > Settings > Control Panel** and double-click **Data Sources (ODBC)**.

The **ODBC Data Source Administrator** dialog box is displayed:

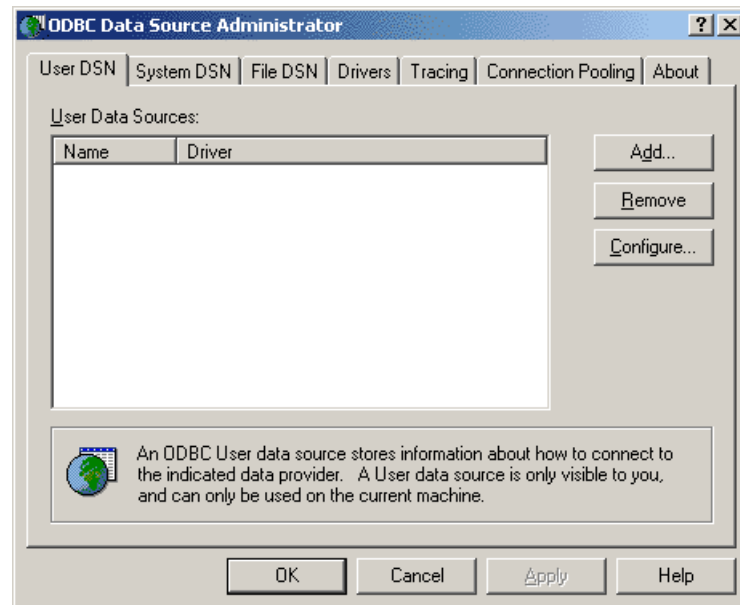


Figure 17: The ODBC Data Source Administrator

2. Select the **User DSN** tab to set up a data source that only you can access.

– OR –

Select the **System DSN** tab to create a data source which is available to anyone who logs on to this Windows machine.

3. Click **Add** to add a new DSN.

The **Create New Data Source** dialog box displays a list of the drivers which are available:

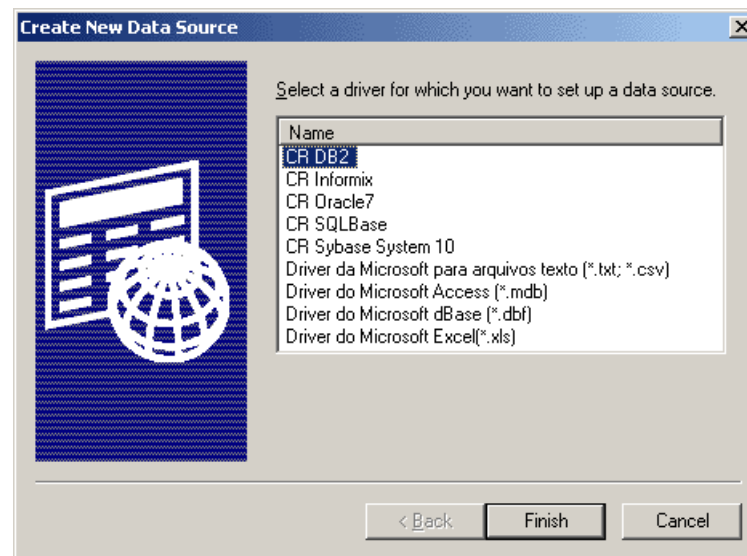


Figure 18: The Create New Data Source dialog box

4. Select Easysoft ODBC-JDBC Gateway and click **Finish**.

CONFIGURATION

Configuring the Easysoft ODBC-JDBC Gateway

The **Easysoft ODBC-JDBC Gateway DSN Setup** dialog box prompts the user to create an ODBC data source for a specific JDBC driver using the appropriate connection information:

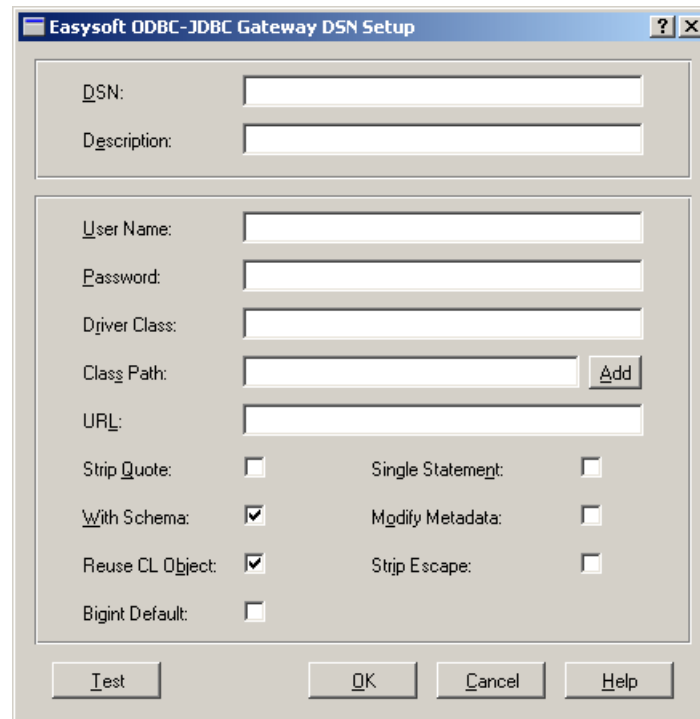


Figure 19: The Easysoft ODBC-JDBC Gateway DSN Setup dialog box

The following fields are defined on the **Easysoft ODBC-JDBC Gateway DSN Setup** dialog box:

DSN

The name of the data source.

DESCRIPTION

A brief description of the data source.

USER NAME

The name of a user to pass to the JDBC driver in order to access the database (if required).

The value entered into this field is passed to the JDBC driver as part of a `Properties` object in the connect call.

The equivalent Java code is as follows:

```
Connection con;  
Properties prop;  
if ( uid != null ) {  
    prop.put( "user", uid );  
}  
con = DriverManager.getConnection( url, p );
```

This value can be overridden at the ODBC level by passing either a non-NULL user name in the call to `SQLConnect()` or a `UID=value` attribute in the connection string passed to `SQLDriverConnect()`.

It can also be supplied in the JDBC URL supplied to the JDBC driver, but the syntax of this is JDBC driver dependent.

PASSWORD

The password for the specified user to pass to the JDBC driver in order to access the database (if required).

The value entered into this field is passed to the JDBC driver as part of a `Properties` object in the connect call.

CONFIGURATION

Configuring the Easysoft ODBC-JDBC Gateway

The equivalent Java code is as follows:

```
Connection con;
Properties prop;
if ( pwd != null ) {
    prop.put( "password", pwd );
}
con = DriverManager.getConnection ( url, p );
```

This value can be overridden at the ODBC level by passing either a non-NULL password in the call to `SQLConnect()` or a `PWD=value` attribute in the connection string passed to `SQLDriverConnect()`.

It can also be supplied in the JDBC URL supplied to the JDBC driver, but the syntax of this is JDBC driver dependent.

DRIVER CLASS

The JDBC driver class name for this data source that will be passed to the `forName()` function.

The equivalent Java code is as follows:

```
Class.forName( driverClass );
```

NB

The syntax and contents of this field are unique to the JDBC driver being used and can be obtained from the individual driver documentation.

An example value (in this case for the **Easysoft JDBC-ODBC Bridge**) would be the string:

```
easysoft.sql.jobDriver
```

This value can be supplied at the ODBC level by a `DRIVERCLASS=value` attribute in the connection string passed to `SQLDriverConnect()`.

CLASS PATH

A list of any `.jar` files required to enable Java to load the JDBC driver class.

This list is specified in the same way as the Java `CLASSPATH` environment variable, with the separator between entries depending on the operating system used (Windows uses a semi-colon ";" and other platforms use a colon ":").

Click **Add** to launch a file browser to help you to locate the required `.jar` file on your system.

If the target driver requires multiple `.jar` files then click **Add** again to add a further entry.

Caution! The order in which the `.jar` files are specified can be significant.

Please refer to
REF <http://java.sun.com/j2se/1.4/docs/tooldocs/windows/classpath.html> on the Sun Java web site for further information about the setting of class paths under Windows.

This value can be supplied at the ODBC level by a `CLASSPATH=value` attribute in the connection string passed to `SQLDriverConnect()`.

CONFIGURATION

Configuring the Easysoft ODBC-JDBC Gateway

URL

The string that will be passed as the first argument to the call:

```
Connection con;
con = DriverManager.getConnection( url, p );
```

NB The syntax and contents of this field are unique to the JDBC driver being used and can be obtained from the individual driver documentation.

An example value (in this case for the **Easysoft JDBC-ODBC Bridge**) would be the string:

```
jdbc:easysoft://server:8831/dsn_name
```

This value can be supplied at the ODBC level by a `URL=value` attribute in the connection string passed to `SQLDriverConnect()`.

STRIP QUOTE

Controls how any SQL passed through the Easysoft ODBC-JDBC Gateway is scanned and modified.

Some JDBC drivers can not accept double quotes around column and table names, and in some cases the quotes will trigger failure, as it may invoke unwanted case-sensitive behaviour.

As an example, the following SQL:

```
SELECT "A" FROM "T"
```

will, when seen by the JDBC driver, be transformed to:

```
SELECT A FROM T
```

This value can be supplied at the ODBC level by a `STRIP_QUOTE=value` attribute in the connection string passed to `SQLDriverConnect()`.

SINGLE STATEMENT

Some JDBC drivers are only capable of using a single active result set, but may return a value of either zero or greater than one from `DatabaseMetaData.getMaxStatements()`.

Select this attribute to force the ODBC driver to return a value of 1 from the `SQLGetInfo` call to find `SQL_MAX_CONCURRENT_ACTIVITIES`.

This value can be supplied at the ODBC level by a `SINGLESTMT=value` attribute in the connection string passed to `SQLDriverConnect()`.

WITH SCHEMA

Controls the return of schema information from ODBC metadata calls.

Some JDBC drivers return schema information from the result set generated by `getTables()` (for example), but are unable to handle SQL that contains the schema information in table and column specifications.

This attribute is selected by default, but clearing it will result in schema information being returned to the ODBC application, allowing it to assemble the relevant SQL.

This value can be supplied at the ODBC level by a `SCHEMA=value` attribute in the connection string passed to `SQLDriverConnect()`.

MODIFY METADATA

Some JDBC drivers only return a partial result set from calls such as `DatabaseMetaData.getTypeInfo()`.

CONFIGURATION

Configuring the Easysoft ODBC-JDBC Gateway

Select this attribute to cause the ODBC driver to modify the values in the result set returned from metadata calls (such as `SQLGetTypeInfo`) so that they conform to the expected ODBC3 result set specification.

This value can be supplied at the ODBC level by a `CLEAN_METADATA=value` attribute in the connection string passed to `SQLDriverConnect()`.

REUSE CL OBJECT

When loading a JDBC driver the Gateway creates a `java.net.URLClassLoader` and this is then used to load the JDBC driver.

Select this attribute to retain the `URLClassLoader` object between calls to `SQLConnect` and `SQLDriverConnect`, thus enabling a faster connection and reducing the system resources required.

This attribute can be selected under normal use and should only be cleared if problems are encountered connecting to multiple different JDBC drivers.

This value can be supplied at the ODBC level by a `REUSECL=value` attribute in the connection string passed to `SQLDriverConnect()`.

STRIP ESCAPE

While some JDBC drivers can accept ODBC-type escape sequences, some JDBC drivers are unable to understand them.

Select this attribute to allow the ODBC driver to modify the SQL passed to the JDBC driver, removing the ODBC sequences.

For example, the following SQL when passed to the ODBC driver:

```
SELECT * FROM T WHERE DATE_FIELD = {d '1999-02-01'}
```

will be altered to:

```
SELECT * FROM T WHERE DATE_FIELD = '1999-02-01'
```

when this attribute is set to true.

This value can be supplied at the ODBC level by a

`STRIP_ESCAPE=value` attribute in the connection string passed to `SQLDriverConnect()`.

BIGINT DEFAULT

The ODBC specification states that if `SQL_C_DEFAULT` is used in combination with `SQL_BIGINT` fields then the result returned will be in `SQL_C_BIGINT` format.

Select this attribute to return a `CHAR` string under these conditions, as some applications (Microsoft Access in particular) do not know of the `SQL_BIGINT` data type and therefore expect the data to be returned as a string.

This value can be supplied at the ODBC level by a

`BIGINT2CHAR=value` attribute in the connection string passed to `SQLDriverConnect()`.

ADD

Displays a dialog box that allows a `jar` file to be added to the **Class Path** field.

TEST

Takes the values for all Easysoft ODBC-JDBC Gateway Data Source settings and attempts to establish a connection to the specified JDBC data source.

It will report either the first error encountered or a successful completion of the test, and will time out after about 15 seconds.

CONFIGURATION

Configuring the Easysoft ODBC-JDBC Gateway

Click **OK** to exit the Easysoft ODBC-JDBC Gateway **Data Source Setup** program after a successful connection has been made to ensure that those connection settings are saved.

OK

Creates or modifies an Easysoft ODBC-JDBC Gateway ODBC **Data Source Setup** with the currently displayed settings.

CANCEL

Exits the Easysoft ODBC-JDBC Gateway ODBC **Data Source Setup** program without affecting any settings.

HELP

Displays help information.

DSN-less connections

In addition to using a data source, you can also connect to a database by using a DSN-less connection string of the form:

```
SQLDriverConnect (... "DB=pubs;UID=demo;PWD=easysoft;" ...)
```

where `pubs` is the database name, `demo` is the user name with which to connect to the database, and `easysoft` is the password for the `demo` user.

Easysoft ODBC-JDBC Gateway attribute settings can also be added to this connection string, using the "`PARAMETER=value;`" attributes described for each field.

GLOSSARY



Terms and definitions

API

Application Programmer Interface. An API is a published set of function calls and constants allowing different programmers to utilize a ready-written library of subroutines.

Applet

A Java program that has certain restrictions placed upon it, such as restricted network and filesystem access. Applets are able to run in a web browser.

Application

An Application Program ("Application" or "App") is 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.

Bitmask

A value which, when written out in binary, has a meaning assigned to each digit, which can be 0 or 1. This is a very efficient way of storing a number of *flags* in a small amount of memory. When viewed in decimal it is a single number resulting from adding up the values of the individual bits, worth 1, 2, 4, 8, 16, 32 and so on.

Client/Server

The name given to 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 requests queries or actions be performed on the data by the server. 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*). The term *column* might refer to only the *definition* of a column (i.e. its name and type), or to all the data in it.

Connection String

ODBC *driver managers* accept a connection string when a client connects. Ideally it contains all necessary attribute values to make the connection to a data source, but provision is made for the driver to negotiate with the application or the user for any missing information.

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 79**) to identify it to the ODBC Driver Manager.

DLL

Dynamic Link Library. Windows' mechanism for shared object code. See also **“Shared Object” on page 81**.

Download

The transfer of 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” on page 81**.

Driver Manager

Software whose main function is to load ODBC drivers. ODBC applications connect to the Driver Manager and request a *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. Called a *cell* in MS Access.

Flags

Single-bit values, representing 'Yes' or 'No'. When more than one flag is present, they are normally stored in a *bitmask*.

Host

A computer visible on the network.

HTTP

HyperText Transfer Protocol. The means of transferring web pages.

JDBC (Java DataBase Connectivity)

A Java *API* for database access based on the *ODBC* API, but includes an object-oriented interface to the underlying data source.

JDK (Java Development Kit)

A software development environment for writing Java applets and applications.

JRE (Java RunTime Environment)

A subset of the Java Development Kit (JDK) which supports the execution (but not the development) of Java applications and consists of the Java Virtual Machine (JVM), the core classes, and supporting files.

JVM (Java Virtual Machine)

Software that interprets and executes the byte codes in Java class files like a microprocessor would execute machine code. There are many virtual machines available from different vendors and for different purposes.

Middleware

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

ODBC (Open DataBase Connectivity)

A standard *API* for connecting application programs to relational database systems through a suitable *driver*. ODBC is available on a wide number of platforms.

ODBC driver

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

Operating System

A collection of software programs, APIs and working practices that control and integrate the execution of system functions on behalf of application programs.

Platform

The term *platform* normally covers the hardware and operating system as a unit. For example; a PC running Microsoft Windows, a PC running BSD Unix, and a Sun running Solaris are three different platforms.

Server

A computer, or *host*, on the network, designed for power and robustness rather than user-friendliness and convenience. Servers typically run round-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. See **“Client/Server” on page 78**.

Shared Object

A piece of object code (i.e. a program fragment) for loading and executing by other programs.

SQL (Structured Query Language)

A standard language for interacting with relational database systems, based on Relational Theory.

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. See also **“User Data Source” on page 82.**

Table

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

software	
vendor	name
Easysoft	Easysoft ODBC-JDBC Gateway
MySoft	My ODBC Client Application

This table has two columns; `vendor`, and `name`. It has two rows: one corresponding to the Easysoft ODBC-JDBC Gateway and the other corresponding to MySoft’s ODBC client software. The term *table* can also apply to just the definition of the table, without its data.

User Data Source

An ODBC Data Source with access limited to a specific user on a given system. See also **“System Data Source” on page 82.**

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