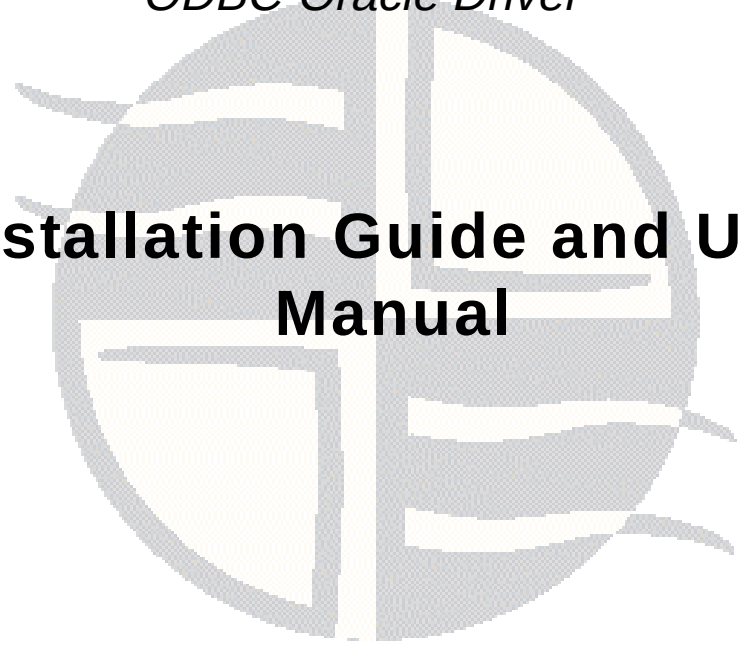
Easysoft® Data Access

ODBC-Oracle Driver



Installation Guide and User Manual

Document Version 1.1.0

Publisher: Easysoft Limited

Thorp Arch Grange
Thorp Arch
Wetherby
LS23 7BA
United Kingdom

CONTENTS

LIST OF FIGURES

PREFACE

About this manual

This manual is intended for use by anyone who wants to install the Easysoft ODBC-Oracle Driver, configure it, and then access Oracle application data sources from an ODBC-compliant application.

Intended Audience

Sections written for the Microsoft Windows platforms require some familiarity with the use of buttons, menus, icons and text boxes, but should present no difficulties if you have any experience of Apple Macintosh computers, Microsoft Windows or the X Window System.

The Unix-based sections require experience of using Unix shell commands and performing 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

Trademarks

Throughout this manual, *Windows* refers generically to Microsoft Windows 95, 98, 2000, NT or XP, 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 UNIX System Laboratories, 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.

1 INTRODUCTION

Introducing the Easysoft ODBC-Oracle Driver

Easysoft Data Access is a suite of programs that add significant value to your investment in ODBC. With Easysoft software you can connect applications on more platforms to more database systems than ever.

The Easysoft ODBC-Oracle Driver provides ODBC 3.5 access to Oracle 8i and Oracle9i databases.

Although ODBC access from Windows client devices is common, this driver extends the same functionality to applications hosted on Linux and Unix systems, and may be extended to other platforms in the future.

Chapter Guide

Product Status

The Easysoft ODBC-Oracle Driver software is currently available on the following platforms:

- Windows x86
- Linux Intel
- Solaris Sparc
- Solaris Intel
- Compaq TRU-64
- AIX
- HP-UX Itanium

Software problems can be reported to **support@easysoft.com** but priority will be given to users who are registered via the website at **http:\\www.easysoft.com**.

Client tools tested include ApplixWare, StarOffice, Perl DBI and PHP4. Notes associated with these products are included later in **"Application Specific Issues" on page 57**.

Remote access to the driver has also been tested via the Easysoft ODBC-ODBC Bridge. Applications tested by this route include Microsoft Access 2000 and Microsoft Query.

Product Dependencies

The Easysoft ODBC-Oracle Driver requires you to obtain and install a copy of the Oracle Client Software (see **"Obtaining the Oracle Client software" on page 17** and **"Installing the Oracle Client software" on page 17**).

Deployment

Several deployment options are available dependent upon the server platforms used and connectivity requirements.

The Easysoft ODBC-Oracle Driver can be located on either the client or server side of a configuration. Installed on the server in conjunction with the Easysoft ODBC-ODBC Bridge, the Easysoft ODBC-Oracle Driver provides remote ODBC access from a wide range of client machines. The addition of the Easysoft ODBC-JDBC Bridge also enables JDBC access from remote devices.

SCENARIO 1: LOCAL ACCESS TO A LOCAL ORACLE DATABASE

In this option Oracle client software will usually be already present on the host system.

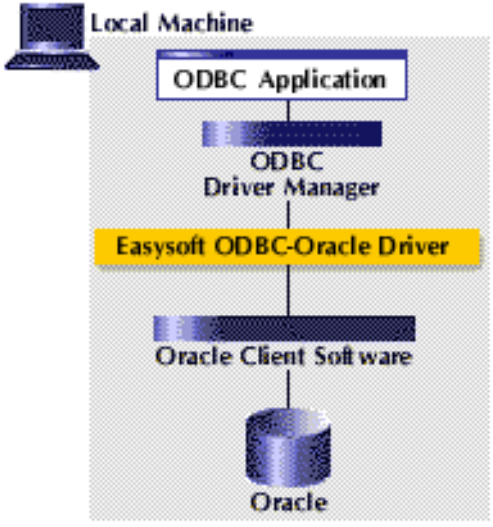


Figure 1: Local access to a local Oracle database

SCENARIO 2: SINGLE CLIENT ACCESS TO A REMOTE ORACLE DATABASE

This option uses Net8 as the communications protocol and therefore requires the installation of the Oracle client software on each client device.

If Oracle client software is not available for your platform you will need to use **"Scenario 3: Access to a remote Oracle database without Net8" on page 15**).

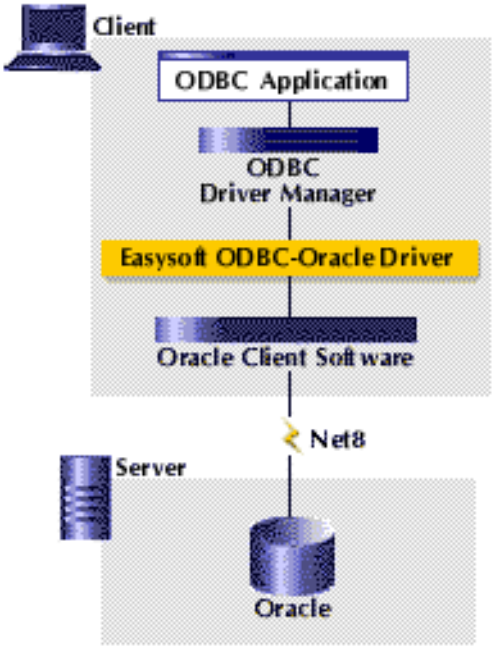


Figure 2: Single client access to a remote Oracle database

SCENARIO 3: ACCESS TO A REMOTE ORACLE DATABASE WITHOUT NET8

This option uses the Easysoft ODBC-ODBC Bridge and TCP/IP as the communications protocol.

This configuration does not require the installation of Oracle client software on each client device, making installation and management much simpler, and is appropriate if your client platform is supported by the Easysoft ODBC-ODBC Bridge, but Oracle client software is not available.

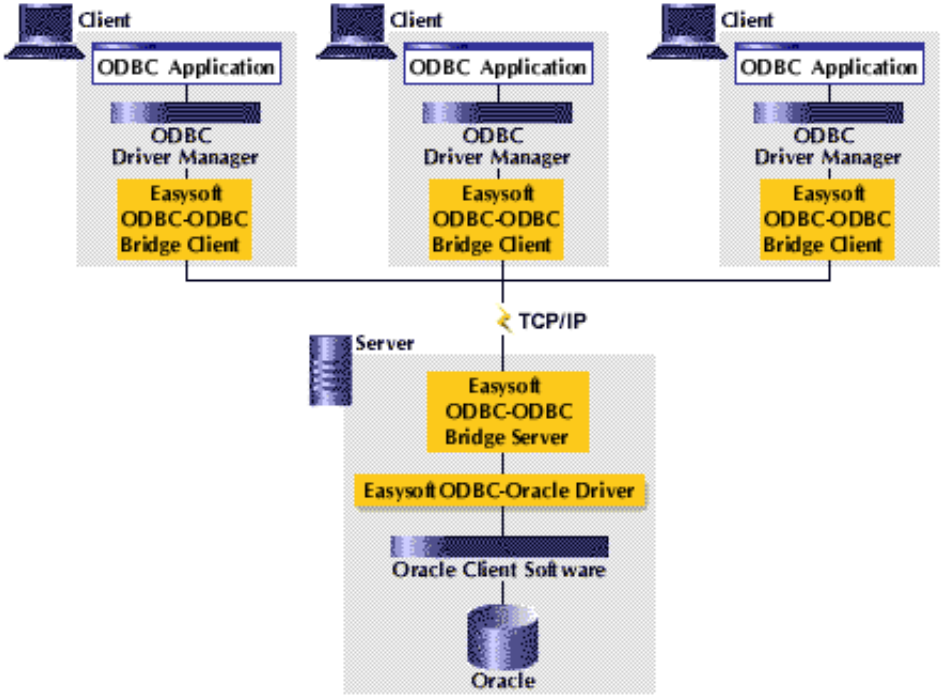


Figure 3: Access to a remote Oracle database without Net8

INSTALLATION

2

Installing the Easysoft ODBC-Oracle Driver

Installing the Easysoft ODBC-Oracle Driver allows you to access Oracle databases from other computers across the network running any supported Windows or Unix variant.

This section covers the tasks necessary to install and remove the Easysoft ODBC-Oracle Driver.

A Windows installation can be carried out by anyone with administrator privileges.

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

Chapter Guide

Obtaining the Oracle Client software

If you do not have the software installed you should contact your Oracle Database Administrator. Alternatively you can download the Oracle distribution from **http://technet.oracle.com** (you will be required to register).

Caution!

The Oracle Client software download requires significant temporary disk space. Unless you have got fast internet access, we advise that you install your Oracle software from the distribution CD.

Installing the Oracle Client software

There are instructions on how to run the Oracle installer on the Oracle site (**http://technet.oracle.com**).

During the install choose the **client software** option and follow the instructions on the screen.

Obtaining the Easysoft ODBC-Oracle Driver

There are three ways to obtain the Easysoft ODBC-Oracle Driver:

- 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 **Free Trials** page on the Easysoft ODBC-Oracle Driver 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**. It contains free patches, upgrades, documentation and beta releases of Easysoft products, as well as definitive releases. The FTP site is useful if you have a slow connection or if you want to write a script to retrieve the file. Change to the `pub/oracle` directory and then choose the platform release that you require.
- If you have an extremely slow connection you can order Easysoft software on CD by email, telephone or post (see **Contact Details**).

Installing the Easysoft ODBC-Oracle Driver

The name of the Easysoft ODBC-Oracle Driver install file varies from platform to platform, but you can expect something of the form:

- `oracle_odbc.exe` (Windows)

– OR –

- `es-oracle-`*`w`*`.`*`x`*`.`*`y`*`.`*`z`*`.`*`platform`*`.tar.gz` (Unix)

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

"*`platform`*" will also vary, depending on the operating system distribution you require.

Whichever option you choose, you should now download the file and begin the installation.

The exact installation process depends on your operating system.

Caution! If you are upgrading your Easysoft ODBC-Oracle Driver installation, you must decide whether or not to remove your previous installation before continuing. Generally, you should be safe to proceed without uninstalling. Refer to **"Uninstalling under Windows" on page 33** for more details about this procedure.

Refer to the section relevant to your platform to continue:

- "Installing under Windows" on page 20
- **"Uninstalling under Windows" on page 33**
- **"Installing under Unix" on page 35**
- **"Uninstalling under Unix" on page 36**

Installing under Windows

1. Execute the file distribution that you downloaded in **"Obtaining the Easysoft ODBC-Oracle Driver" on page 17**.

Caution! Please shut down other Windows programs before installing. In particular, if Microsoft Outlook is running there can be a pause of up to several minutes when InstallShield is started.

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:

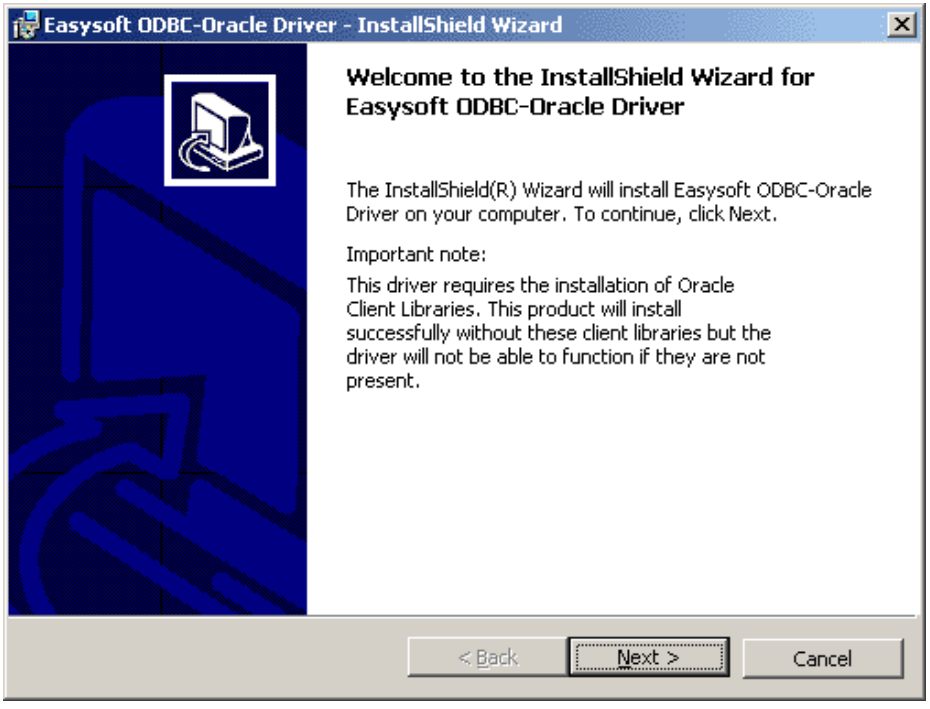


Figure 4: The Welcome dialog box

2. Click **Next** when you have read the **Welcome** dialog box.

   A **License Agreement** dialog box then displays Easysoft End User licensing details:

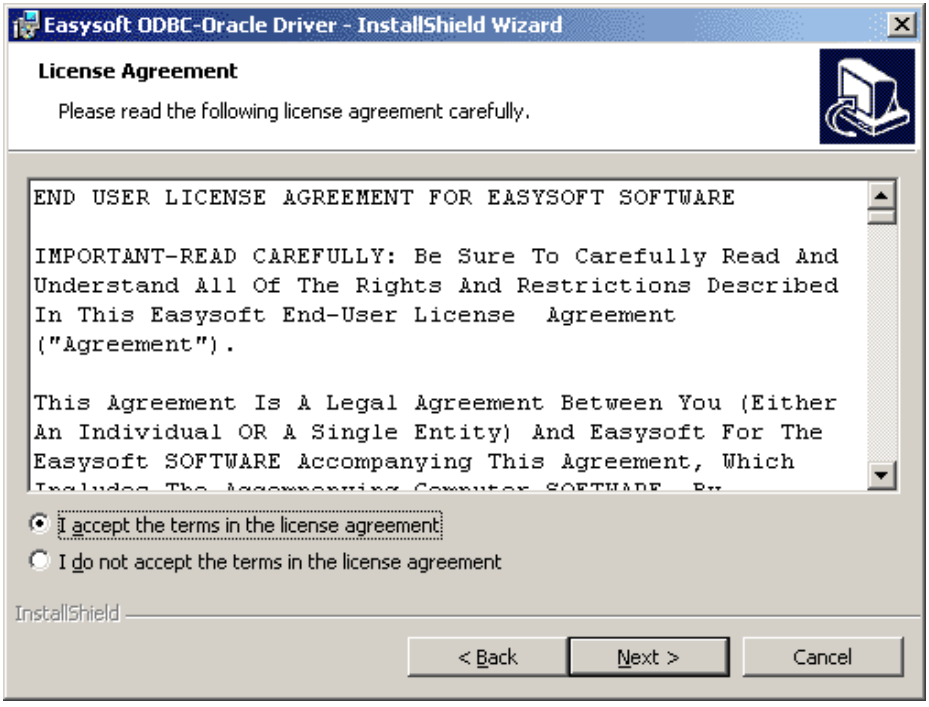


Figure 5: The License Agreement dialog box

   You are required to accept the terms of the License Agreement before continuing.

3. Click **Next** to continue.

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

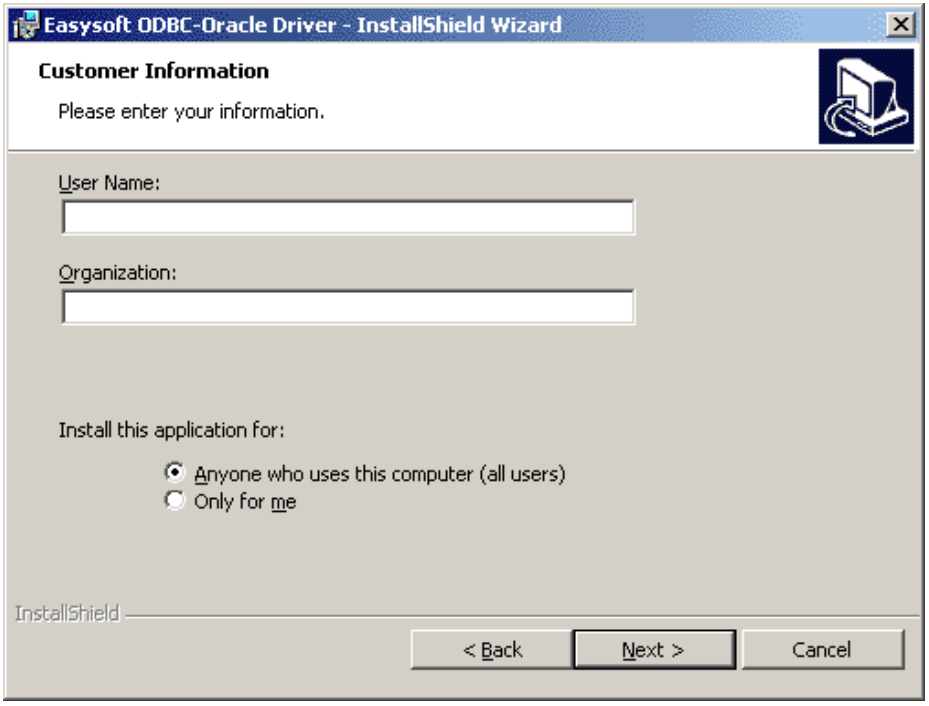


Figure 6: The Customer Information dialog box

4. 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 select which components of the Easysoft ODBC-Oracle Driver you wish to install, and where you wish to install them:

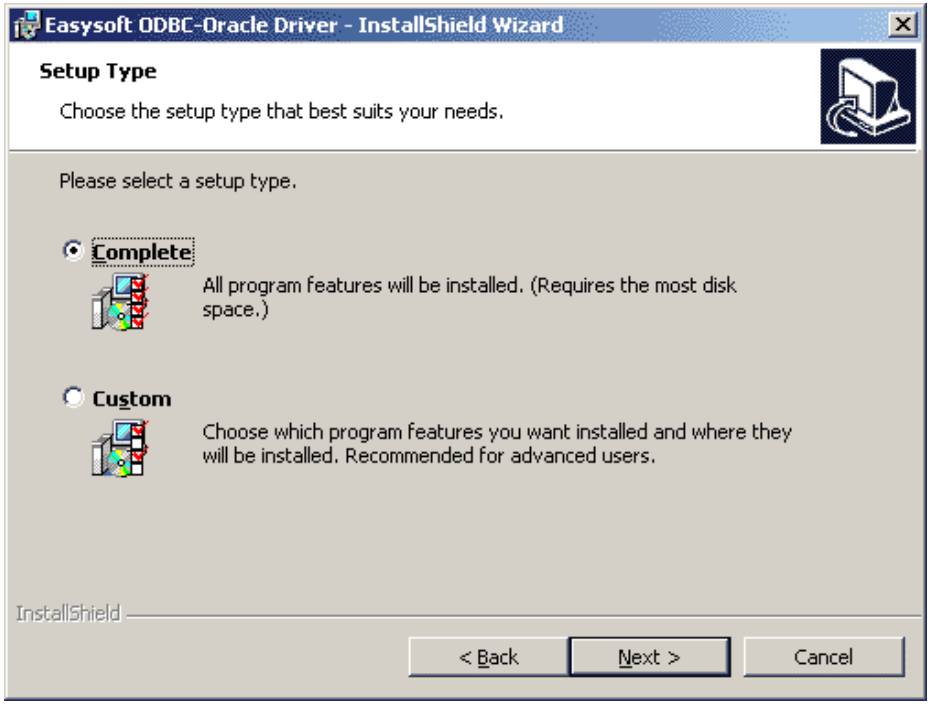


Figure 7: The Setup Type dialog box

Select **Complete** to install the Easysoft ODBC-Oracle Driver, the Easysoft ODBC-Oracle Driver documentation and the Easysoft License Manager.

NB	You are recommended to use the **Complete** option unless you have a good reason for not doing so.

– OR –

Select **Custom** to display a screen which will allow you to define your own individual installation requirements (if disk space is at a premium, for example):

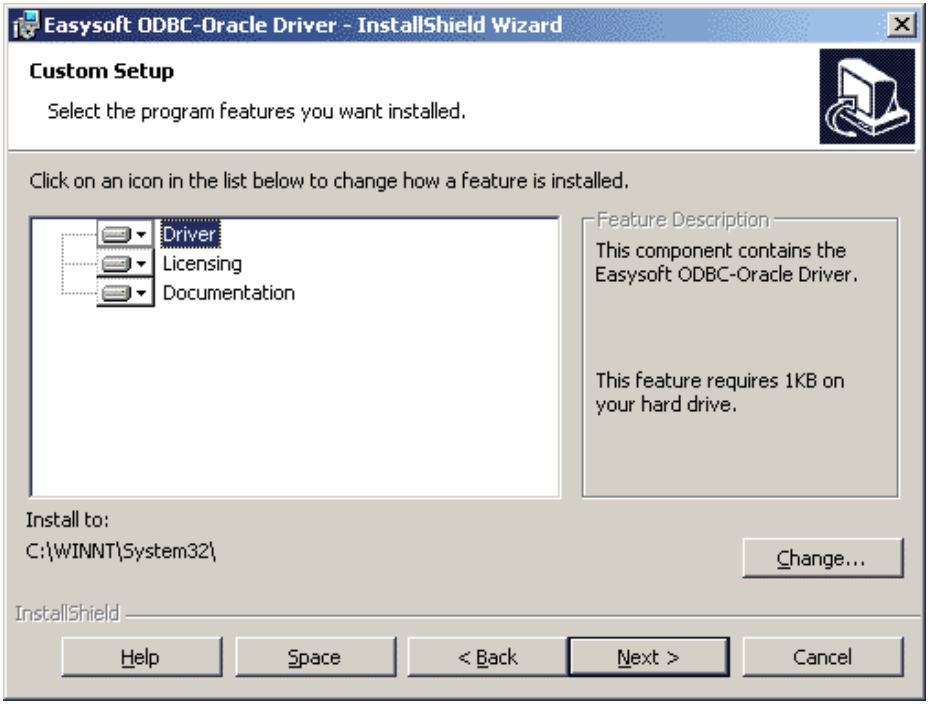


Figure 8: The Custom Setup dialog box

- Click the **Change** button to amend the path into which the selected component is to be installed.
- Click the **Help** button to display additional information on the available installation options for each component.
- Click the **Space** button to confirm that you have enough space available on your selected computer drive to install each component.

5. When you have selected the correct configuration, click **Next**.

The **Ready to Install** dialog box is displayed:

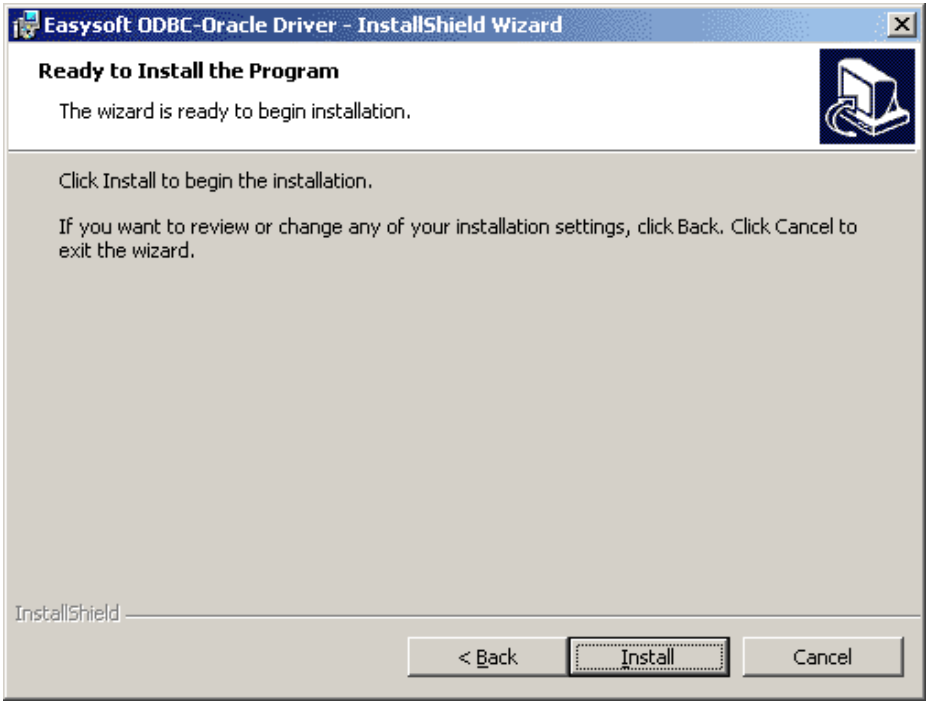


Figure 9: The Ready to Install dialog box

6. Click **Install**.

The install program starts the Easysoft License Manager (explained fully in the **License Agreement**).

> **NB** If you are upgrading and have licensed a previous version of the software, you do not need to repeat the licensing procedure.

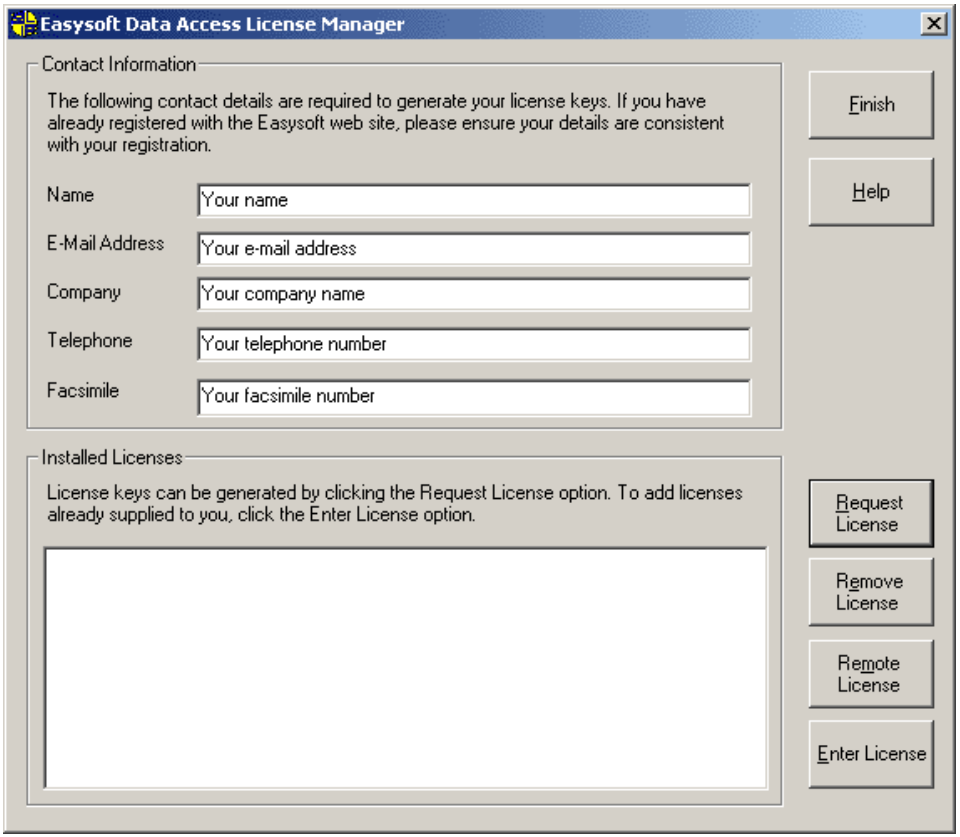


Figure 10: The License Manager dialog box

The following types of license are available:

- a *`free time-limited trial license`* giving 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.

7. Enter your contact details, including at least your name, email and company name.

   The **E-Mail Address**, **Telephone** and **Facsimile** fields are important if you want us to contact you by those methods.

8. Click **Request License**.

   You are asked for a license type:

Figure 11: The License Type dialog box

   The next step depends on the type of license you want.

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

   The License Manager asks what software you are licensing:

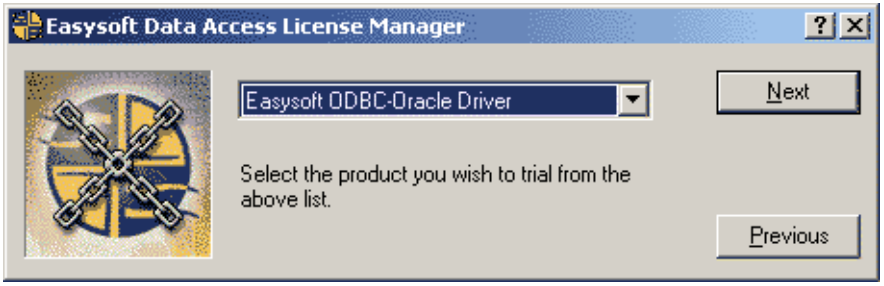


Figure 12: Select the product you are licensing

Select the **Easysoft ODBC-Oracle Driver** 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 your authorization code.

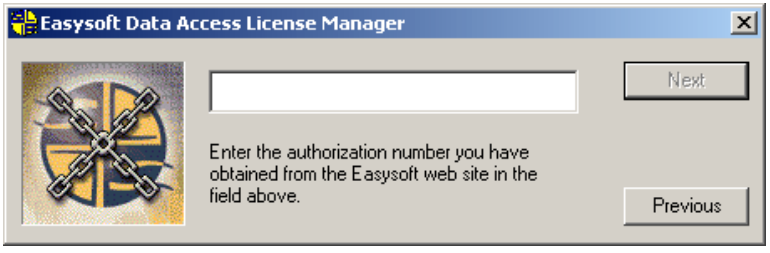


Figure 13: The Authorization Number dialog box

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 invisible, and you can proceed to **step 10 on page 30**.

NB	Only your license request identifier and contact details as they appear 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).

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 the Easysoft 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 go to **http://www.easysoft.com/sales/autolicense.phtml** in a web browser. Choose the type of license you require, enter your site number, click **Continue** and the license key will be emailed to you.

NB	You can copy your site number from the **View Request** dialog box using `CTRL-C` and then paste it into the License Generator by using `CTRL-V`.

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 displays the number of licenses that 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 screen, not the `from:` address of your email.

For more information about licensing refer to the **Licensing Guide**.

10. Click **Finish** in the License Manager to return to the install.

    The Easysoft ODBC-Oracle Driver DSN Setup dialog box is displayed:

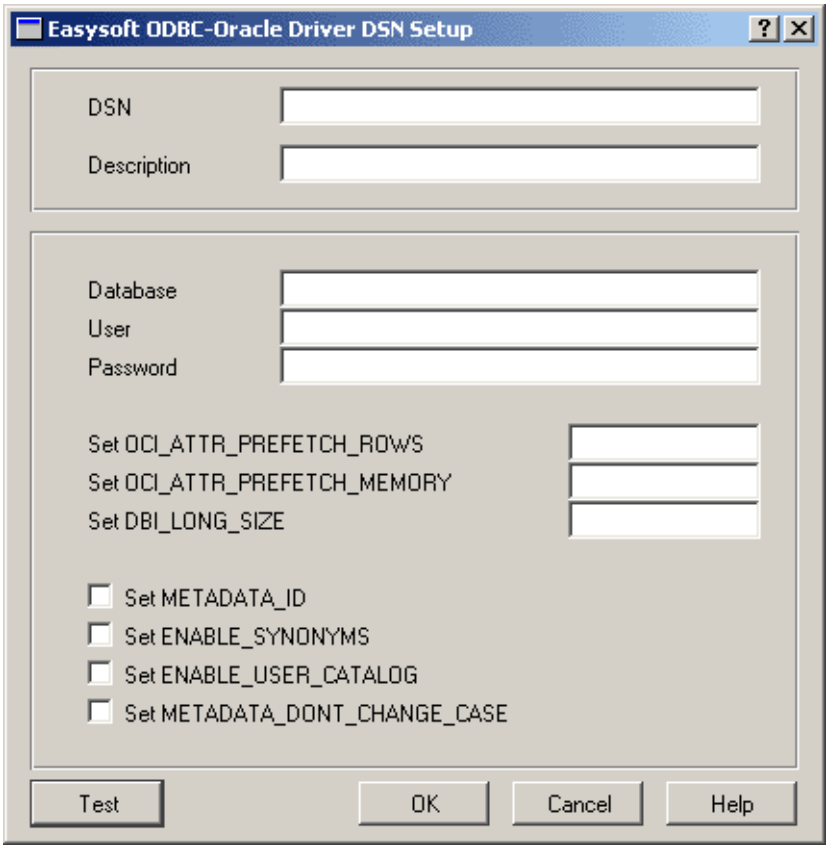


Figure 15: The Easysoft ODBC-Oracle Driver DSN Setup dialog box

At this point you may choose to enter the required fields to configure your client data source, or finish the installation first and return to the DSN setup later.

For details of the Easysoft ODBC-Oracle Driver DSN setup, see **"Windows Setup" on page 39**.

11. When you have read the **Post Install Message**, click **Next**.

The **InstallShield Wizard Complete** dialog box is displayed:

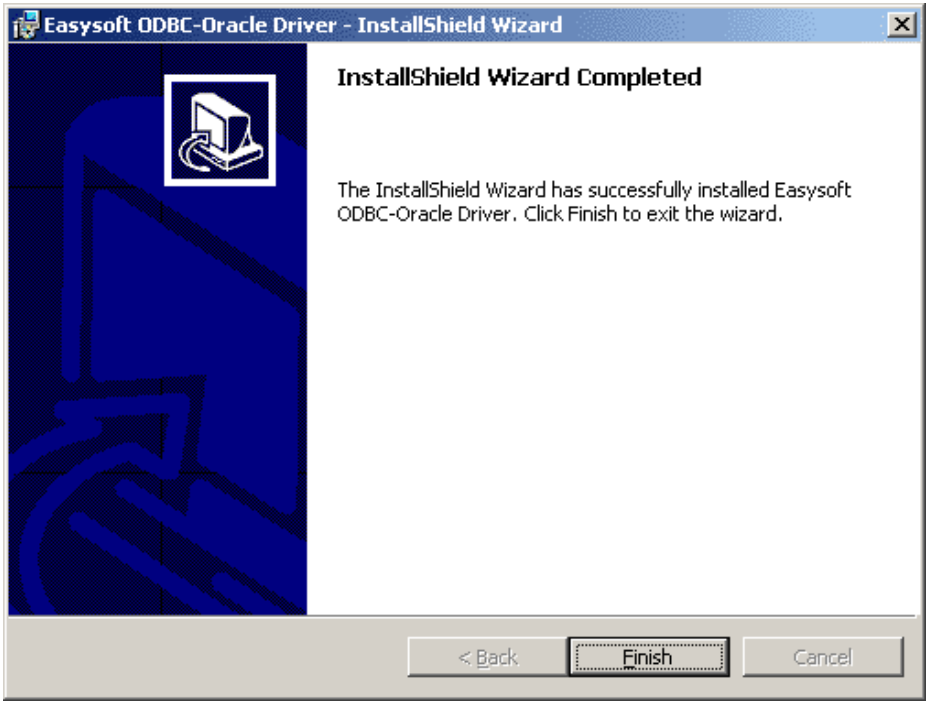


Figure 16: The InstallShield Wizard Complete dialog box

12. Click **Finish**.

    The installation is complete.

    After restarting your machine you should have a new Easysoft ODBC-Oracle Driver program group with a links to this user guide.

NB	If you add a new license you will need to restart the Easysoft ODBC-Oracle Driver to access the new details.

Uninstalling under Windows

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

   You are then presented with a list of applications that can be automatically removed.

2. Select **Easysoft ODBC-Oracle Driver** and click the **Add/Remove** button.

3. Click **Yes** to confirm that you wish to remove the Easysoft ODBC-Oracle Driver 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	Under Windows, install/uninstall procedures incorporate 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, for instance if the user deleted an application directly, without using **Add/Remove Programs**, or the registry was '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 the **Yes** or **Yes to All** button to continue.

   – OR –

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

   The uninstall process removes the Easysoft ODBC-Oracle Driver components from your system.

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-Oracle Driver and other Easysoft products are held in the Windows registry. When you uninstall, your licenses are not removed so you do not need to relicense the product if you reinstall or upgrade.

Installing under Unix

1. Download the Easysoft ODBC-Oracle Driver (see **"Obtaining the Easysoft ODBC-Oracle Driver" on page 17**).
2. Copy it to a temporary directory on the device where the Oracle Client software has been installed.
3. Use the `tar` command to unpack the distribution file..

Caution! Some distributions are supplied in compressed format.

Unpacking the distribution will create a directory which is platform specific.

4. Change into the newly-created directory.

NB If you have already installed a version of the Easysoft ODBC-Oracle Driver all relevant files and directories must be removed before proceeding (see **"Uninstalling under Unix" on page 36**).

5. Install the Easysoft ODBC-Oracle Driver by using the command `./install` and following the instructions on the screen.

This will install the driver in the `/usr/local/easysoft/oracle` directory (if the defaults have been chosen during the install).

NB You will need to be logged on as the `root` user in order to install the Easysoft ODBC-Oracle Driver, because Administrative privileges are required.

You will then be required to enter the required fields to configure your client data source.

For details of the Easysoft ODBC-Oracle Driver DSN setup under Unix, see **"Unix Setup" on page 49**.

Uninstalling under Unix

Assuming that the Easysoft ODBC-Oracle Driver was installed in `/usr/local/easysoft`:

If no other Easysoft products are installed, then take a copy of `/usr/local/easysoft/license/licenses` and type `rm -rf /usr/local/easysoft`. During the install do NOT request a license and copy back the`/usr/local/easysoft/license/licenses` file.

– OR –

If you have other products from Easysoft, remove the entire `/usr/local/easysoft/oracle` directory.

CONFIGURATION

3

Configuring the Easysoft ODBC-Oracle Driver

In terms of the Easysoft ODBC-Oracle Driver, the client is the machine running the ODBC application with which you want to access the data on your Oracle database.

To allow an ODBC application on the client machine to access data on the remote server, you need to create a data source on the client.

This data source uses the Easysoft ODBC-Oracle Driver driver and specifies the attributes required to connect to the data source on the remote server.

Before setting up a data source on your client machine, you must have successfully installed the Easysoft ODBC-Oracle Driver on this machine.

Instructions for installing the Easysoft ODBC-Oracle Driver on Windows and Unix platforms are provided in **"Installation" on page 16**.

Chapter Guide

Configuring the client

This section outlines how to configure the Easysoft ODBC-Oracle Driver to connect to an Oracle database by using a data source and assumes you are, or have available for consultation, an Oracle Database Administrator.

DSN-LESS CONNECTIONS

You can also connect to a database by using a DSN-less connection string looking something like:

```
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.

The Easysoft ODBC-Oracle Driver attribute settings described in this section can also be added to the connection string, using the same "`PARAMETER=value;`" format.

Refer to the section relevant to your platform to continue:

- **"Windows Setup" on page 39**
- **"Unix Setup" on page 49**

Windows Setup

This section explains the steps you should take to connect an ODBC application on a Windows machine to an Oracle data source on a remote server.

The first step is to open Microsoft's Data Source Administrator.

1. Select **Start > Settings > Control Panel**, open `Administrative Tools` and then `Data Sources (ODBC)`.

Win 9x	Select **Start > Settings > Control Panel** and open the `ODBC` icon.

The ODBC Data Source Administrator opens.

2. To create a data source that is only available to the user currently logged into this machine, select the **User DSN** tab.

   – OR –

   To create a data source that is available to any user who logs into this machine, select the **System DSN** tab.

3. Click the **Add...** button to add a new data source.

   The **Create New Data Source** dialog box is displays a list of drivers:

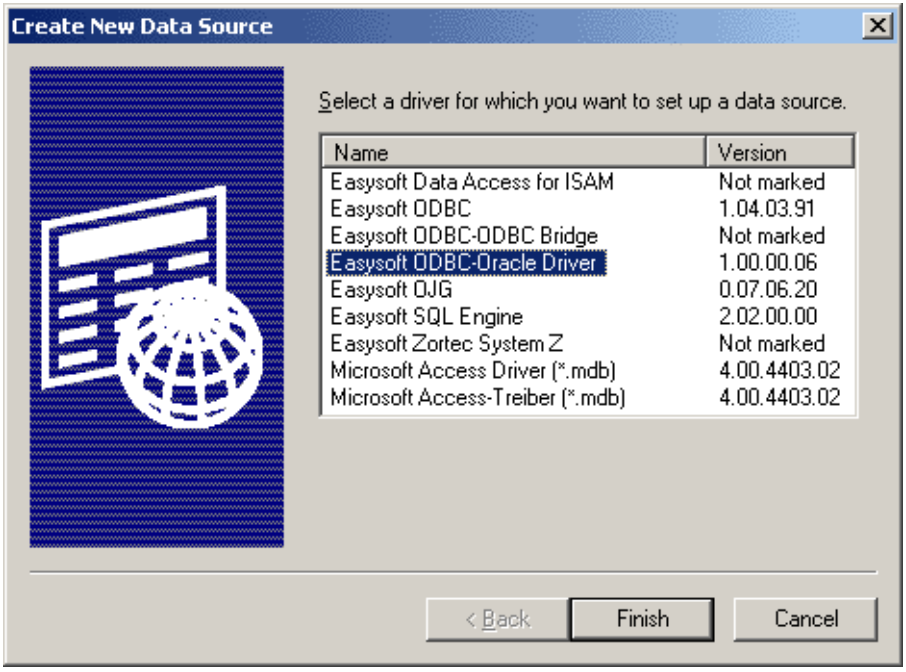


Figure 17: The Create New Data Source dialog box

4. Select `Easysoft ODBC-Oracle Driver` and click **Finish**.

The Easysoft ODBC-Oracle Driver DSN configuration dialog box is displayed:

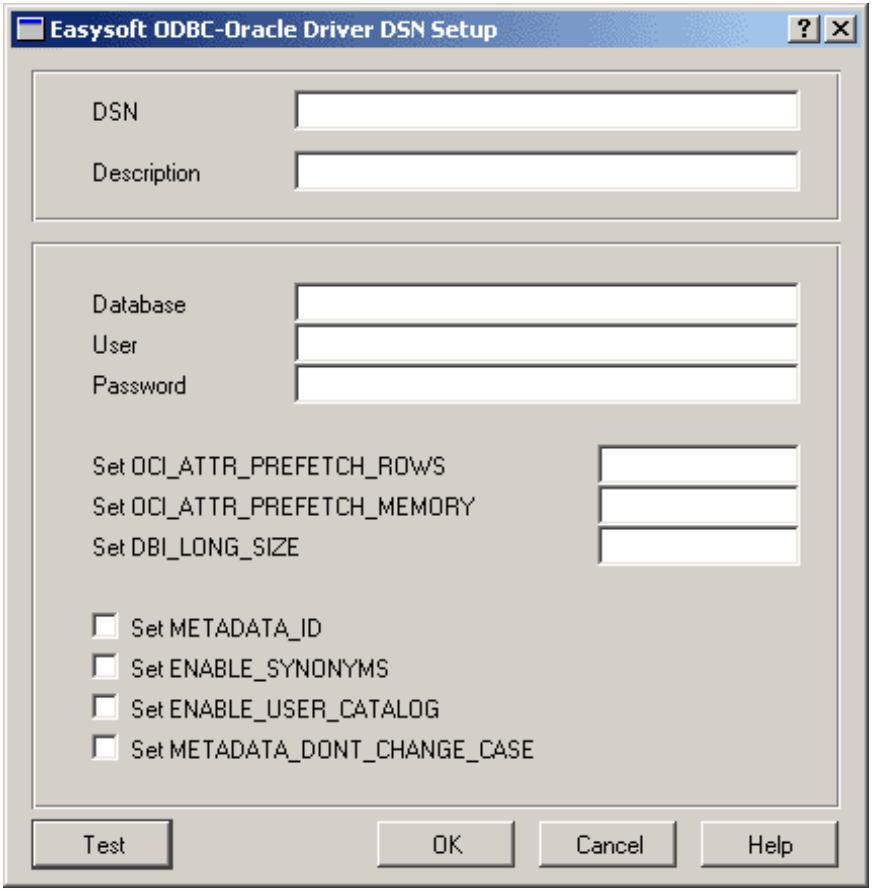


Figure 18: The Easysoft ODBC-Oracle Driver DSN Setup dialog box

The attributes on this dialog box are split into two sections, arranged by functionality, from top to bottom:

- how the data source appears to the driver manager and ODBC application
- details and special tuning settings for the data source on the remote server machine

The **Test** button allows you to check that the client is able to connect to the specified server data source.

5. In the **DSN** field, enter a name for this data source. Choose carefully because you will not be able to change this after pressing **OK**.
6. In the **Description** field, enter something that would help a user faced with a choice of data sources.

SPECIFYING THE DSN ON THE REMOTE MACHINE

7. In **Database**, enter the *`physical`* name of the target database on your remote machine.
8. In the **User** and **Password** boxes, enter the user name and password of a valid logon account on the server machine (if required). If your server is a Windows NT machine, you may need to include the NT domain name with the user name. If you need to include a domain name, use the format `domain/user name`. For example: `admin/John Smith`.

NB	These values will update the Oracle `tnsnames.ora` file, so ensure that they are correct

SPECIAL ATTRIBUTES

Leave the following settings at their default values if you are unsure about how to use them:

9. In the **Set OCI_ATTR_PREFETCH_ROWS** box enter the number of rows returned from a single "`fetch`" call made to the server. For example, if the value of `OCI_ATTR_PREFETCH_ROWS` is set to ten then ten rows will be fetched from the database server and the next call to `SQLFetch` will not need to make a call to the server as the required row will be held by the client already.

10. In the **Set OCI_ATTR_PREFETCH_MEMORY** box enter the number of bytes of memory used on the client to store records returned from a single `SQLFetch` call made to a driver. This will effectively control the number of records returned, which will be the total required in order to fill the allocated memory area. For example, if the available memory can store two rows then the next call to `SQLFetch` will not need to make a call to the server, as the required row will be held by the client already.

NB

By default the Easysoft ODBC-Oracle Driver makes a call to the database server for every two records returned.

`OCI_ATTR_PREFETCH_ROWS` and `OCI_ATTR_PREFETCH_MEMORY` allow a user to specify either the number of rows to be fetched or the amount of memory to be used when fetching data.

They effectively duplicate each other, and it is only necessary to set either one or the other. If you do set both values then the `OCI_ATTR_PREFETCH_ROWS` setting will take precedence.

`OCI_ATTR_PREFETCH_ROWS` and `OCI_ATTR_PREFETCH_MEMORY` set the Oracle Statement attributes of the same name e.g.:

```
OCI_ATTR_PREFETCH_ROWS     = 2
OCI_ATTR_PREFETCH_MEMORY   = 100
```

11. In the **Set DBI_LONG_SIZE** box, enter the maximum size in bytes of a LONG column, which will override the preset value.

    Perl DBI tries to allocate a buffer the size of a LONG column and, as this is rather large, it can cause problems which setting `DBI_LONG_SIZE` can resolve.

12. Select the **Set METADATA_ID** check box to set the default value of the Connection Attribute `SQL_ATTR_METADATA_ID` to `SQL_TRUE` (see **"StarOffice 5.2" on page 57**).

13. Select the **Set ENABLE_SYNONYMS** check box to return table name synonyms in the metadata results set (the default is to not see the synonyms).

14. Select the **Set ENABLE_USER_CATALOG** check box to return only values for the user name by which you are logged on in metadata results sets (the default is to see values for all users).

15. Select the **Set METADATA_DONT_CHANGE_CASE** check box to preserve the case of the parameter values passed to metadata calls.

    `ENABLE_SYNONYMS` and `ENABLE_USER_CATALOG` can be used to change the default functionality of the Easysoft ODBC-Oracle Driver by reducing the amount of metadata returned from the database server, depending on whether they are switched on or off.

NB	These parameters can be used to reduce the time taken to obtain key information from the database.

CHECK YOUR VALUES

16. Now click the **Test** button.

    The Easysoft ODBC-Oracle Driver attempts to connect to the data source on the server machine and send an ODBC request, displaying the results in a window.

17. If you receive an error message then you need to check the entries you have made into your DSN setup fields.

    You may wish to try to access your database by running SQL Plus from **Start > Programs > Oracle > Application Development > SQL Plus**.

    If this is successful, the problem can be assumed to be on the client machine, rather than the server machine.

    – OR –

    You will see an information message if you have successfully connected to the server:

Figure 19: The Easysoft Setup Test DSN dialog box

18. Click the **OK** button in the test box and the **OK** button in the DSN dialog box.

    The connection has been made.

CONNECTING A CLIENT APPLICATION IN WINDOWS

There is now a data source on the Windows machine that connects via the Easysoft ODBC-Oracle Driver to an Oracle data source on a remote server machine.

An example ODBC application can now be connected to the local data source to demonstrate that the Easysoft ODBC-Oracle Driver is functioning correctly.

> **NB** This section requires knowledge of Microsoft Access.

1. Start Microsoft Access (for example) and create a blank database.
2. Select **File > Get External Data > Link Tables**.

   The **Link** dialog box displays the existing databases on your system:

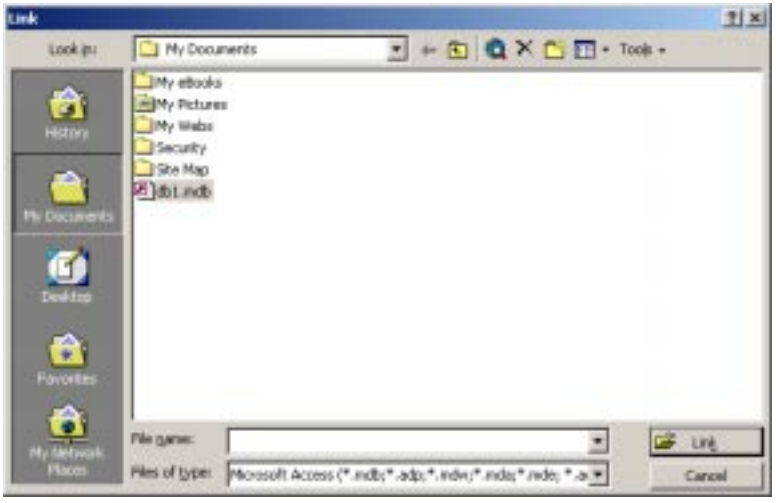


Figure 20: The Link Tables dialog box in Microsoft Access

3. From the **Files of type** drop-down list, choose **ODBC Databases**.

The **Select Data Source** dialog box displays the existing data sources on your system:

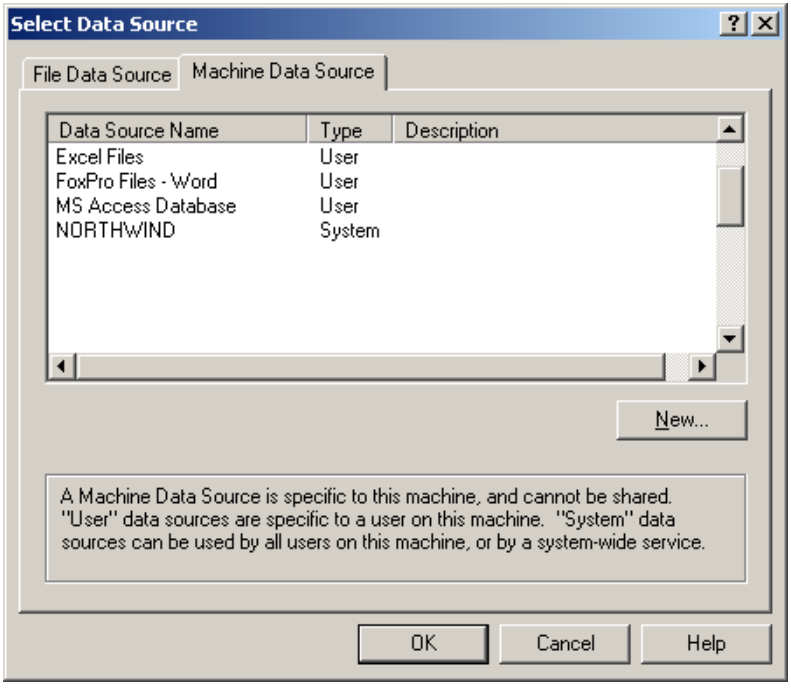


Figure 21: The Select Data Source dialog box Machine Data Source tab

4. Click the **Machine Data Source** tab and find the local data source you created in the list (note that your description of the data source appears beside it).
5. Select your data source and click **OK**.

   Microsoft Access interrogates the Easysoft ODBC-Oracle Driver, which relays the questions to your remote data source.

The **Link Tables** window is displayed, showing a list of available datasets:

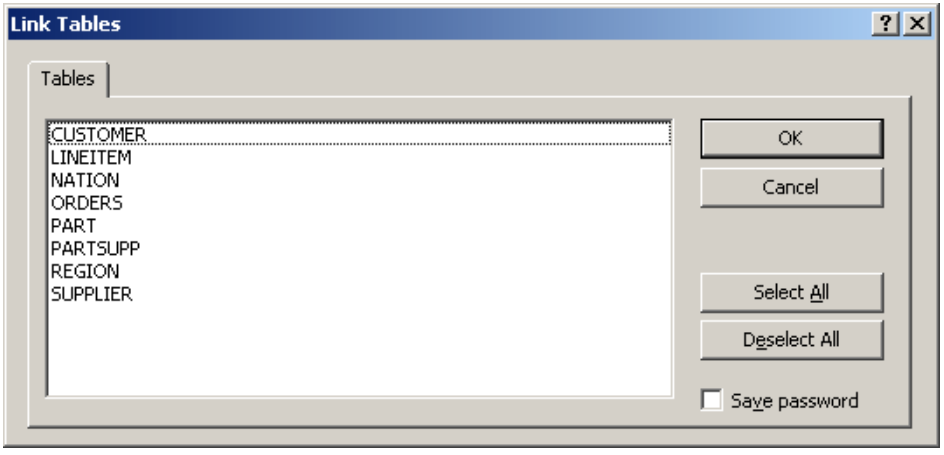


Figure 22: The Link Tables dialog box Tables tab

6. Click on a table and then click **OK**.

   After a short wait, you are returned to the **Database** window.

7. Double-click a table to open and browse it.

Unix Setup

A default DSN named `[ORACLE]` will be created and added to the `odbc.ini` file on the client machine when the Easysoft ODBC-Oracle Driver is installed.

You may then either change some of the initial configuration parameter values for the sample data source or add extra data sources.

For the addition of a data source, all the settings in the following example must be appended to the relevant `odbc.ini` file.

> **NB** More details of configuring data sources with unixODBC can be found at **www.unixodbc.org**.

You will need to edit the physical database name (`Database`), user name (`User`) and password (`Password`) settings to configure your Oracle DSN in your `odbc.ini` file:

e.g.

```
[ORACLE]
Driver = ORACLE
Description =
Database = test.server
User = system
Password = manager
```

> **NB** These values will update the Oracle `tnsnames.ora` file, so ensure that they are correct

Other optional attribute values may be set in the `odbc.ini` file, and can be categorized into three sections:

BEHAVIOUR-RELATED SETTINGS

- **METADATA_ID**

  When ON (i.e. set to 1), the default value of the Connection Attribute `SQL_ATTR_METADATA_ID` is set to `SQL_TRUE` (see **"StarOffice 5.2" on page 57**).

  Note that `METADATA_ID` is added to `odbc.ini` automatically with a default setting of 0.

- **METADATA_DONT_CHANGE_CASE**

  When ON (i.e. set to 1), the case of the parameter values passed to metadata calls will not change.

- **DBI_LONG_SIZE**

  Any value specified will overridde the maximum size of a LONG column (in bytes).

  Perl DBI tries to allocate a buffer the size of a LONG column and, as this is rather large, it can cause problems which setting `DBI_LONG_SIZE` can resolve.

- **USE_LONGS**

  When ON (i.e. set to 1), information on LONG data types will be returned in the results set from the `SQLGetTypeInfo` function call.

  Restrictions with LONG data types in Oracle databases (such as only permitting one column per table to be defined) often cause errors to occur, and this attribute can be used to include LONG within the list of valid data types which can be used by an application.

- **METADATA_DONT_DO_SCHEMA**

  When ON (i.e. set to 1), schema names are not returned by `Metadata` calls, which prevents unexpected results being received by applications (notably OpenOffice 1.0) which do not handle the SCHEMA part of names correctly.

- **DATA_TYPE_MAP**

  The following values can be set in order to map Oracle data types onto ODBC data types:

Value	Oracle Data Type	ODBC Data Type
0	NUMBER <= 4 digits	SQL_SMALLINT
	NUMBER <= 9 digits	SQL_INTEGER
	NUMBER = n digits	SQL_NUMERIC
	NUMBER = n,m digits	SQL_NUMERIC
1	NUMBER <= 4 digits	SQL_SMALLINT
	NUMBER <= 9 digits	SQL_INTEGER
	NUMBER = n digits	SQL_DOUBLE
	NUMBER = n,m digits	SQL_DOUBLE
2	NUMBER <= 4 digits	SQL_SMALLINT
	NUMBER = n digits	SQL_INTEGER Note: this mapping can cause problems fetching large numbers
	NUMBER n,m digits	SQL_DOUBLE

Figure 23: Oracle to ODBC Data Type mapping

PERFORMANCE-RELATED SETTINGS

OCI_ATTR_PREFETCH_ROWS and OCI_ATTR_PREFETCH_MEMORY update the Oracle Statement attributes of the same name:

e.g.

```
OCI_ATTR_PREFETCH_ROWS     = 2
```

– OR –

```
OCI_ATTR_PREFETCH_MEMORY   = 100
```

By default, the Easysoft ODBC-Oracle Driver makes a call to the database server for every two records returned.

These two settings allow a user to specify as an alternative either the number of rows to be fetched or the amount of memory to be used when fetching data.

NB	As OCI_ATTR_PREFETCH_MEMORY effectively duplicates the functionality of OCI_ATTR_PREFETCH_ROWS, it is only necessary to set one of the two attributes. If both values are set then the OCI_ATTR_PREFETCH_ROWS setting will take precedence.

- **OCI_ATTR_PREFETCH_ROWS**

  Indicates the number of rows returned from a single "fetch" call made to the server.

  For example, if the value of OCI_ATTR_PREFETCH_ROWS attribute is set to ten, then ten rows will be fetched from the database server and the next call to SQLFetch will not need to make a call to the server as the required row will be held by the client already.

- **OCI_ATTR_PREFETCH_MEMORY**

  Indicates the number of bytes of memory used on the client to store records returned from a single `SQLFetch` call made to a driver.

  This will effectively control the number of records returned, which will be the total required in order to fill the allocated memory area.

  For example, if the available memory can store two rows then the next call to `SQLFetch` will not need to make a call to the server, as the required row will be held by the client already.

- **NO_LOBS**

  When ON (i.e. set to 1), will increase the speed at which the Easysoft ODBC-Oracle Driver retrieves data from an Oracle database if there are no CLOB or BLOB data types in use.

FUNCTIONALITY-RELATED SETTINGS

`ENABLE_SYNONYMS` and `ENABLE_USER_CATALOG` can be used to change the default functionality of the Easysoft ODBC-Oracle Driver by reducing the amount of metadata returned from the database server.

- **ENABLE_SYNONYMS**

  When ON (i.e. set to 1), table name synonyms will be returned in the metadata results set (the default is to not see the synonyms).

- **ENABLE_USER_CATALOG**

  When ON (i.e. set to 1), only values for the user name by which you are logged on will be returned in metadata results sets (the default is to see values for all users).

NB	ENABLE_SYNONYMS and ENABLE_USER_CATALOG can be used to reduce the time taken to obtain key information from the database.

ENVIRONMENT

For the Easysoft ODBC-Oracle Driver to function correctly the following environment variables **must** be created and given values specific to your own machine's directory structure:

- `ORACLE_HOME`

  This **must** be the Oracle Client software directory:

  e.g.

  ```
  ORACLE_HOME=/home/oracle/OraHome1
  export ORACLE_HOME
  ```

- `LD_LIBRARY_PATH`

  This **must** always be set to the directory `$ORACLE_HOME/lib`:

  e.g.

  ```
  LD_LIBRARY_PATH=$LD_LIBRARY_PATH/home/oracle/OraHome1/lib
  export LD_LIBRARY_PATH
  ```

The Easysoft ODBC-Oracle Driver must also be able to find the following shared objects (which are installed as part of the Easysoft ODBC-Oracle Driver install routine):

- `libodbcinst.so`

By default this will always be located in `/usr/local/easysoft/unixODBC/lib/libodbcinst.so`:

- `libeslicshr.so`

  By default this will always be located in `/usr/local/easysoft/lib/libeslicshr.so`

You may need to set up and export LD_LIBRARY_PATH, SHLIB_PATH or LIBPATH (depending on your operating system and run-time linker) to include the directories where `libodbcinst.so` and `libeslicshr.so` are located.

NB	The shared object file extension (`.so`) may vary depending on the operating system.

ESTABLISHING A TEST CONNECTION

You can prove that the Easysoft ODBC-Oracle Driver is working by executing the following Unix commands to run the `isql` query tool:

1. Change directory into

   `/usr/local/easysoft/unixODBC/bin`

2. Type `./isql -v` *DSN*

   where `[DSN]` is the name of the target data source

3. At the prompt you will be able to enter SQL commands to query your database, such as:

   ```
   SQL> select table_name from user_tables;
   ```

   to return sample data.

TECHNICAL REFERENCE

A

Technical Reference for the Easysoft ODBC-Oracle Driver

This section contains extra information relating to the deployment of the Easysoft ODBC-Oracle Driver.

Appendix Guide

Oracle 8i and 9i

The Easysoft ODBC-Oracle Driver will work with both 8i and 9i versions of Oracle. No changes to the driver setup are required if upgrading the Oracle Client software.

Restrictions

The Easysoft ODBC-Oracle Driver will allow you to access Oracle databases on version 8.1.6 or above.

Threading

The Easysoft ODBC-Oracle Driver is thread safe in accordance with the ODBC 3.5 specification and can be used behind threaded applications with confidence.

Application Specific Issues

StarOffice 5.2

If problems occur with metadata, the `METADATA_ID` parameter needs to be set to 1 in the `odbc.ini` file.

PHP4

PHP4 calls the `SQLDescribeParams` ODBC function when processing SQL statements that have parameters. The Easysoft ODBC-Oracle Driver correctly reports that it does not support the `SQLDescribeParams` function, but PHP4 ignores this and continues with undefined results.

PERL DBI

If attempting to fetch LONG data, set the `DBI_LONG_SIZE` to an appropriate value (see **"Configuring the client" on page 38**).

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).

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 61**) 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” on page 62**.

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.

OCI

Oracle Call Interface - a set of low-level APIs (Application Programming Interface Calls) used to interact with Oracle databases. It allows the use of operations like logon, execute, parse, fetch, etc. OCI programs are normally written in C or C++, although they can be written in almost any programing language. Unlike with the Oracle Precompilers (like Pro*C and Pro*COBOL), OCI programs are not precompiled.

ORACLE_HOME

The environment variable which contains the path where Oracle software has been installed.

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 - an international standard text language for querying and manipulating databases.

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.

B

GLOSSARY

Terms and definitions

INDEX

P

R

S

T

U

W