Easysoft® Data Access
ODBC-Oracle Driver

Installation Guide and User Manual

Version 15.

This manual documents version 2.0.n of the Easysoft ODBC-Oracle
Driver.

Publisher: Easysoft Limited

Thorp Arch Grange

Thorp Arch

Wetherby

LS23 7BA

United Kingdom

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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 data sources from an ODBC-compliant application.

Chapter Guide

- **Intended Audience**
- **Displaying the Manual**
- **Notational Conventions**
- **Typographical Conventions**
- **Contents**
- **Trademarks**

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

- **Introduction**

  Introduces the Easysoft ODBC-Oracle Driver

- **Installation**

  Explains how to install the Easysoft ODBC-Oracle Driver

- **Configuration**

  Explains how to configure the Easysoft ODBC-Oracle Driver

- Appendices

  Comprising a Technical Reference and Glossary.

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'.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates.

Easysoft and Easysoft Data Access are trademarks of Easysoft Limited.

INTRODUCTION

Introducing the Easysoft ODBC-Oracle Driver

The Easysoft ODBC-Oracle Driver provides ODBC 3.5 access to Oracle 8, 9 and 10 databases from other computers across the network running any supported Windows or Unix variant.

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**
- **Product Dependencies**
- **Deployment**

Product Status

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

- Windows x86

- Linux Intel

- Solaris Sparc 32 bit and 64 bit

- Solaris Intel

- Compaq TRU-64

- AIX 32 bit anf 64 bit

- HP-UX 32 bit and 64 bit

- HP-UX Itanium

Software problems can be reported to **support@easysoft.com** by users who have either purchased support or registered via the website at **htt://www.easysoft.com** and are evaluating products with a view to subsequent purchase.

Client tools tested include ApplixWare, StarOffice, Perl DBI and PHP4. Notes associated with these products are located in **"Application Specific Issues" on page 79**.

Remote access to the Easysoft ODBC-Oracle Driver has also been tested via the Easysoft ODBC-ODBC Bridge. Applications tested by this route including Microsoft Access and Microsoft Query.

Product Dependencies

The Easysoft ODBC-Oracle Driver requires the user to obtain and install a copy of the Oracle Client Software (see **"Oracle Client software" on page 77**).

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 JDBC-ODBC 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.
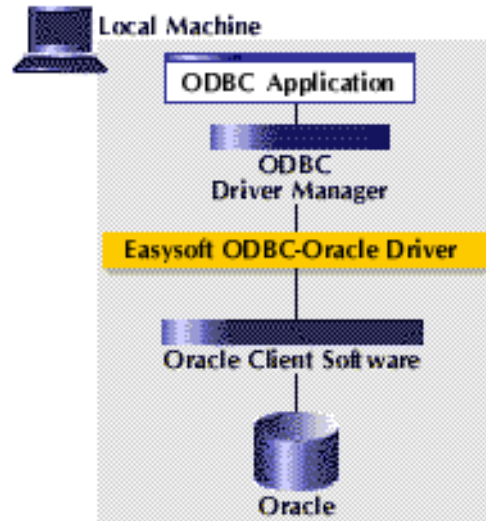
Figure 1: Local access to a local Oracle database

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 17**).
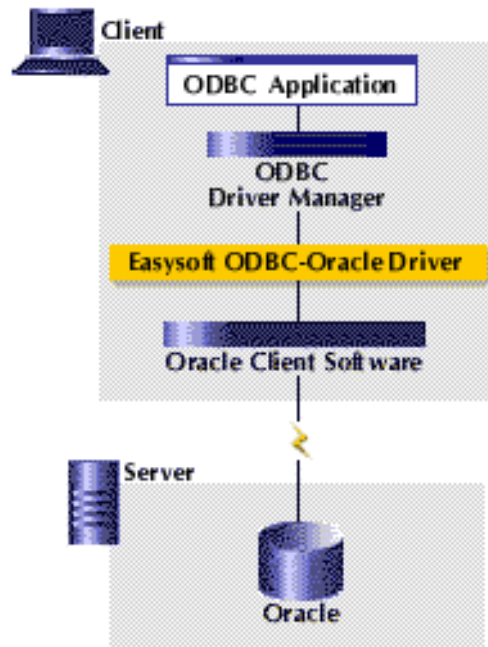
Figure 2: Single client access to a remote Oracle database

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.
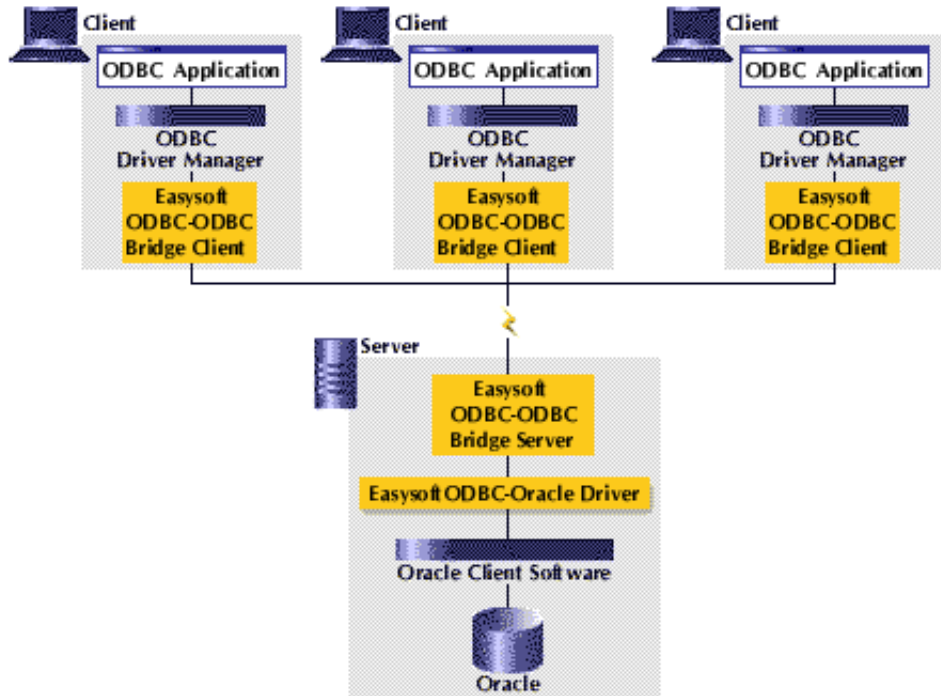
Figure 3: Access to a remote Oracle database without Net8

INSTALLATION

Installing the Easysoft ODBC-Oracle Driver

This section explains how to install, license and remove the Easysoft ODBC-Oracle Driver 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-Oracle Driver**

- **What to install**

- **Installing on Windows**

- **Uninstalling on Windows**

- **Installing on Unix**

- **Uninstalling on Unix**

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 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, containing free patches, upgrades,
    documentation and beta releases of Easysoft products, as well
    as definitive releases.

    Change to the `pub/oracle` 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-Oracle Driver install file varies from platform to platform, but is of the form:

- `odbc-oracle-x_y_z-platform`.exe (Windows)

– OR –

- `odbc-oracle-x.y.z-platform`.tar (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 and you may come across files of the form:

- `odbc-oracle-x.y.z-platform-variation`.tar

within specific Unix platforms, where "`platform-variation`" refers to alternative versions available for a single platform.

NB	Select the highest release available for your platform within your licensed major.minor version number (installing software of a different major.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.

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

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

Caution!

> As long as you stop all running applications (under Windows), or any software either from Easysoft or using Easysoft drivers (under Unix), it is safe to reinstall or upgrade the Easysoft ODBC-Oracle Driver without uninstalling.
>
> If you do uninstall, you should first back up any configuration data that you still need, as uninstalling some Easysoft products will result in this information being deleted (license details remain in place).

Refer to the section relevant to your platform to continue:

- **"Installing on Windows" on page 23**
- **"Uninstalling on Windows" on page 36**
- **"Installing on Unix" on page 38**
- **"Uninstalling on Unix" on page 48**

Installing on Windows

1. Execute the file distribution that you downloaded in **"Obtaining the Easysoft ODBC-Oracle Driver" 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 4: The Welcome dialog box

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

The **License Agreement** dialog box then displays Easysoft End User licensing details:
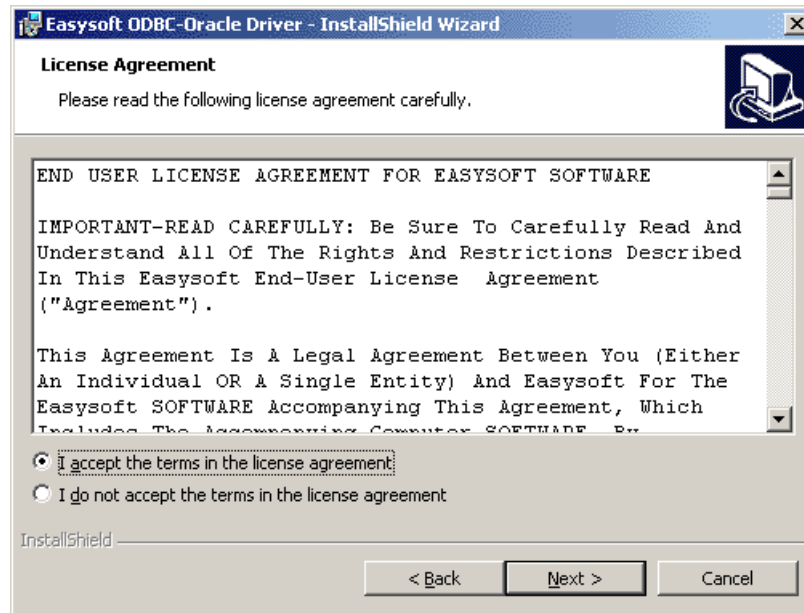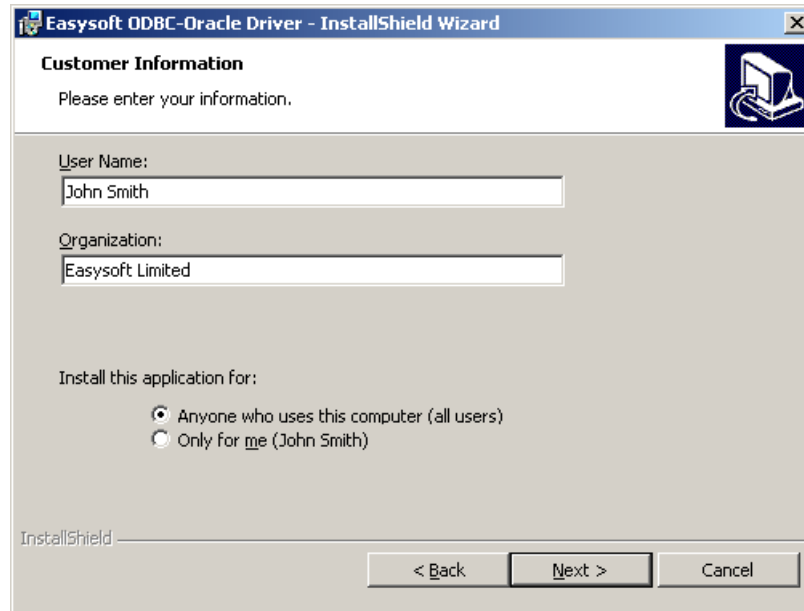
Figure 5: The License Agreement dialog box

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:
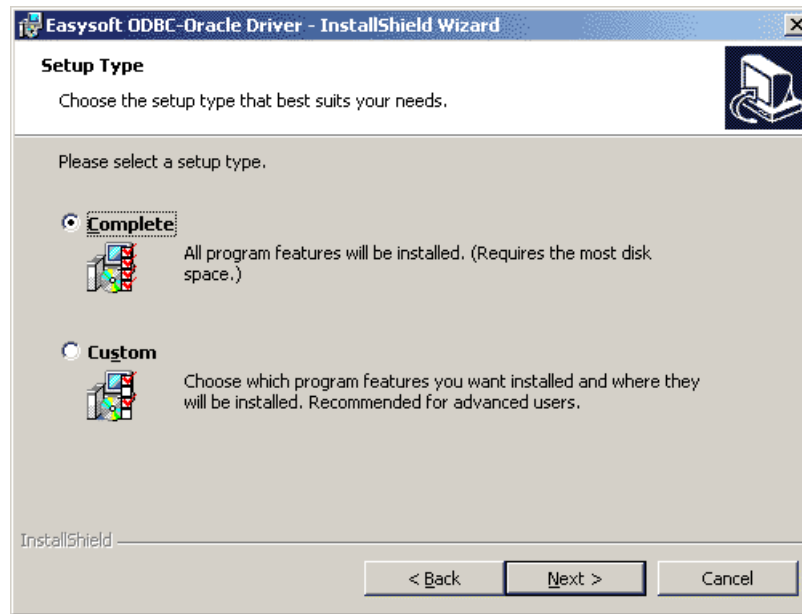
Figure 7: The Setup Type dialog box

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):
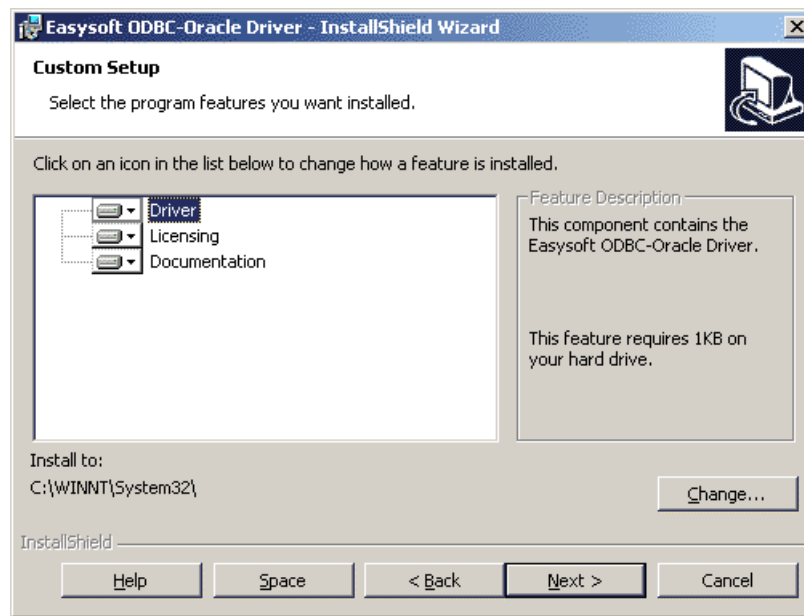
Figure 8: The Custom Setup dialog box

- Click **Change** to amend the path into which the selected component is to be installed.

- Click **Help** to display additional information on the available installation options for each component.

- Click **Space** 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:
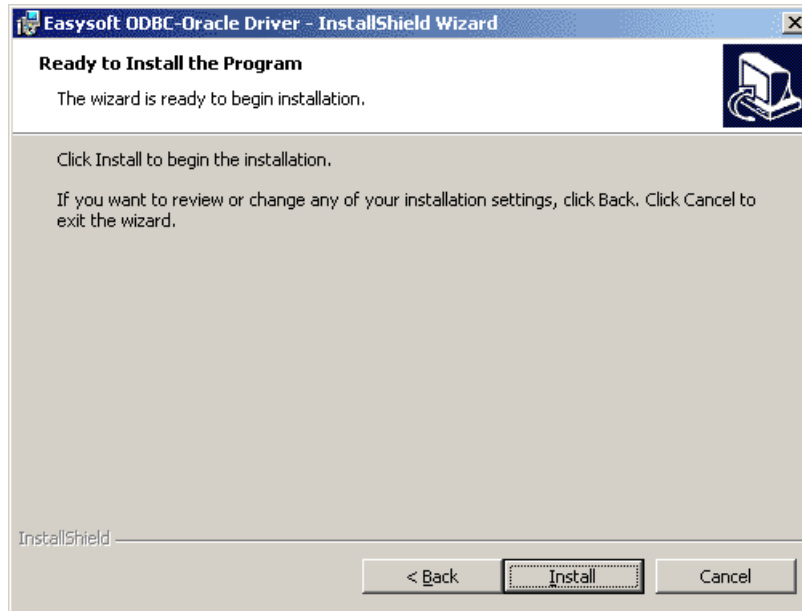
Figure 9: The Ready to Install dialog box

6. Click **Install**.

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

NB	If you are upgrading and have licensed a previous version of the software, you do not need to repeat the licensing procedure.
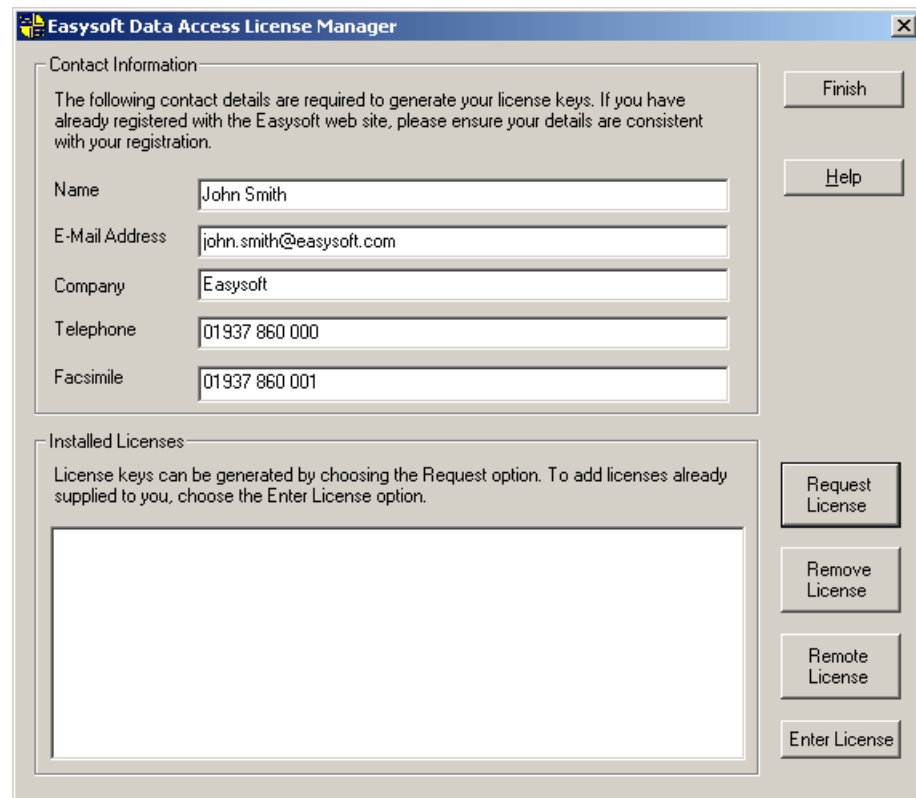
Figure 10: The License Manager dialog box

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.

- 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.

   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.

8. Click **Request License**.

   You are asked for a license type:
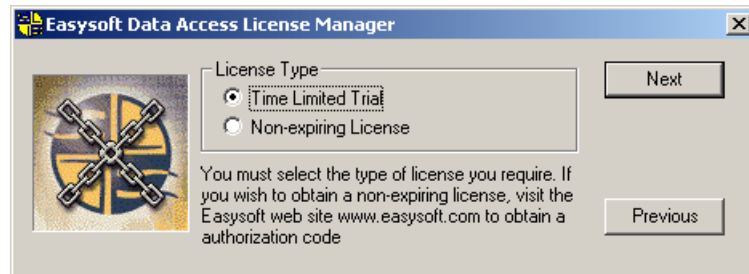
Figure 11: The License Type dialog box

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:
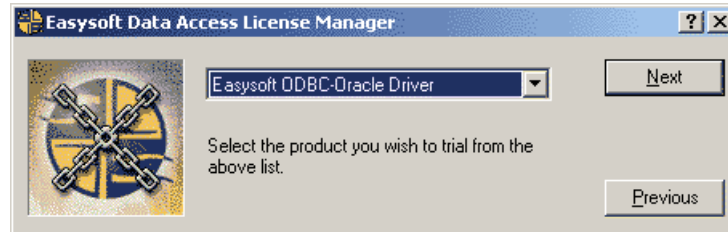
Figure 12: Select the product you are licensing

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.
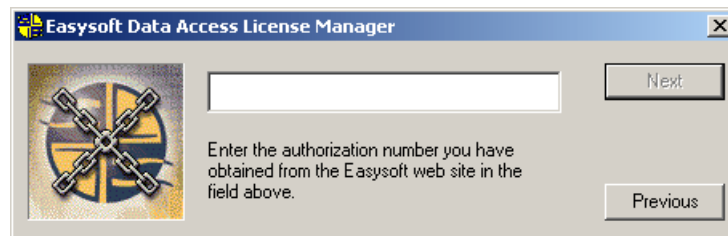
Figure 13: The Authorization Number dialog box

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 sends this information to the license server at Easysoft.

The whole process is automatic you can proceed to **step 10 on page 33**.

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).

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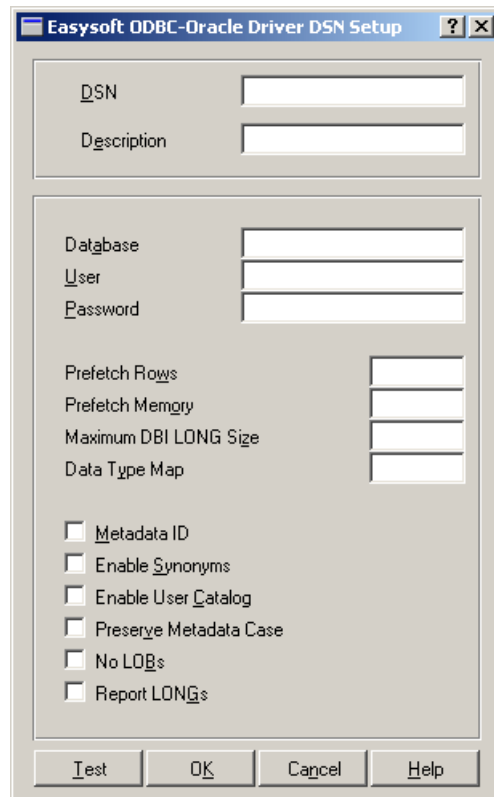
Figure 15: The Easysoft ODBC-Oracle Driver DSN Setup dialog box

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 56**.

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

The **InstallShield Wizard Complete** dialog box is displayed:
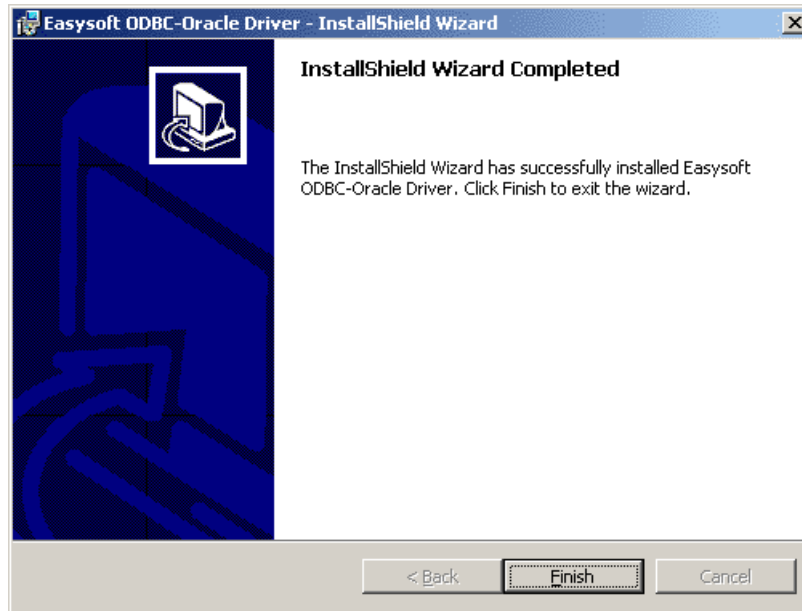
Figure 16: The InstallShield Wizard Complete dialog box

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.

Uninstalling on Windows

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

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

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

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	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 if a user deletes an application directly without using **Add/Remove Programs** or if 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**.

   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 on Unix

Although this section covers a range of platforms and the precise output may vary from system to system, the installation process is essentially the same.

INSTALLATION REQUIREMENTS

The Unix installation routine has the following requirements:

- The Bourne shell (or BASH) must either be named (or linked to) `/bin/sh` or the first line of the `install` file updated to the correct location.

- Various common Unix commands such as `grep`, `awk`, `cut`, `ps`, `sed`, `cat`, `wc`, `uname`, `tr` and `find`.

  If any of these commands are missing they can be obtained from the Free Software Foundation (**http://www.fsf.org**).

- Depending on the platform, you will need up to 3Mb of free disk space for the installed programs and up to 3Mb temporary space for the installation files themselves.

PREPARATION

1. Log on to your Unix machine as the `root` user.

2. Download the Easysoft ODBC-Oracle Driver (see **"Obtaining the Easysoft ODBC-Oracle Driver" on page 20**).

3. Place the distribution file in a temporary directory on your Unix machine.

E XTRACTING THE INSTALLATION FILES

4. Change to the directory in which the distribution file resides.

5. Extract the installation files from the distribution file:

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

    `gunzip odbc-oracle-x.y.z-platform.tar.gz`

    – OR –

    If the distribution file has been `bzip2`ed (i.e. the filename ends in `.bz2`), then use:

    `bunzip2 odbc-oracle-x.y.z-platform.tar.bz2`

    – OR –

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

    `uncompress odbc-oracle-x.y.z-platform.tar.Z`

6. If the distribution file has not been compacted at all (i.e. the filename ends in `.tar`), then it is ready for extraction:

    `tar -xvf odbc-oracle-x.y.z-platform.tar`

    The `tar` program creates a directory of the same name as the `tar` file (without the final `.tar`) containing further archives, checksum files, a script called `install` and a text file called `INSTALL`.

It also contains a versioned directory to ensure that any shared components already installed by other Easysoft products are only overwritten if those included in this distribution are newer.

NB	If you do not wish to keep the original downloaded distribution file you can now delete it safely.

Change into the newly-created `odbc-oracle-x.y.z-platform` directory.

Caution!	Check through the `INSTALL` file before continuing. It gives full installation instructions for the Unix-literate, and if you are confident in the use and administration of your system, you can follow the instructions in the `INSTALL` file instead of working through the remainder of this section.

B EGINNING THE I NSTALLATION

7. Type:

    `./install`

NB	During the installation, you are asked to answer some questions. The default reponse is displayed in square brackets [], which you can press `<Enter>` to accept or you can choose any of the alternative responses shown in round brackets () by typing the required response and then pressing `<Enter>`.
	Occasionally, the install program pauses to give you time to read the information displayed on screen. Press *<Enter>* to continue when you have read the current screen of information.

8. If you have read and agree to the **Easysoft License Agreement**, type `yes` and then press `<Enter>` to continue.

NB	You must type `yes`, not `y`, to continue.

9. The script pauses to allow you to read its output so far. Up to this point it has checked the following:

    •   that you have the minimum set of Unix programs it requires

    •   the platform you are running

    •   any platform-specific components, such as the version of the C runtime library

10. Press `<Enter>` to continue.

    The script checks the archive package.

11. Press `<Enter>` to continue.

12. Specify the directory into which the Easysoft ODBC-Oracle Driver is to be installed.

    If you accept the default base directory, the files are installed into a subdirectory called `easysoft` within the specified path.

    For example, if you accept the default path of `/usr/local`, the files are installed into `/usr/local/easysoft`.

    If you specify an alternative directory, the files are installed into that directory but a symbolic link is created from `/usr/local/easysoft` pointing to the install directory. This link is necessary for licensing to work.

13. If an existing version of the Easysoft ODBC-Oracle Driver has already been installed on this machine then Easysoft recommend that this be removed and you will be prompted to do so at this point.

14. Press `y` to continue or `n` to stop the installation.Installing unixODBC

The Easysoft ODBC-Oracle Driver requires unixODBC to be installed and if unixODBC is not already present, the script offers to install the copy of the unixODBC driver manager contained in the Easysoft ODBC-Oracle Driver distribution.

NB The entire unixODBC source distribution may also be downloaded from **ftp://ftp.easysoft.com/pub/unixODBC** and installed independently.

The unixODBC driver manager enables an ODBC application to load whichever driver is required to access the data source at runtime.

NB unixODBC is an open source project sponsored by Easysoft and other industry members. It is rapidly becoming the standard driver manager across the Unix data access community. Comprehensive documentation can be found at **http://www.unixodbc.org**.

If unixODBC is already installed, the installation script can use your existing unixODBC, but you should bare in mind the following possible complications of doing this:

- If there are multiple copies of unixODBC on your system already you will have to choose one of them. If you pick the wrong one (i.e. not the one your applications are linked with, or not the one your run-time linker uses) the Easysoft ODBC-Oracle Driver will not be visible to your applications until this is corrected.

- If you have built unixODBC yourself from sources you must make sure it has been configured correctly for use with your applications.

Easysoft ODBC-Oracle Driver distributions contain matched builds of unixODBC and the Easysoft ODBC-Oracle Driver, so installing the incorporated unixODBC build is often the safest policy.

15. Press `<Enter>` to continue and then choose whether to install unixODBC.

16. If you do not wish to install the version of unixODBC included with this distribution, enter `y`.

    – OR –

    If you wish to install unixODBC, enter `n` at the prompt.

17. The script pauses at this point. Press `<Enter>` to continue.

    The script extracts the unixODBC files.

NB	Depending on your platform this installation of the unixODBC driver manager may not contain the GUI components of unixODBC.

18. The Easysoft product database now needs resetting.

    All Easysoft products that are currently running should be closed down or they may terminate unexpectedly and any applications using them will need to be restarted.

LICENSING THE EASYSOFT ODBC-ORACLE DRIVER

19. You are now asked if you want to obtain a license. Accept the default [y] to start the licensing procedure.

    A menu of options is displayed.

20. Choose the option to license the Easysoft ODBC-Oracle Driver.

    You will then be asked to provide some contact information.

21. Enter your **Name**.

22. Enter your **Company Name**.

23. Enter at least one of **Email**, **Phone** and **Fax** (preferably all three).

24. At the **Ref** prompt, do either of the following:

- If you want a trial license, leave it blank and press *<Enter>*.

- If you want to install a purchased license, enter your authorization code and press *<Enter>*.

25. The License Manager displays a menu of licensing options.

If you have an internet connection you should select `1`, `Automatic` (this is the quickest and easiest method unless your firewall prevents the message from getting through).

– OR –

If you do not have an internet connection, or the `Automatic` option fails, select option `2` to write the required information to a text file in the current working directory called `license_request.txt`, which you will then need to view to obtain a license.

26. The License Manager displays the menu again. Select 0 to exit.

NB	The View Existing Licenses option will not display any license you obtained during this License Manager session. You must quit the License Manager and allow the install script to finish applying the license.

If you chose the automatic licensing method and licenses are retrieved, the licensing script outputs them to a file called `licenses.out`.

If the install script detects possible new licenses in the file `licenses.out` it asks whether you want to add them to the license database.

27. If you obtained licenses and you want to add them now, enter `y`.

    – OR –

    If you did not obtain licenses, enter `n`.

    – OR –

    If you do not see this message, then read on. You will need to complete the offline licensing procedure as explained in **"Completing the offline licensing procedure" on page 46**.

    A message informs you that the Easysoft ODBC-Oracle Driver has been installed and you are asked to the enter the details needed to create a data source for the Easysoft ODBC-Oracle Driver.

28. Enter an Oracle database name.

29. Enter a user name and password.

    The Easysoft ODBC-Oracle Driver installation is complete.

COMPLETING THE OFFLINE LICENSING PROCEDURE

If at **step 25 on page 45** you chose to write the licensing information to a file, you still need to complete the licensing procedure before the Easysoft ODBC-Oracle Driver can be used.

The licensing information is written to the `license_request.txt` file, which contains information including a site number (a number unique to your machine) that Easysoft requires before you can be issued with a license key.

1. Do any one of the following:

    *   Display the `license_request.txt` file (e.g. using `cat license_request.txt`) and note the site number. Now run a web browser and go to **http://www.easysoft.com/sales/autolicense.phtml**. Log in to Easysoft's web site. On the License Generator screen, choose the type of license you want, then enter your site number and click **Continue**. You can now close the web browser. You will shortly receive your license key(s) via email.

    *   Email the file `license_request.txt` to **autolicense@easysoft.com**. Your license key(s) will be emailed to you automatically.

    *   Email the file `license_request.txt` to **license@easysoft.com**. A member of the Licensing Department will email the license keys(s) to you.

2. When you receive your license key(s), append them to the file `/usr/local/easysoft/license/licenses`, removing any `LIC:` prefixes.

NB	The Easysoft license responder puts an attachment in its outgoing emails that allows Windows users to activate their licenses with a double-click. If you read your email in Windows, this attachment will be visible but it will not work for licensing Unix versions of the software.

The Easysoft ODBC-Oracle Driver is now licensed and you can begin using it.

If you need further information about licensing, please refer to the **Licensing Guide**.

U NINSTALLING ON U NIX

To uninstall the Easysoft ODBC-Oracle Driver under Unix:

- If unixODBC is installed, the Easysoft ODBC-Oracle Driver driver must be removed from its database.

- If the system has a dynamic linker (such as `ld.so` on Linux), the Easysoft ODBC-Oracle Driver directories must be removed from the dynamic linker search path (this may require `root` access, depending on the mechanism used by the platform).

- The Easysoft ODBC-Oracle Driver install directory tree must be removed (this requires the same privileges as the user who performed the installation, which is normally `root`).

A step-by-step guide follows:

1. Log in as `root`.

R EMOVING FROM UNIX ODBC

2. Check whether the Easysoft ODBC-Oracle Driver is configured under unixODBC by typing:

```
odbcinst -q -d
```

3. If "`ORACLE`" is returned in the output then remove the Easysoft ODBC-Oracle Driver entry by typing:

```
odbcinst -u -d -n ORACLE
```

If a message is displayed about a reduced usage count, repeat this step until `odbcinst` states that the Easysoft ODBC-Oracle Driver has been removed.

NB	If unixODBC is no longer required then the `odbcinst.ini` and `odbc.ini` files can be removed.

R EMOVING FROM THE DYNAMIC LINKER

Notify the dynamic linker that the shared objects are no longer available.

NB	This information only applies to systems with the `ld.so` dynamic linker (normally only Linux).

4. If the file `/etc/ld.so.conf` file exists, make a backup copy and open it.

5. Remove the path to the Easysoft ODBC-Oracle Driver shared objects:

   `<InstallDir>/easysoft/oracle`

6. If no other Easysoft software is in use then remove the path to the common Easysoft shared objects:

   `<InstallDir>/easysoft/lib`

7. If unixODBC is no longer required then remove the reference:

   `<InstallDir>/easysoft/unixODBC`

8. Run `/sbin/ldconfig` so that the dynamic linker re-reads the file and will no longer search the removed paths.

D ELETING THE S OFTWARE

Finally, remove the software from the system hard drive.

9. Change directory to:

   `<InstallDir>/easysoft/`

   `pwd`

   The system displays the current directory.

Double-check that this is the directory under which you installed the Easysoft ODBC-Oracle Driver.

Caution!

> Be very careful issuing the `rm -r` command as `root`. Normally `rmdir` will not remove directories that contain files, but `rm -r` will remove all subdirectories along with their contents. It is possible to effectively destroy your system and/or lose all user files by removing the wrong directory.

10. Remove the Easysoft ODBC-Oracle Driver installation directory:

    `ls`

    Check that you are in the right directory.

    `rm -r oracle`

    The system may ask you to confirm deletion for some files. You can confirm these as long as you are sure you are in the correct directory.

    `ls`

11. If you have no other Easysoft products on your system and you are not using any copy of unixODBC that may be in this directory, then you can delete the `easysoft` directory too.

    `cd ..`

    `rm -r easysoft`

    – OR –

    If there are other files in the directory tree (i.e. you have other Easysoft products installed) then you must not remove the `easysoft` directory, because it will contain your license keys and other important files.

12. If you left the Easysoft ODBC-Oracle Driver distribution file on your system then you may wish to remove it at this point.

The uninstall process is complete.

Any licenses you obtain for the Easysoft ODBC-Oracle Driver and other Easysoft products are stored in the `<InstallDir>/easysoft/license/licenses` file.

After uninstalling the Easysoft ODBC-Oracle Driver, unless you have deleted this file, you will not need to relicense the product when you reinstall or upgrade.

However, for security purposes you may want to make a copy of `<InstallDir>/easysoft/license/licenses` before uninstalling.

CONFIGURATION

3

Configuring the Easysoft ODBC-Oracle Driver

The Easysoft ODBC-Oracle Driver is usually installed on the machines where your applications are running. ODBC applications access ODBC drivers through the ODBC driver manager and a data source which tells the driver manager which driver to load and the ODBC driver which database to connect to and how to connect to it. This chapter describes how you create data sources, use DSN-less connections and configure the Easysoft ODBC-Oracle Driver.

Before setting up a data source, the Easysoft ODBC-Oracle Driver must have been successfully installed on the machines where your ODBC application is running.

Instructions for installing the Easysoft ODBC-Oracle Driver on Windows and Unix platforms are provided in **"Installation" on page 19**.

Chapter Guide

- **DSN-less connections**
- **OS Authentication**
- **Windows Setup**
- **Unix Setup**

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(..."DRIVER={ORACLE};DB=pubs;UID=d
emo;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.

Further Easysoft ODBC-Oracle Driver attribute settings, as 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:

OS Authentication

The Easysoft ODBC-Oracle driver can be configured to connect to an Oracle database using OS Authentication. To do this, you must first ensure that the database and client are configured and working correctly. More details on the use of OS Authentication and its implications can be found in your Oracle documentation. To establish that the system is configured correctly, we recomend using a tool such as sqlplus, before attemping to configure your driver. Once the oracle software is configured, the driver can be set up by leaving the username and password fields empty.

Windows Setup

To connect an ODBC application on a Windows machine to an Oracle data source on a remote server:

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:
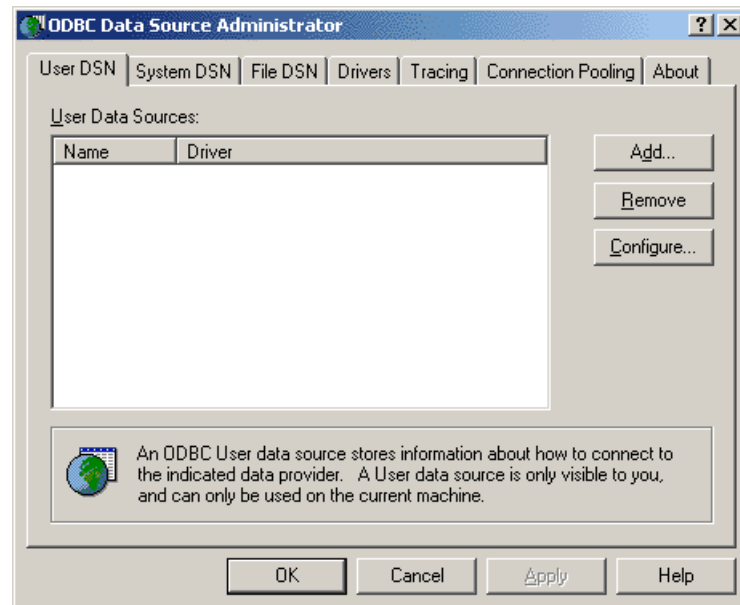
Figure 17: The ODBC Data Source Administrator

2. 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 **Add...** to add a new data source.

   The **Create New Data Source** dialog box displays a list of drivers:
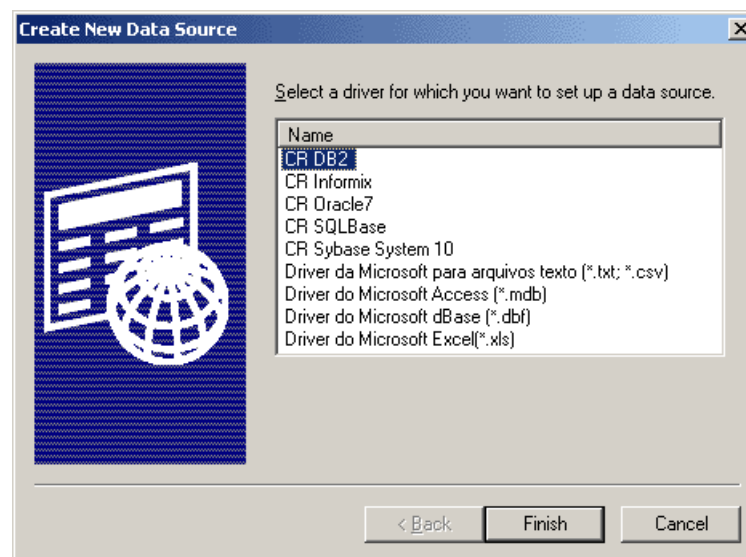
Figure 18: The Create New Data Source dialog box

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

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

Figure 19: 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

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

5. In the **DSN** box enter a name for this data source.

    Choose carefully because you will not be able to change this after pressing **OK**.

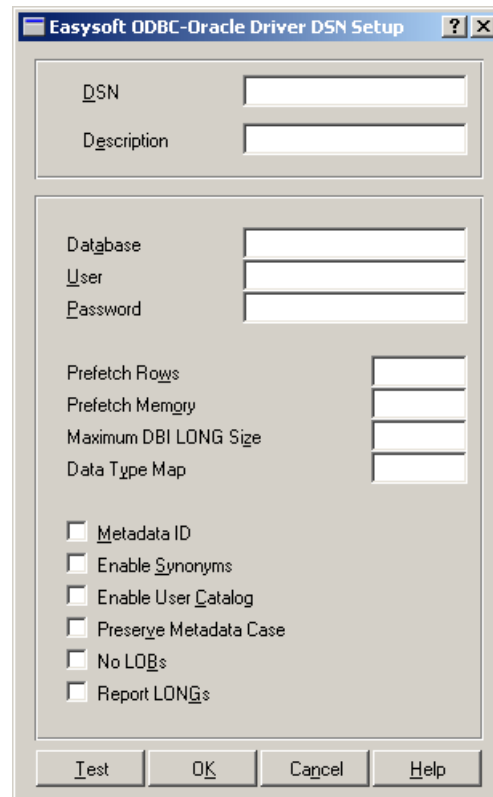6. In the **Description** box enter something that would help a user faced with a choice of data sources.

DATABASE USER AND PASSWORD

7. In the **Database** box enter the logical name used to identify the Oracle target database.

8. In the **User** and **Password** boxes enter the user name and password of a valid logon account on the Oracle target database.

SPECIAL ATTRIBUTES

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

9. In the **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 **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 **Maximum 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. In the **Data Type Map** box enter one of the following values 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 20: Oracle to ODBC Data Type mapping on Windows

13. Select the **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 79**).

14. Select the **Enable Synonyms** check box to return table name synonyms in the metadata results set (the default is to not see the synonyms).

15. Select the **Enable User Catalog** check box to return only values for the user name by which you are logged on in metadata result sets (the default is to see values for all users).

16. Select the **Preserve Metadata 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.

17. Select the **No LOBs** check box to increase the performance of the Easysoft ODBC-Oracle Driver from an Oracle database if there are no `CLOB` or `BLOB` data types in use.

18. Select the **Report LONGs** check box to return information on `LONG` data types in the result 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.

   C HECK THE D S N VALUES

19. Now click **Test**.

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

20. If an error message is displayed then check the entries that have been made into the DSN setup fields.

If the target database can be successfully accessed by running SQL Plus from **Start > Programs > Oracle > Application Development > SQL Plus** then the problem can be assumed to be on the client machine, rather than on the server machine.

– OR –

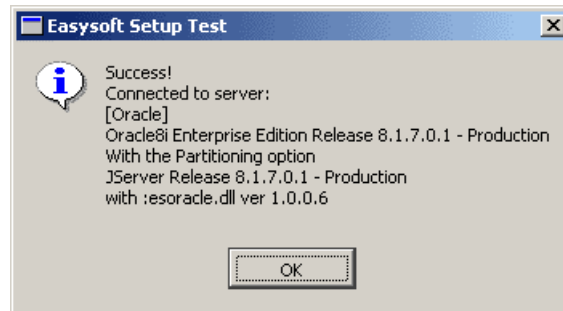An information message will be displayed if you have successfully connected to the server:

Figure 21: The Easysoft Setup Test DSN dialog box

21. Click **OK** in the **Easysoft Setup Test** dialog box and **OK** in the **Easysoft ODBC-Oracle Driver DSN Setup** dialog box.

    The connection has been made.

CONNECTING A CLIENT APPLICATION

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**.

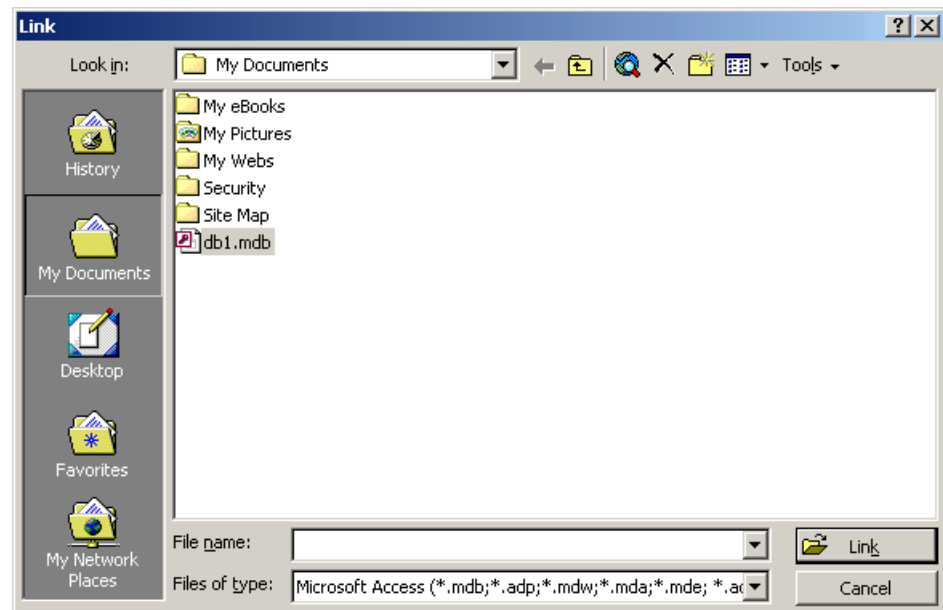   The **Link** dialog box displays the existing databases on your system:

Figure 22: The Link 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:

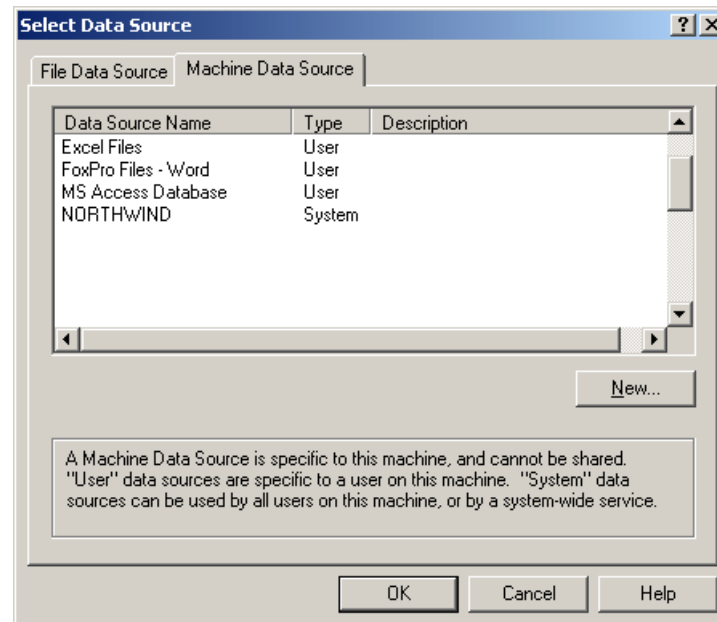**Figure 23: The Select Data Source dialog box Machine Data Source tab**

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 is displayed beside it).

5. Select your data source and click **OK**.

   Microsoft Access connects (through the ODBC Driver Manager) to the Easysoft ODBC-Oracle driver and retrieves a list of available tables .

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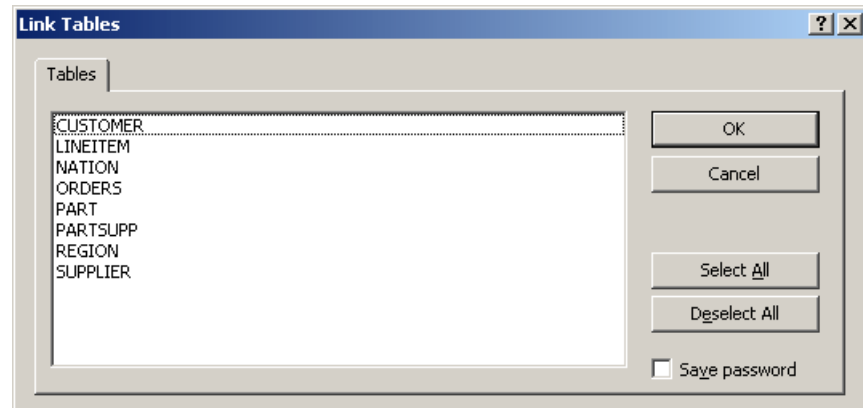

Figure 24: The Link Tables dialog box Tables tab

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

DATA SOURCE ATTRIBUTES

There are two options when setting up a data source to your Oracle data:

- Create a system data source (which is available to anyone who logs onto this Unix machine)

– OR –

- Create a user data source (which is only available to the user who is currently logged into this Unix machine)

This is exactly the same mechanism as is used on the ODBC Data Source Administrator on Windows platforms (see **"Windows Setup" on page 56**).

With unixODBC, a default DSN named `[ORACLE]` is created and added to the system `odbc.ini` file on the client machine when the Easysoft ODBC-Oracle Driver is installed.

However, if you have built unixODBC yourself, then it will be whatever path you specified in the `sysconfdir=`*directory* configure option (if `sysconfdir` has not been specified then the path will default to `/usr/local/etc`).

If you accepted the default Easysoft ODBC-Oracle Driver installation then user data sources must be created and edited in `$HOME/.odbc.ini`.

NB	By default, you must be logged in as `root` to edit a system data source defined in `/etc/odbc.ini`, but user data sources created in an `.odbc.ini` file in a home directory are visible to an individual user only.

NB	odbcinst -j will show you where the driver manager stores system and user data sources.

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

Each section of the `odbc.ini` file starts with a data source name in square brackets [ ] followed by a number of *attribute=value* pairs.

NB	Attribute names in `odbc.ini` are not case sensitive.

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**.

To configure your Oracle DSN in your `odbc.ini` file, you will need to edit:

• the physical database name (`Database`)

• the Oracle target database user name (`User`)

• the Oracle target database password (`Password`)

e.g.

```
[ORACLE]

Driver = ORACLE

Description =

Database = test.server

User = system

Password = manager
```

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 79**).

  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 override 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 25: Oracle to ODBC Data Type mapping on Unix

- **VarcharTrimTrailingSpaces**

  The default behaviour of the driver is to not trim trailing spaces from varchar types when passed as bound parameters. If VarcharTrimTrailingSpaces is set to 1 then trailing spaces are removed from the end of the data.

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 effectively controls 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), increases the performance of the Easysoft ODBC-Oracle Driver 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 are returned in metadata result sets (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 are returned in metadata result 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.

- DESCRIBE_PARAM_AS_STRINGS

    Oracle does not support the describing of parameters, so the driver does not support the SQLDescribeParam ODBC call. However, if this ini setting is set to 1 then the driver will describe any parameters as varchar.

ENVIRONMENT

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

- `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 it installs:

- `libodbcinst.so`

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

- `libeslicshr_r.so` or `libeslicshr.so`

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

- `libessupp_r.so` or `libessupp.so`

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

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

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

E STABLISHING A T EST C ONNECTION

Run the `isql` query tool to prove that the Easysoft ODBC-Oracle Driver is working:

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. Enter SQL commands to query the database, such as:

    `SQL> select table_name from user_tables;`

4. or enter 'help' to return a list of tables

    `SQL>help`

TECHNICAL REFERENCE

<div style="text-align: right">A</div>

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 Client software**

- **ODBC Conformance**

- **Oracle 8, 9 and 10i**

- **Restrictions**

- **Supported Data Types**

- **Application Specific Issues**

- **Threading**

- **Tracing**

Oracle Client software

OBTAINING THE ORACLE CLIENT SOFTWARE

Contact an Oracle Database Administrator if the Oracle Client software is not installed.

Alternatively, an Oracle distribution can be downloaded from **http://technet.oracle.com** (registration is required).

Caution! Easysoft advise that Oracle Client software is installed from a distribution CD if fast internet access is unavailable, as the download may require significant temporary disk space.

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.

ODBC Conformance

The Easysoft ODBC-Oracle Driver provides ODBC 3.5 access to Oracle databases and may be installed on either client or server machines.

Oracle 8, 9 and 10i

The Easysoft ODBC-Oracle Driver will work with both 8i, 9i and 10g 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 access to Oracle databases on version 8.1.6 and upwards.

Supported Data Types

The following Oracle data types are supported by the Easysoft ODBC-Oracle Driver:

- `BLOB`

- `LONG RAW`

- `BFILE`

- `RQW`

- `CLOB`

- `LONG`

- `CHAR`

- `DOUBLE PRECISION`

- `DATE`

- `VARCHAR2`

- `TIMESTAMP`

NB
The `TIMESTAMP` data type is not supported by Oracle 8 and the retrieval of `TIMESTAMP` data requires the installation of both Client and Server of version 9 or above.

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 **"Windows Setup" on page 56** and **"Unix Setup" on page 67**).

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. Usually applications use one connection handle and mutliple threads executing SQL statements on that connection.

Tracing

The ODBC calls an application makes can be traced:

- within the driver manager by an application

- from within the driver manager

- from within the Easysoft ODBC-Oracle Driver

WITHIN THE DRIVER MANAGER BY AN APPLICATION

An application can turn tracing on in the driver manager via the ODBC API `SQLSetConnectAttr` (...,`SQL_ATTR_TRACE`,...).

The trace filename may also be specified with the `SQLSetConnectAttr` attribute `SQL_ATTR_TRACEFILE`.

FROM WITHIN THE DRIVER MANAGER

Tracing in the driver manager is platform-specific:

- On Windows:

  Start the ODBC driver manager administration interface via **Start Menu > Control Panel > ODBC Data Sources**.

  Click on **Tracing**, ensure the specified filename is valid and click **Start Tracing Now**.

- On Unix:

  For the unixODBC driver manager, add two attributes to the [`ODBC`] section (create one if none exists) in `odbcinst.ini`.

  ```
  Trace = Yes

  TraceFile = /path/filename
  ```

  e.g.

  ```
  [ODBC]

  Trace = Yes

  TraceFile = /tmp/sql.log
  ```

Ensure that the user who is running the application to be traced has write permission to `TraceFile` (and to the directory containing it), or no tracing information will be produced.

FROM WITHIN THE EASYSOFT ODBC-ORACLE DRIVER

Tracing in the Easysoft ODBC-Oracle Driver is platform-specific:

- On Windows:

  Update the **Registry** by running `regedit` and edit the key:

  `HKEY_LOCAL_MACHINE\SOFTWARE\ODBC\ODBC.INI\`*DSN-NAME*

  where *DSN-NAME* is the name of the Easysoft ODBC-Oracle Driver data source.

  Add a `LOG` string value and set it to the path and file name of the log file (e.g. `\temp\oracle.log`).

- On Unix:

  Add a `LOG` attribute to the DSN section of the `odbc.ini` file.

  e.g.

  ```
  [ORACLE]
  .
  .
  .
  LOG = /tmp/oracle.log
  ```

  The `LOG` value is the path and file name of the log file (e.g. `/tmp/oracle.log`).

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 84**) 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 85**.

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.

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