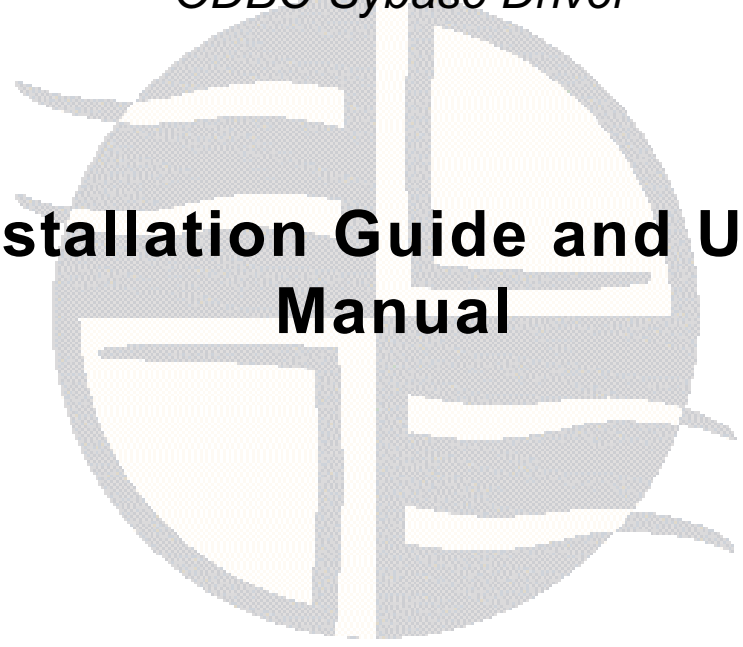
Easysoft Data Access

ODBC-Sybase Driver



Installation Guide and User Manual

Version 1.2.

This manual documents version 1.2 of the Easysoft ODBC-Sybase Driver.

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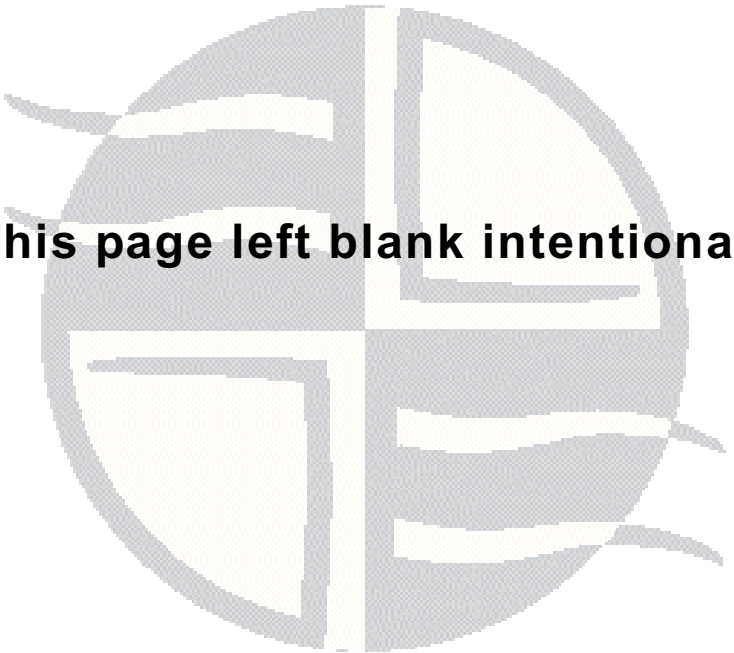

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PREFACE

About this manual

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

Chapter Guide

Intended Audience

The Unix-based sections require experience of using Unix shell commands. You need to be able to do basic tasks such as editing text files.

Displaying the Manual

This manual is available in the following formats:

- Portable Document Format (PDF), which can be displayed and printed by using the Adobe Reader, available free from Adobe at **http://www.adobe.com**.
- HTML.

Notational Conventions

A *note box* provides additional information that may further your understanding of a particular topic in this manual:

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

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

Linux	On Linux, you must log on as the `root` user to make many important changes.

A *caution box* provides 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!

Typographical Conventions

This manual uses the following typographical conventions:

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

  Click **Next** to continue.

- Commands to be typed are displayed in a `monotype` font, for example:

  At the command prompt, type `admin`.

- File listings and system names (such as file names, directories and database fields) are displayed in a `monotype` font.

Contents

Trademarks

Throughout this manual, *Windows* refers generically to Microsoft Windows 95, 98, 2000, NT, XP, ME or 2003 Server, which are trademarks of the Microsoft Corporation. The X Window system is specifically excluded from this and is referred to as *The X Window System* or just *X*.

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

Easysoft and Easysoft Data Access are trademarks of Easysoft Limited.

1 INTRODUCTION

Introducing the Easysoft ODBC-Sybase Driver

The Easysoft ODBC-Sybase Driver is an ODBC 3.5 driver for Sybase Adaptive Server Enterprise (ASE). It lets ODBC-enabled applications access Sybase ASE 12.5.x, 15 and 16 (including Sybase ASE Express Edition) from Linux and major Unix platforms.

Chapter Guide

Product Status

The Easysoft ODBC-Sybase Driver software is currently available on Unix and Linux platforms.

Software problems can be reported to **support@easysoft.com** by users who have either purchased support or registered at the Easysoft web site at **http://www.easysoft.com** and are evaluating Easysoft products.

Deployment

The Easysoft ODBC-Sybase Driver can be located either on the same server as the Sybase database or on a remote computer. When installed on remote clients, the Easysoft ODBC-Sybase Driver uses the Sybase Tabular Data Stream (**TDS**) protocol to connect to the Sybase database.

The Easysoft JDBC-ODBC Bridge may also be added to enable JDBC access from remote devices.

SCENARIO 1: LOCAL ACCESS TO A SYBASE DATABASE

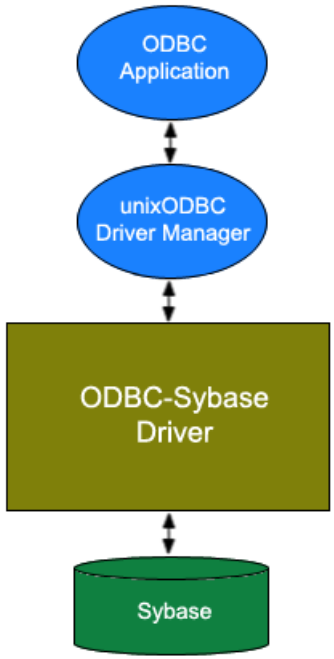


Figure 1: Local access to a Sybase database

SCENARIO 2: REMOTE ACCESS TO A SYBASE DATABASE

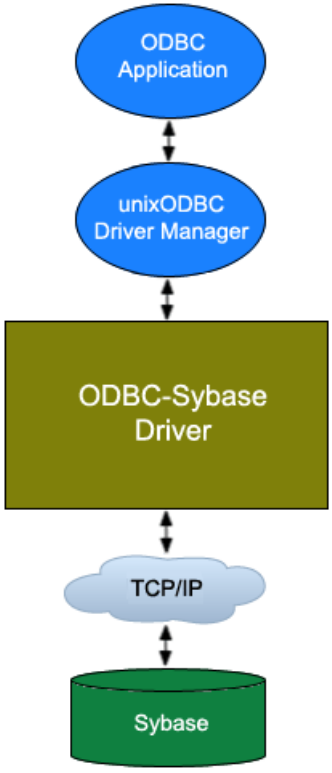


Figure 2: Remote access to a Sybase database

INSTALLATION

2

Installing the Easysoft ODBC-Sybase Driver

This chapter explains how to install, license and remove the Easysoft ODBC-Sybase Driver on supported Unix platforms.

The installation instructions assume you are, or able to consult with, a system administrator.

Chapter Guide

Obtaining the Easysoft ODBC-Sybase Driver

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

- The Easysoft web site is available 24 hours a day at **http://www.easysoft.com** and lets you download product releases and documentation.

  Choose **Download** from the Easysoft ODBC-Sybase Driver section of the web site and then choose the platform release that you require.

  If you have not already done so, you will need to register at the web site to download Easysoft software.

- The Easysoft FTP site is available 24 hours a day at **ftp://ftp.easysoft.com** and lets you download free patches, upgrades, documentation and beta releases of Easysoft products, as well as definitive releases.

  Change to the `pub/sybase` subdirectory and then choose the platform release that you require.

- You can order Easysoft software on CD. To do this, **contact us** by email, telephone or post.

What to Install

The name of the Easysoft ODBC-Sybase Driver distribution file varies from platform to platform. The file name format is:

- `odbc-sybase-`*`x.y.z-platform`*`.tar.gz`

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` depends on the operating system distribution you require. File names may have this format:

- `odbc-sybase-`*`x.y.z-platform-variation`*`.tar`

where *`platform-variation`* refers to alternative versions available for a single platform.

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

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

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

Caution!

As long as you stop all Easysoft software first (or software that uses the Easysoft drivers), it is safe to reinstall or upgrade the Easysoft ODBC-Sybase 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).

Installing the Easysoft ODBC-Sybase Driver

These instructions show how to install the Easysoft ODBC-Sybase Driver on Unix platforms. Please read this section carefully **before** installing the Easysoft ODBC-Sybase Driver.

BEFORE YOU INSTALL

Requirements

To install the Easysoft ODBC-Sybase Driver on Unix you need:

- The Bourne shell in `/bin/sh`. If your Bourne shell is not located there, you may need to edit the first line of the installation script.
- Various commonly used Unix commands such as:

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

  If you do not have any of these commands, they can usually be obtained from the **Free Software Foundation**. As the `tee` command does not work correctly on some systems, the distribution includes a `tee` replacement.

- Depending on the platform, you will need up to 10 MB of temporary space for the installation files and up to 10 MB of free disk space for the installed programs. If you also install the unixODBC Driver Manager, these numbers increase by approximately 1.5 MB.
- For Easysoft Licensing to work, you must do one of the following:
  - Install the Easysoft ODBC-Sybase Driver in `/usr/local/easysoft`.
  - Install the Easysoft ODBC-Sybase Driver elsewhere and symbolically link `/usr/local/easysoft` to wherever you chose to install the software.

    The installation will do this automatically for you so long as you run the installation as someone with permission to create `/usr/local/easysoft`.
  - Install the Easysoft ODBC-Sybase Driver elsewhere and set the `EASYSOFT_ROOT` environment variable.

    For more information about setting the `EASYSOFT_ROOT` environment variable, see **"Post installation," on page 38**.
- An ODBC Driver Manager. Easysoft ODBC-Sybase Driver distributions include the unixODBC Driver Manager.

- You do not have to be the `root` user to install, but you will need permission to create a directory in the chosen installation path. Also, if you are not the `root` user, it may not be possible for the installation to:

  1. Register the Easysoft ODBC-Sybase Driver with unixODBC.
  2. Create the example data source in the SYSTEM `odbc.ini` file.
  3. Update the dynamic linker entries (some platforms only).

  If you are not `root`, these tasks will have to be done manually later.

  Easysoft recommend you install all components as the `root` user.

What you can Install

This distribution contains:

- The Easysoft ODBC-Sybase Driver.
- The unixODBC Driver Manager.

You will need an ODBC Driver Manager to use the Easysoft ODBC-Sybase Driver from your applications. The distribution therefore contains the **unixODBC Driver Manager**. Most (if not all) Unix applications and interfaces support the unixODBC Driver Manager. For example, Perl DBD::ODBC, PHP, Python and so on.

You do not have to install the unixODBC Driver Manager included with this distribution. You can use an existing copy of unixODBC. For example, a version of unixODBC installed by another Easysoft product, a version obtained from your operating system vendor or one that you built yourself. However, as Easysoft ensure that the unixODBC distributed with the Easysoft ODBC-Sybase Driver has been tested with that driver, we recommend you use it.

If you choose to use an existing unixODBC Driver Manager, the installation script will attempt to locate it. The installation script looks for the Driver Manager in the standard places. If you have installed it in a non-standard location, the installation script will prompt you for the location. The installation primarily needs unixODBC's `odbcinst` command to install drivers and data sources.

Where to Install

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

At the start of the installation, you will be prompted for an installation path. All files are installed in a subdirectory of your specified path called `easysoft`. For example, if you accept the default location `/usr/local`, the product will be installed in `/usr/local/easysoft` and below.

If you choose a different installation path, the installation script will try to symbolically link `/usr/local/easysoft` to the `easysoft` subdirectory in your chosen location. This allows us to distribute binaries with built in dynamic linker run paths. If you are not `root` or the path `/usr/local/easysoft` already exists and is not a symbolic link, the installation will be unable to create the symbolic link. For information about how to correct this manually, see **"Post Installation Steps for non-root Installations," on page 38**.

Note that you cannot license Easysoft products until either of the following is true:

- `/usr/local/easysoft` exists either as a symbolic link to your chosen installation path or as the installation path itself.
- You have set `EASYSOFT_ROOT` to *`installation_path`*`/easysoft`.

Changes Made to Your System

This installation script installs files in subdirectories of the path requested at the start of the installation, Depending on what is installed, a few changes may be made to your system:

1. If you choose to install the Easysoft ODBC-Sybase Driver into unixODBC, unixODBC's `odbcinst` command will be run to add an entry to your `odbcinst.ini` file. You can locate this file with `odbcinst -j`. (`odbcinst` is in *`installation_path`*`/easysoft/unixODBC/bin`, if you are using the unixODBC included with this distribution.)

   The entry for the Easysoft ODBC-Sybase Driver will look similar to this:

   ```
   [SYBASE]

   Description     = Easysoft ODBC-Sybase Driver

   Driver          =
   /usr/local/easysoft/sybase/libessybase.so

   Setup           =
   /usr/local/easysoft/sybase/libessybasesetup.so

   FileUsage       = 1
   ```

   For information about removing this entry, see **"Uninstalling the Easysoft ODBC-Sybase Driver," on page 41**.

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

```
[SYBASE]
Driver              = SYBASE
Database            = my_database
User                = my_user
Password            = my_password
SERVER_HOST         = my_server_name_or_ip_address
SERVER_PORT         = 4100
```

   For information about removing this data source, see **"Uninstalling the Easysoft ODBC-Sybase Driver," on page 41**.

3. Dynamic Linker.

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

   - On Linux, this is usually the file `/etc/ld.so.conf`.
   - On FreeBSD this is usually the file `/etc/defaults/rc.conf`.

Reinstalling or Installing When You Already Have Other Easysoft Products Installed

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

You should ensure that nothing on your system is using Easysoft software before starting an installation. This is because on some platforms, files in use cannot be replaced. If a file cannot be updated, you will see a warning during the installation. All warnings are written to a file called `warnings` in the directory you unpacked the distribution into.

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

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

Gathering Information Required During the Installation

During the installation, you will be prompted for various pieces of information. Before installing, you need to find out whether you have unixODBC already installed and where it is installed. The installation script searches standard places like `/usr` and `/usr/local`. However, if you installed the Driver Manager in a non-standard place and you do not install the included unixODBC, you will need to know the location.

INSTALLATION

Unpacking the Distribution

The distribution for Unix platforms is a tar file. There are multiple copies of the same distribution with different levels of compression. You unpack the distribution in one of the following ways.

If the distribution file has been gzipped (`.gz`), use:

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

If the distribution file has been bzipped (`.bz2`), use:

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

If the distribution file has been compressed, (`.Z`), use:

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

You may have a distribution file which is not compressed at all (`.tar`). To extract the installation files from the tar file, use:

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

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

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

License to Use

The End-User License Agreement is contained in the file `license.txt`. Be sure to understand the terms of the agreement before continuing, as you will be required to accept the license terms at the start of the installation.

Answering Questions During the Installation

Throughout the installation, you will be asked to answer some questions. In each case, the default choice will be displayed in square brackets and you need only press Enter to accept the default. If there are alternative responses, these will be shown in round brackets; to choose one of these, type the response and press Enter.

For example:

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

The possible answers to this question are `y` or `n`. The default answer when you type nothing and press Enter is `n`.

Running the Installer

Before you run the installer, make sure you have read **"Installation," on page 28**. If you are considering running the installation as a non `root` user, we suggest you review this carefully as you will have to get a `root` user to manually complete some parts of the installation afterwards. Easysoft recommend installing as the `root` user. (If you are concerned about the changes that will be made to your system, see **"Changes Made to Your System," on page 25**.)

To start the installation, run:

```
./install
```

You will need to:

- Confirm your acceptance of the license agreement by typing "yes" or "no".

  For more information about the license agreement, see **"License to Use," on page 28**.

- Supply the location where the software is to be installed. Easysoft recommend accepting the default installation path.

  For more information, see **"Where to Install," on page 24**.

> **Note** If you are upgrading, you will need a new license from Easysoft.

Locating or Installing unixODBC

Easysoft strongly recommend you use the unixODBC Driver Manager because:

- The installation script is designed to work with unixODBC and can automatically add Easysoft ODBC-Sybase Driver and data sources during the installation.
- Most ODBC-aware applications and interfaces support unixODBC. The Easysoft ODBC-Sybase Driver and any data sources that you add during the installation will automatically be available to your applications and interfaces therefore.

- The unixODBC project is currently led by Easysoft developer Nick Gorham. This means that there is a great deal of experience at Easysoft of unixODBC in general and of supporting the Easysoft ODBC-Sybase Driver running under unixODBC. It also means that if you find a problem in unixODBC, it is much easier for us to facilitate a fix.
- The unixODBC package contains much more than a Driver Manager. The aim of the unixODBC project is to provide all the ODBC functionality available on Windows for Unix operating systems. The unixODBC package can be built with the QT libraries to provide a graphical user interface (GUI) for configuring data sources and drivers. It also contains the DataManager program, which lets you explore your ODBC data.

  The Easysoft ODBC-Sybase Driver contains the code and shared object that is used by unixODBC's ODBCConfig utility to add, delete and configure ODBC-Sybase Driver data sources.

The installation starts by searching for unixODBC. There are two possible outcomes here:

1. If the installation script finds unixODBC, the following message will be output:

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

2. If the installation script cannot find unixODBC in the standard places, you will be asked whether you have it installed.

If unixODBC is installed, you need to provide the unixODBC installation path. Usually, the path required is the directory above where `odbcinst` is installed. For example, if `odbcinst` is in `/opt/unixODBC/bin/odbcinst`, the required path is `/opt/unixODBC`.

If unixODBC is not installed, you should install the unixODBC included with this distribution.

If you already have unixODBC installed, you do not have to install the unixODBC included with the distribution, but you might consider doing so if your version is older than the one included.

The unixODBC in the Easysoft ODBC-Sybase Driver distribution is not built with the default options in unixODBC's configure line.

Option	Description
--prefix=/etc	This means the default SYSTEM `odbc.ini` file where SYSTEM data sources are located will be `/etc/odbc.ini`.
--enable-drivers=no	This means other ODBC drivers that come with unixODBC are not installed.
--enable-iconv=no	This means unixODBC will not look for a libiconv. Warnings about not finding an iconv library were confusing our customers.

Option	Description
--enable-stats=no	Disables unixODBC statistics, which use system semaphores to keep track of used handles. Many systems do not have sufficient semaphore resources to keep track of used handles. In addition, the statistics are only available in the GUI ODBC Administrator.
--enable-readline=no	This disables readline support in `isql`. We disabled this because it ties `isql` to the version of libreadline on the system we build on. We build on as old a version of the operating system as we can for forward compatibility. Many newer Linux systems no longer include the older readline libraries and so enabling readline support makes `isql` unusable on these systems.
--prefix=/usr/local/easysoft/unixODBC	This installs unixODBC into `/usr/local/easysoft/unixODBC`.

Figure 3: Easysoft unixODBC configure line options.

Installing the Easysoft ODBC-Sybase Driver

The Easysoft ODBC-Sybase Driver installation script:

- Installs the driver.
- Registers the driver with the unixODBC Driver Manager.

  If the Easysoft ODBC-Sybase Driver is already registered with unixODBC, a warning will be displayed that lists the drivers unixODBC knows about. If you are installing the Easysoft ODBC-Sybase Driver into a different directory than it was installed before, you will need to edit your `odbcinst.ini` file after the installation and correct the Driver and Setup paths. unixODBC's `odbcinst` will not update these paths if a driver is already registered.
- Creates an example Easysoft ODBC-Sybase Driver data source.

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

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

Licensing

The *`installation_path`*`/easysoft/license/licshell` program lets you obtain or list licenses.

Licenses are stored in the *`installation_path`*`/easysoft/license/licenses` file. After obtaining a license, you should make a backup copy of this file.

The installation script asks you if you want to request an Easysoft ODBC-Sybase Driver license:

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

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

If you answer yes, the installation runs the `licshell` script. The process of obtaining a license is best described in the **Licensing Guide**.

To obtain a license automatically, you will need to be connected to the Internet and allow outgoing connections to `license.easysoft.com` on port 8884. If you are not connected to the Internet or do not allow outgoing connections on port 8884, the License Client can create a license request file that you can mail or fax to Easysoft. You can also supply the details to us by telephone.

Start the License Client. The following menu is displayed:

```
[0] exit

[1] view existing license

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

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

After you have chosen the product to license (Easysoft ODBC-Sybase Driver), you need to supply:

- Your full name.
- Your company name.
- An email contact address. This **must** be the email address that you used when you registered on the Easysoft web site.
- Your telephone number (you need to specify this if you telephone us to request a license).
- Your fax number (you need to specify this if you fax the license request to us).
- A reference number. When applying for a trial license, just press Enter when prompted for a reference number. This field is used to enter a reference number that we will supply you for full (paid) licenses.

You will then be asked to specify how you want to obtain the license. The choices are:

```
[1] Automatically by contacting the Easysoft
License Daemon
```

This requires a connection to the Internet and the ability to support an outgoing TCP/IP connection to `license.easysoft.com` on port 8884.

```
[2] Write information to file so you can fax,
telephone it
```

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

```
[3] Cancel this operation
```

If you choose to obtain the license automatically, the License Client will start a TCP/IP connection to `license.easysoft.com` on port 8884 and send the details you supplied and your machine number. No other data is sent. The data sent is transmitted as plain text, so if you want to avoid the possibility of this information being intercepted by someone else on the Internet, you should choose `[2]` and telephone or fax the request to us. The License daemon will return the license key, print it to the screen and make it available to the installation script in the file `licenses.out`.

If you choose option `[2]`, the license request is written to the file `license_request.txt`. You should then exit the License Client by choosing option `[0]` and complete the installation. After you have mailed, faxed or telephoned the license request to us, we will return a license key. Add this to the end of the file *`installation_path`*`/easysoft/license/licenses`.

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

POST INSTALLATION

Supplied Documents and Examples

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

- The Easysoft ODBC-Sybase Driver documentation is installed in *installation_path*/easysoft/sybase/doc:
  - The Easysoft ODBC-Sybase Driver manual in PDF format.
  - The Easysoft ODBC-Sybase Driver EULA.

installation_path/easysoft/sybase/CHANGES lists all the changes in each version of the Easysoft ODBC-Sybase Driver.

There are also many resources at the **Easysoft web site**.

Post Installation Steps for non-root Installations

If you installed the Easysoft ODBC-Sybase Driver as a non-root user (not recommended), there may be some additional steps you will need to do manually:

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

   You can manually install the driver under unixODBC by adding an entry to the odbcinst.ini file. Run odbcinst -j to find out the location of the DRIVERS file then append the lines from the drv_template file to the odbcinst.ini file. (drv_template is in the directory where the distribution was untarred to)

2. No example data sources can be added into unixODBC if you do not have write permission to the SYSTEM odbc.ini file. Run odbcinst -j to find out the location of the SYSTEM DATA SOURCES file then add your data sources to this file.

3. On systems where the dynamic linker has a configuration file defining the locations where it looks for shared objects (Linux and FreeBSD), you will need to add:

   ```
   installation_path/easysoft/lib
   installation_path/easysoft/unixODBC/lib
   ```

   The latter entry is only required if you installed the unixODBC included with this distribution. Sometimes, after changing the dynamic linker configuration file, you need to run a program to update the dynamic linker cache. (For example, `/sbin/ldconfig` on Linux.)

4. If you did not install the Easysoft ODBC-Sybase Driver in the default location, you need to do one of the following:

   - Link `/usr/local/easysoft` to the `easysoft` directory in your chosen installation path.

     For example, if you installed in `/home/user`, the installation will create `/home/user/easysoft` and you need to symbolically link `/usr/local/easysoft` to `/home/user/easysoft`:

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

   - Set and export the `EASYSOFT_ROOT` environment variable to *`installation_path`*`/easysoft`.

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

The environment variable depends on the dynamic linker. Refer to your `ld` or `ld.so` man page. It is usually:

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

Uninstalling the Easysoft ODBC-Sybase Driver

There is no automated way to remove the Easysoft ODBC-Sybase Driver in this release. However, removal is quite simple. To do this, follow these instructions.

To uninstall the Easysoft ODBC-Sybase Driver

1. Change directory to *`installation_path`*`/easysoft` and delete the `sybase` directory. *`installation_path`* is the Easysoft ODBC-Sybase Driver installation directory, by default `/usr/local`.
2. If you had to add this path to the dynamic linker search paths (for example, `/etc/ld.so.conf` on Linux), remove it. You may have to run a linker command such as `/sbin/ldconfig` to get the dynamic linker to reread its configuration file. Usually, this step can only be done by the `root` user.
3. If you were using unixODBC, the Easysoft ODBC-Sybase Driver entry needs to be removed from the `odbcinst.ini` file. To check whether the Easysoft ODBC-Sybase Driver is configured under unixODBC, use `odbcinst -q -d`. If the command output contains `[SYBASE]`, uninstall the driver from unixODBC by using:

   ```
   odbcinst -u -d -n SYBASE
   ```

   If a reduced usage count message is displayed, repeat this command until `odbcinst` reports that the driver has been removed.

4. If you created any Easysoft ODBC-Sybase Driver data sources under unixODBC, you may want to delete these. To do this, first use `odbcinst -j` to locate USER and SYSTEM `odbc.ini` files. Then check those files for data sources that have the driver attribute set to `SYBASE`.
5. Remove `sybase_install.info` from the `/usr/local/easysoft` directory.

CONFIGURATION

3

Configuring the Easysoft ODBC-Sybase Driver

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

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

For Easysoft ODBC-Sybase Driver installation instructions, see **"Installation," on page 17**.

Chapter Guide

Configuring the Easysoft ODBC-Sybase Driver

This section describes how to configure the Easysoft ODBC-Sybase Driver to connect to a Sybase database by using a data source or a a DSN-less connection string. The section assumes you are, or are able to consult with, a system administrator.

Setting Up Data Sources

There are two ways to set up a data source to your Sybase data:

- Create a SYSTEM data source, which is available to anyone who logs on to this Unix machine.

– OR –

- Create a USER data source, which is only available to the user who is currently logged on to this Unix machine.

With the unixODBC included with the Easysoft ODBC-Sybase Driver distribution, a default data source named `SYBASE` is created and added to the SYSTEM `odbc.ini` file on the client computer when the Easysoft ODBC-Sybase Driver is installed.

By default, the Easysoft ODBC-Sybase Driver installation creates a SYSTEM data source named `[SYBASE]`. If you are using the unixODBC included in the Easysoft ODBC-Sybase Driver distribution, the SYSTEM `odbc.ini` file is in `/etc`.

If you built unixODBC yourself, or installed it from some other source, SYSTEM data sources are stored in the path specified with the configure option `--sysconfdir=`*`directory`*. If `sysconfdir` was not specified when unixODBC was configured and built, it defaults to `/usr/local/etc`.

If you accepted the default choices when installing the Easysoft ODBC-Sybase Driver, USER data sources must be created and edited in `$HOME/.odbc.ini`.

Notes

To display the directory where unixODBC stores SYSTEM and USER data sources, type `odbcinst -j`.

By default, you must be logged in as `root` to edit a SYSTEM data source defined in `/etc/odbc.ini`.

You can either edit the sample data source or create new 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.

> **Note** Attribute names in `odbc.ini` are not case sensitive.

The `Driver` attribute identifies the ODBC driver in the `odbcinst.ini` file to use for a data source. When the Easysoft ODBC-Sybase Driver is installed into unixODBC, it places a `SYBASE` entry into the `odbcinst.ini` file. You should always have `Driver = SYBASE` in your Easysoft ODBC-Sybase Driver data sources therefore.

To configure a Sybase data source, in your `odbc.ini` file, you need to specify:

- The physical database name (`Database`).
- The target Sybase database user name (`User`).
- The target Sybase database password (`Password`).
- The host name or IP address of the computer on which the Sybase server is running (`SERVER_HOST`).
- The port on which the Sybase server is listening, which is `4100` by default (`SERVER_PORT`). For Sybase ASE Express Edition, the default port is `5000`.

For example:

```
[SYBASE]
Driver              = SYBASE
Database            = my_database
User                = my_user
Password            = my_password
SERVER_HOST         = my_server_name_or_ip_address
SERVER_PORT         = 4100 # For Sybase ASE Express use 5000.
```

Optional Attribute Fields

The following optional attributes may also be set in the `odbc.ini` file..

Attribute	Description
Description	A single line of descriptive text that may be retrieved by some applications to describe the data source.
METADATA_ID	When ON (set to 1), the default value of the Connection Attribute `SQL_ATTR_METADATA_ID` is set to `SQL_TRUE`. Note that `METADATA_ID` is added to `odbc.ini` automatically with a default value of 0.
METADATA_DONT_CHANGE_CASE	When ON (set to 1), the case of the parameter values passed to metadata calls will not change.

Attribute	Description
TEXTSIZE	Sets the maximum size, in bytes, of text or image data returned from the server. The default size is 32000. If data is larger than this value, the data will be truncated, without any indication that it has been truncated.
QUOTED_IDENTIFIERS	This attribute switches the Sybase database `quoted_identifier` setting to `on`. This enables support for quoted identifiers and also changes the appropriate `SQLGetInfo` values returned.

Figure 4: Optional Easysoft ODBC-Sybase Driver data source settings.

ENVIRONMENT

The Easysoft ODBC-Sybase Driver must be able to find the following shared objects, which are installed during the Easysoft ODBC-Sybase Driver installation:

- `libodbcinst.so`

  By default, this is located in `/usr/local/easysoft/unixODBC/lib/libodbcinst.so`.

- `libeslicshr.so`

  By default, this is located in `/usr/local/easysoft/lib/libeslicshr.so`.

- `libessupp.so`

  By default, this is located in `/usr/local/easysoft/lib/libessupp.so`.

You may need to set 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`, `libeslicshr.so` and `libessupp.so` are located.

> **Note** The shared object file extension (`.so`) may vary depending on the operating system (`.so`, `.a` or `.sl`).

ESTABLISHING A TEST CONNECTION

The `isql` query tool lets you test your Easysoft ODBC-Sybase Driver data sources.

To test the Easysoft ODBC-Sybase Driver connection

1. Change directory into `/usr/local/easysoft/unixODBC/bin`.
2. Type `./isql -v` *`data_source`*, where *data_source* is the name of the target data source.
3. At the prompt, type an SQL query. For example:

   ```
   SQL> select * from systypes;
   ```

   – OR –

   Type `help` to return a list of tables:

   ```
   SQL> help
   ```

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(..."SERVER_HOST=server;
                    SERVER_PORT=nnnn;Driver=sybase;"...)
```

where *server* is the name of the host computer, *nnnn* is the port number with which to connect to the server and `sybase` is the driver name.

Further Easysoft ODBC-Sybase Driver attribute settings, as described in **"Setting Up Data Sources," on page 45**, can also be added to the connection string using the same "`PARAMETER=value;`" format. For example:

```
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.

TECHNICAL REFERENCE

A

Technical Reference for the Easysoft ODBC-Sybase Driver

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

Appendix Guide

Restrictions

The Easysoft ODBC-Sybase Driver lets you access Sybase ASE database versions 12.5.x, 15 and 16.

Supported API Calls

All the ODBC 3.5 calls are supported except for the following:

- `SQLBulkOperations`
- `SQLDescribeParam`
- `SQLCopyDesc`
- `SQLBrowseConnect`

Threading

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

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-Sybase Driver.

WITHIN THE DRIVER MANAGER BY AN APPLICATION

An application can turn tracing on in the Driver Manager by using 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

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
```

For example:

```
[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-SYBASE DRIVER

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

For example:

```
[SYBASE]

....

LOG = /tmp/sybase.log
```

The `LOG` value is the path and file name of the log file, for example, `/tmp/sybase.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 57**) 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 58**.

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. On 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 that 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.

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

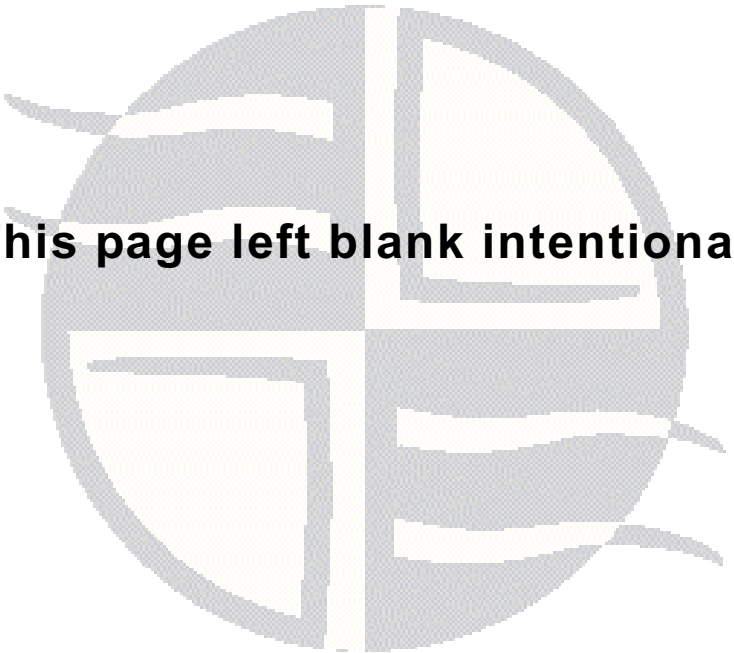
A data set in a relational database, composed of rows and columns.

TCP/IP

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

TDS

Tabular Data Stream -- a protocol used by Sybase that insulates clients and server machines from underlying native protocol stacks by creating a common interface between higher-layer SQL applications and lower-layer, connection-oriented transport protocols (such as TCP/IP).



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