



SQL Anywhere Studio[®] Read Me First for Linux and UNIX

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Contents

About This Manual	v
1 Welcome to SQL Anywhere Studio for Linux and UNIX	1
Supplied software	2
SQL Anywhere Studio for UNIX	5
Deployment Option platforms	6
2 System Requirements and Installation	9
Operating system requirements	10
Installing SQL Anywhere Studio	13
SQL Anywhere management tools	15
Getting started with Adaptive Server Anywhere	16
Index	19



About This Manual

Subject	This booklet introduces SQL Anywhere Studio for Linux and UNIX, and the UNIX Deployment Option. It describes how to install the software. It also outlines the features of SQL Anywhere Studio that are supported on Linux and UNIX.
Audience	This manual is for all users of SQL Anywhere Studio for Linux and UNIX.



CHAPTER 1

Welcome to SQL Anywhere Studio for Linux and UNIX

About this chapter

This chapter introduces SQL Anywhere Studio 9 for Linux and UNIX. It is a supplement to the discussion in the main SQL Anywhere Studio documentation.

Throughout this document, the UNIX refers to all UNIX platforms, including Linux.

Contents

Topic:	page
Supplied software	2
SQL Anywhere Studio for UNIX	5
Deployment Option platforms	6

Supplied software

Your SQL Anywhere Studio package contains the following CDs:

- ◆ **Server CD** The Server CD contains software to be installed on your UNIX server.
- ◆ **Windows Client CD** The Client CD contains the Windows 95/98/ME and Windows NT/2000/XP applications for working with Adaptive Server Anywhere databases.

The Server CD

The UNIX Server CD contains the following software:

- ◆ **Adaptive Server Anywhere** The database server and command line utilities to manage it.
 For information about differences between SQL Anywhere for UNIX and other platforms, see [“SQL Anywhere Studio for UNIX” on page 5](#).
- ◆ **MobiLink synchronization technology (Solaris SPARC, Linux, HP-UX, and AIX only)** Enables Adaptive Server Anywhere databases and UltraLite applications to synchronize with consolidated databases.
- ◆ **Transport-layer security (Solaris SPARC, Linux, HP-UX, and AIX only)** Enables server authentication and allows encryption of communication channels using Certicom encryption technology on Solaris SPARC, Linux x86, HP PA-RISC, and AIX platforms. Transport-layer security requires a separate license.

In addition, SQL Anywhere Studio for the Solaris SPARC or Linux x86 platforms contain the following components:

- ◆ **Sybase Central** The cross-platform database management tool.
- ◆ **Interactive SQL** An application for sending SQL statements to the database and displaying their result. It allows you to query and alter data in a database, as well as modify its structure.
- ◆ **SQL Remote** Enables two-way replication.

For those who have purchased SQL Anywhere Studio for the Solaris SPARC or Linux x86 platforms with the required additional license, the following components are also included. These components are not available on Deployment Option platforms.

- ◆ **SQL Remote for Adaptive Server Enterprise** A two-way replication system for those who wish to use Adaptive Server Enterprise as a consolidated database.

- ◆ **Replication Agent** Enables Adaptive Server Anywhere databases to act as primary sites in Sybase Replication Server installations.

The Windows Client CD

The Microsoft Windows Client CD contains the following software:

- ◆ **InfoMaker** A reporting tool for Windows 95/98/Me and Windows NT/2000/XP.
- ◆ **PowerDesigner Physical Architect** A database design tool for Windows 95/98/Me and Windows NT/2000/XP.
- ◆ **Sybase Central** A database management tool for Windows 95/98/Me and Windows NT/2000/XP.
- ◆ **Interactive SQL** An application for sending SQL statements to the database and displaying their result. It allows you to query and alter data in a database, as well as modify its structure.
- ◆ **Client access drivers** Client access drivers including ODBC, JDBC, Embedded SQL, and ADO.NET.

Product documentation

Documentation

The complete SQL Anywhere Studio documentation is provided on the Server CD in HTML and in Portable Document Format (PDF). The title page is located at `/cdrom/help/en/html/contents.htm`, where *cdrom* is the mount point of the SQL Anywhere CD-ROM.

SQL Anywhere Studio Setup installs the documentation into the *docs/en* subdirectory of your SQL Anywhere installation. When the documentation is installed, the title page is located at `docs/en/html/contents.htm`.

You need a PDF reader to view the PDF documents. The Adobe Reader is available at www.adobe.com.

On some platforms, SQL Anywhere Studio documentation is available in a choice of languages. Use the CD that contains the language of your choice. On the CD or installed with the software, the directory name containing the documentation changes from *en* to the two-letter language code for the chosen language. These codes are *de* for German, *ja* for Japanese, and *zh* for Simplified Chinese.

Online resources

Setup installs an HTML page entitled iAnywhere Online Resources as `support/en/iAnywhere.html` in your SQL Anywhere installation.

iAnywhere Online Resources describes and provides links to the resources that iAnywhere Solutions offers over the Internet. These resources include

the iAnywhere Solutions Developer Community, product information, iAnywhere Solutions newsgroups, Professional Services, and Technical Support.

Documentation conventions

The SQL Anywhere manuals generally adopt PC conventions when describing operating-system dependent tasks and features.

- ◆ **Directories and path names** The documentation typically lists directory paths using PC conventions, including colons for drives and backslashes as a directory separator. For example,

```
c:\Program Files\Sybase
```

On UNIX you should use forward slashes instead. For example,

```
/opt/sybase
```

- ◆ **Executable files** The documentation occasionally lists executable files using the Windows 95/98/ME or Windows NT/2000/XP name. These typically have the suffix `.exe`. The UNIX executable file names have no suffix. For example, on Windows, the network database server is `dbsrv9.exe`. On UNIX, it is `dbsrv9`.

- ◆ **Environment variables** The documentation occasionally refers to setting environment variables on Windows. UNIX environment variables are stored in shell and login startup files, such as `.cshrc` or `.tcshrc`.

☞ For information about setting environment variables on UNIX, see [“Setting environment variables for terminal sessions” on page 14](#).

SQL Anywhere Studio for UNIX

Adaptive Server Anywhere

Adaptive Server Anywhere for UNIX differs from Adaptive Server Anywhere for Microsoft Windows operating systems in the following ways:

Only Solaris SPARC and Linux x86 platforms support remote data access (proxy tables). Solaris SPARC and Linux x86 require ODBC drivers for the database servers you want to access.

The following are UNIX-specific database options:

- ◆ **-s id** Sets the ID to be used in messages to the syslog facility. The default is *user*. Other available values are *none*, *daemon*, and *local0*, *local1*, ..., *local7*.
- ◆ **-ud** Causes the process to run as a daemon. This option allows the server to continue running after the current user logs out.

Do not use '&' to run the server in the background

To run the database server disconnected from other processes, start the database server as a daemon. The database server will not run properly if you use the ampersand sign to force it to run it in the background.

- ◆ **-ut min** Causes the server to touch temporary files at specific intervals.

Both threaded and non-threaded client libraries are provided. It is important that your application use the correct library otherwise your application may not work properly (incorrect results, hang or crash). Note that the threaded libraries all have names ending in *_r*.

If your application is using the ODBC interface, you have the option of using the new *libdbodbc9* library shipped with SQL Anywhere 9. Your ODBC application need only reference (for example, link to or load) the *libdbodbc9* library and this library automatically loads the appropriate non-threaded (*libdbodbc9_n*) or threaded (*libdbodbc9_r*) ODBC library based on the current application's context. You may still choose to reference either of these libraries directly, but if you do you must ensure that you are using the correct one.

Deployment Option platforms

The complete version of SQL Anywhere Studio for Linux and UNIX offers a full range of functionality. However, only a subset of these features is available on UNIX Deployment Option platforms. Deployment Option platforms include HP-UX, Compaq Tru 64, AIX, Linux x86-64, Linux Itanium, Solaris x64, and Solaris x86.

This section describes which features are included with the Deployment Option; it also describes how the Deployment Option differs from the complete version for Solaris SPARC or Linux x86 platforms.

☞ For more information, see the platform support matrix on the web at www.ianywhere.com/products/supported_platforms.html.

Programming interfaces

The following client programming interfaces are available:

- ◆ Embedded SQL programming interface (libdblib9 and libdblib9_r)
- ◆ ODBC programming interface
- ◆ The database tools programming interface (libdbtools9 and libdbtools9_r, together with tool support libraries)
- ◆ Open Client programming interface (ctlib)

The Sybase Open Client library is a separate product and is not included in this package.

- ◆ JDBC programming interface (jConnect JDBC driver, iAnywhere JDBC driver)

All appropriate support files for these interfaces (headers, language resources, and so on) are provided, with the exception of the Open Client programming interface.

Management tools

A set of command line database management tools available for use on deployment platforms is located in the *bin* directory. A description of the tools located in this directory can be found in the Database Administration Utilities chapter of the Database Administration Guide.

Deployment Platforms offer a subset of tools

Note that the Database Administration Utilities chapter of the Database Administration Guide contains a complete list of tools available in the full Development Edition. Only the tools listed in the *bin* directory are available for deployment purposes.

Other differences

The following components of SQL Anywhere Studio for Linux and UNIX are not included in the UNIX Deployment Option.

- ◆ SQL Remote replication.
- ◆ Remote data access.
- ◆ Sybase Central and some other administration tools (dbisqlc is included).
- ◆ MobiLink is not available on DEC, HP-UX Itanium, 64-bit Linux platforms, Solaris x64, and Solaris x86.

CHAPTER 2

System Requirements and Installation

About this chapter

This chapter describes system requirements and how to install SQL Anywhere Studio.

Your license agreement defines your rights and obligations with respect to the software. You should read the license agreement before installing any software.

Contents

Topic:	page
Operating system requirements	10
Installing SQL Anywhere Studio	13
SQL Anywhere management tools	15
Getting started with Adaptive Server Anywhere	16

Operating system requirements

☞ For information and updates on platform support, see “SQL Anywhere Studio Supported Platforms and Support Status” at http://www.ianywhere.com/products/supported_platforms.html.

HP-UX Itanium & Linux
Itanium

Note: iAnywhere JDBC driver and MobiLink ODBC drivers
Requirements for the MobiLink ODBC drivers and the iAnywhere JDBC driver are separate.

Shared memory connections between 32-bit and 64-bit software

64-bit servers and clients available prior to release 9.0.2 can not necessarily use shared memory connections to communicate with version 9.0.2 clients and servers.

When using a combination of client and server for which shared memory connections are not supported, use a TCP/IP connection instead. TCP/IP connections are supported on all platforms.

In the tables, “old” refers to all versions of the client or server prior to version 9.0.2.

- ◆ **Linux Itanium and DEC** Shared memory connections between old and new 64-bit software are fully supported on these platforms.
- ◆ **HP-UX Itanium** Starting with 9.0.2 build number 3207, 32-bit Itanium client software is provided. For compatibility between the 64-bit client and the new 32-bit client, shared memory regions are mapped in 32-bit, as opposed to 64-bit, mode.

This means that using shared memory connections, you cannot connect a client prior to build number 3207 to a server running build 3207 or later, and you cannot connect a client using build 3207 or later to a server running a build prior to build number 3207.

Note
Because of this change, it is strongly recommended that you update both the client and the server when applying EBF build 3207.

- ◆ **Linux x86-64** The supported combinations are described in the following table.

	Old 32-bit (x86) servers	9.0.2 32-bit (x86) servers	9.0.2 64-bit (x86-64) servers
Old 32-bit (x86) clients	yes	yes	no
9.0.2 32-bit (x86) clients	yes	yes	yes
9.0.2 64-bit (x86-64) clients	no	yes	yes

- ◆ **HP-UX PA RISC, Solaris SPARC, and AIX PPC** The supported combinations are described in the following table.

	Old 32-bit servers	9.0.2 32-bit servers
Old 32-bit clients	yes	yes
9.0.2 32-bit clients	yes	yes
9.0.2 64-bit clients	no	yes

MobiLink supported platforms

☞ For additional information and updates on platform support, see “SQL Anywhere Studio Supported Platforms and Support Status” at http://www.ianywhere.com/products/supported_platforms.html.

On AIX, only MobiLink synchronization servers are supported. MobiLink clients must be run on other platforms.

The consolidated databases to which the MobiLink synchronization server can connect are determined by the operating system on which the MobiLink synchronization server is running. The table below lists the supported consolidated databases when the MobiLink synchronization server is running on each UNIX platform.

MobiLink operating system	Consolidated databases
Solaris 7.0, 8.0, 9.0, and 10.0 (SPARC)	Adaptive Server Anywhere, Sybase Adaptive Server Enterprise, Oracle, DB2 UDB
RedHat, SuSE, and Caldera	Adaptive Server Anywhere, Sybase Adaptive Server Enterprise, Oracle, DB2 UDB
TurboLinux and Mandrake	Adaptive Server Anywhere
AIX	Adaptive Server Anywhere, Sybase Adaptive Server Enterprise, Oracle, DB2 UDB

MobiLink synchronization servers running on UNIX platforms cannot connect to Microsoft SQL Server consolidated databases.

☞ For additional information and updates, see “SQL Anywhere Studio Supported Platforms and Support Status” at http://www.iAnywhere.com/products/supported_platforms.html.

iAnywhere JDBC driver supported platforms

The iAnywhere JDBC driver is available on all supported platforms. All platforms require JRE 1.4 or higher.

☞ For additional information and updates, see “SQL Anywhere Studio Supported Platforms and Support Status” at http://www.iAnywhere.com/products/supported_platforms.html.

Installing SQL Anywhere Studio

If you have a pre-release version of SQL Anywhere Studio installed on your system, remove it before installing the current release.

❖ To install SQL Anywhere Studio

1. Log on as a user with administrative privileges.
2. Place the CD-ROM into the CD-ROM drive.
3. Mount the CD-ROM drive, unless the system mounts it automatically.
On Linux, the mount point is frequently `/mnt/cdrom`. In this case, enter the following command.

```
mount /mnt/cdrom
```

4. In a shell, change to the CD-ROM directory.
If the CD-ROM directory is `/mnt/cdrom`, use the following command.

```
cd /mnt/cdrom
```

5. Start the setup script by entering the following command:

```
./setup
```

Note

For Linux distributions on x86-architecture chips, if you are running XWindows on an English computer and using the ISO 8859-1 character set, the graphical setup program starts; if not, the command line version starts.

Optionally, you can use the `-nogui` option to force setup to run in the command line mode.

```
./setup -nogui
```

For a complete list of the available setup options, enter the following command.

```
./setup -h
```

6. Follow the instructions provided by the setup program.
7. Each user who uses the software must set the necessary Adaptive Server Anywhere environment variables. These depend on your particular operating system, and are discussed in [“Setting environment variables for terminal sessions”](#) on page 14.

Setting environment variables for terminal sessions

Once SQL Anywhere Studio is installed, each user must set some environment variables in order for the system to locate SQL Anywhere applications. SQL Anywhere Setup creates two files, *asa_config.sh* and *asa_config.csh*, in the directory */opt/sybase/SYBSsa9/bin*.

As the names imply, one file is designed to work under Bourne shell (*sh*) and its derivatives (such as *ksh* or *bash*). The other file is designed to work under C-shell (*csh*) and its derivatives (such as *tcsh*).

Each file sets all needed user environment variables. Each user should source one of these files.

To source a file means to execute commands contained in a text file in the current instance of the shell. This is accomplished using a command built into the shell.

Under Bourne shell and its derivatives, the name of this command is “.” (a single period). For example, if SQL Anywhere is installed in the directory */opt/sybase/*, use the following statement to source *asa_config.sh*.

```
. /opt/sybase/SYBSsa9/bin/asa_config.sh
```

Under C-shell and its derivatives, the command is “source”. For example, if SQL Anywhere is installed in the directory */opt/sybase/*, use the following statement to source *asa_config.csh*.

```
source /opt/sybase/SYBSsa9/bin/asa_config.csh
```

Some statements are commented out in each of these batch files. The system administrator may want to edit these files and uncomment sections, depending on the configuration of their system.

SQL Anywhere management tools

SQL Anywhere management tools include Sybase Central, Interactive SQL and the Database Console. These management tools are designed for JRE version 1.4.2.

JRE version 1.4.2 is required to run the Java-based database management tools supplied with SQL Anywhere Studio. The Sybase SQL Anywhere Studio setup script automatically installs this JRE on all Solaris SPARC and Linux platforms. Patches may be downloaded from <http://java.sun.com/j2se/1.4.2/download.html>.

The management tools are not available on the Deployment Option platforms.

Starting the SQL Anywhere management tools

In a terminal session, you can use the following executables to start these tools:

- ◆ Use the *scjview* program to start Sybase Central.
- ◆ Use the *dbisql* program to start Interactive SQL.
- ◆ Use the *dbconsole* program to start the Adaptive Server Anywhere Console utility.
- ◆ Use the *dbmlmon* program to start the MobiLink Monitor.

Getting started with Adaptive Server Anywhere

This section describes how to connect to the sample database from the Interactive SQL system administration and browsing utility, and how to execute a query.

❖ To get started with Adaptive Server Anywhere

1. In a terminal window, change to a writable folder. Copy the sample database file into the folder using the following command:

```
cp parent/SYBSsa9/asademo.db .
```

where *parent* is the installation root folder.

2. Start the database engine executable running on the database file using the following command:

```
dbeng9 asademo.db
```

3. In another terminal window, run the Interactive SQL system administration utility by entering the following command:

```
dbisql
```

If you have not installed the JRE or if you are using the Deployment Option, you can run the character-based version of Interactive SQL using the following command:

```
dbisqlc
```

4. A connection dialog appears. Enter **DBA** as the user ID, **SQL** as the password, and **asademo** as the database name. Leave the other fields blank. Press Enter to connect to the database.
5. Your window is now split into sub-windows. Enter the following query in the Command window:

```
SELECT * FROM employee
```

Press F5 or F9 to execute the statement.

If you are running dbisqlc and you want to emulate the F keys, press Ctrl+F, and then press the number 9 to execute the statement.

The Data window displays the result set of the query.

- ◆ If you are running a remote terminal session on Linux or Solaris and do not have access to the graphical user interface, you can use the following batch command to view result sets:

```
dbisql -c "uid=dba;pwd=sql" -nogui "SELECT * from EMPLOYEE"
```

Notes

- ◆ You can run the database server as a daemon. Do so using the `-ud` option. For example,

```
dbeng9 asademo.db -ud
```

To stop a database server running in this fashion, use the `dbstop` utility:

```
dbstop asademo
```

Do not use '&' to run the server in the background

To run Adaptive Server Anywhere disconnected from a particular terminal or session, use the `-ud` option, which causes the database server to run as a daemon. The database server will not run properly if you use the ampersand character to run it in the background.

Index

A

- Adaptive Server Anywhere Console utility
 - starting 15
- AIX
 - supported deployment platforms 10
 - supported iAnywhere JDBC driver platforms 12

C

- CD contents 2
- Client CD
 - contents 3
- connecting
 - Interactive SQL 16
- contents of the CD 2

D

- DBConsole
 - starting 15
- Deployment option
 - differences 7
- Deployment Option platforms
 - supplied software 6
- differences from the Windows version 5
- documentation
 - choice of languages 3
 - directories and path names 4
 - environment variables and registry entries 4
 - executable files 4
 - online 3
 - online resources 3

E

- environment variables
 - setting 14

H

- HP-UX
 - supported deployment platforms 10
 - supported iAnywhere JDBC driver platforms 12

I

- iAnywhere JDBC driver
 - supported platforms 12
- installation
 - SQL Anywhere Studio 13
 - uninstalling older versions 13
- installing
 - Java Runtime Environment 15
- Interactive SQL
 - starting 15
- Itanium
 - shared memory connections 10
 - supported deployment platforms 10
 - supported iAnywhere JDBC driver platforms 12
 - supported MobiLink platforms 11

J

- Java Runtime Environment
 - installing 15

L

- Linux
 - supported deployment platforms 10
 - supported iAnywhere JDBC driver platforms 12
 - supported MobiLink platforms 11
 - supported platforms 10
- Linux 64-bit platforms
 - shared memory connections 10

M

- Mac OS X
 - differences 5
- MobiLink Monitor
 - starting 15

O

- online documentation 3
- operating systems supported
 - Adaptive Server Anywhere Deployment Option 10
 - iAnywhere JDBC driver 12

MobiLink	11
SQL Anywhere	10

R

remote data access	
supported on Solaris SPARC and Linux x86	5

S

Server CD	
contents	2
setting environment variables	14
shared memory connections	
on 64-bit UNIX platforms	10
software	2
Solaris	
supported iAnywhere JDBC driver platforms	12
supported MobiLink platforms	11
supported platforms	10
SQL Anywhere Studio	
installing	13
supplied software	
Deployment Option platforms	6
Sybase Central	
installing the JRE	15
starting	15
system requirements	
Adaptive Server Anywhere Deployment Option	10
iAnywhere JDBC driver	12
MobiLink	11
SQL Anywhere	10

T

tools	
starting	15
Tru64 UNIX	
supported deployment platforms	10
supported iAnywhere JDBC driver platforms	12

U

uninstalling older versions	13
UNIX	
and Microsoft SQL Server	12
differences	5
UNIX 64-bit platforms	
shared memory connections	10

V

variables	
setting	14
versions supported	
Adaptive Server Anywhere Deployment Option	10
iAnywhere JDBC driver	12
MobiLink	11
SQL Anywhere	10

X

x86-64	
shared memory connections	10
supported MobiLink platforms	11