

Installation Guide

Software Developer's Kit

15.5

[Mac OS X]

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About This Book

Audience

This book is for system administrators or the persons responsible for installing the Software Developer's Kit (SDK) for Mac OS X on Intel.

How to use this book

This book contains these chapters:

- Chapter 1, "Before You Begin," contains preinstallation information and tasks.
- Chapter 2, "Installing the SDK," describes how to install the SDK.
- Chapter 3, "Post-Installation Tasks," provides information about the tasks you must perform after installing the component software for the SDK.

Related documents

You can see these books for more information:

- The Software Developer's Kit Release Bulletin for Mac OS X contains important last-minute information about Open ClientTM and SDK.
- The jConnect for JDBC Release Bulletin versions 6.0.5 contains important last-minute information about jConnectTM for JDBCTM.
- The *Open Client Configuration Guide for Mac OS X* contains information about configuring your system to run Open Client products on Mac OS X 10.5 or later on Intel, 32-bit.
- The *Open Client Client-Library/C Reference Manual* contains reference information for Open Client Client-Library.
- The Open Client Client-Library/C Programmers Guide contains information about how to design and implement Client-Library applications.
- The Open Client Common Libraries Reference Manual contains reference information for CS-Library, a collection of utility routines that are useful in both Client-Library and Server-Library applications.
- The *Open Client Programmers Supplement for Mac OS X* contains information for programmers using Open Client products. This document includes information about:
 - Compiling and linking an application

- Sample programs that are included with Open Client products
- Routines that have platform-specific behaviors
- The Adaptive Server Enterprise ODBC Driver by Sybase Users Guide for Windows and Linux, provides information on how to access data from Adaptive Server® on Windows and Linux platforms, using the Open Database Connectivity (ODBC) Driver.
- The *jConnect for JDBC Programmers Reference* contains information for programmers using jConnect.

Other sources of information

Use the Sybase® Getting Started CD, the SyBooksTM CD, and the Sybase Product Manuals Web site to learn more about your product:

- The Getting Started CD contains release bulletins and installation guides in PDF format, and may also contain other documents or updated information not included on the SyBooks CD. It is included with your software. To read or print documents on the Getting Started CD, you need Adobe Acrobat Reader, which you can download at no charge from the Adobe Web site using a link provided on the CD.
- The SyBooks CD contains product manuals and is included with your software. The Eclipse-based SyBooks browser allows you to access the manuals in an easy-to-use, HTML-based format.
 - Some documentation may be provided in PDF format, which you can access through the PDF directory on the SyBooks CD. To read or print the PDF files, you need Adobe Acrobat Reader.
 - Refer to the SyBooks *Installation Guide* on the Getting Started CD, or the *README.txt* file on the SyBooks CD for instructions on installing and starting SyBooks.
- The Sybase Product Manuals Web site is an online version of the SyBooks CD that you can access using a standard Web browser. In addition to product manuals, you will find links to EBFs/Maintenance, Technical Documents, Case Management, Solved Cases, newsgroups, and the Sybase Developer Network.

To access the Sybase Product Manuals Web site, go to Product Manuals at http://www.sybase.com/support/manuals/.

Sybase certifications on the Web

Technical documentation at the Sybase Web site is updated frequently.

❖ Finding the latest information on product certifications

- 1 Point your Web browser to Technical Documents at http://www.sybase.com/support/techdocs/.
- 2 Click Partner Certification Report.
- 3 In the Partner Certification Report filter select a product, platform, and timeframe and then click Go.
- 4 Click a Partner Certification Report title to display the report.

Finding the latest information on component certifications

- Point your Web browser to Availability and Certification Reports at http://certification.sybase.com/.
- 2 Either select the product family and product under Search by Base Product; or select the platform and product under Search by Platform.
- 3 Select Search to display the availability and certification report for the selection.

Creating a personalized view of the Sybase Web site (including support pages)

Set up a MySybase profile. MySybase is a free service that allows you to create a personalized view of Sybase Web pages.

- 1 Point your Web browser to Technical Documents at http://www.sybase.com/support/techdocs/.
- 2 Click MySybase and create a MySybase profile.

Sybase EBFs and software maintenance

❖ Finding the latest information on EBFs and software maintenance

- 1 Point your Web browser to the Sybase Support Page at http://www.sybase.com/support.
- 2 Select EBFs/Maintenance. If prompted, enter your MySybase user name and password.
- 3 Select a product.
- 4 Specify a time frame and click Go. A list of EBF/Maintenance releases is displayed.

Padlock icons indicate that you do not have download authorization for certain EBF/Maintenance releases because you are not registered as a Technical Support Contact. If you have not registered, but have valid information provided by your Sybase representative or through your support contract, click Edit Roles to add the "Technical Support Contact" role to your MySybase profile.

5 Click the Info icon to display the EBF/Maintenance report, or click the product description to download the software.

Conventions

Table 1: Syntax conventions

Key	Definition
command	Command names, command option names, utility names, utility flags, and other keywords are in sans serif font.
variable	Variables, or words that stand for values that you fill in, are in <i>italics</i> .
{ }	Curly braces indicate that you choose at least one of the enclosed options. Do not include braces in the command.
[]	Brackets mean choosing one or more of the enclosed items is optional. Do not include braces in the command.
()	Parentheses are to be typed as part of the command.
	The vertical bar means you can select only one of the options shown.
,	The comma means you can choose as many of the options shown as you like, separating your choices with commas to be typed as part of the command.

Accessibility features

This document is available in an HTML version that is specialized for accessibility. You can navigate the HTML with an adaptive technology such as a screen reader, or view it with a screen enlarger.

Open Client and Open ServerTM documentation has been tested for compliance with U.S. government Section 508 Accessibility requirements. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

Note You might need to configure your accessibility tool for optimal use. Some screen readers pronounce text based on its case; for example, they pronounce ALL UPPERCASE TEXT as initials, and MixedCase Text as words. You might find it helpful to configure your tool to announce syntax conventions. Consult the documentation for your tool.

For information about how Sybase supports accessibility, see Sybase Accessibility at http://www.sybase.com/accessibility. The Sybase Accessibility site includes links to information on Section 508 and W3C standards.

If you need help

Each Sybase installation that has purchased a support contract has one or more designated people who are authorized to contact Sybase Technical Support. If you cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area.

CHAPTER 1 Before You Begin

This chapter provides information about system requirements and the tasks you must complete before you install Software Developer's Kit (SDK).

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Preinstallation instructions	3

SDK components

This section summarizes the components in the SDK.

SDK components

SDK is a set of libraries and utilities that you can use to develop client applications and includes these components:

- Open Client version 15.5 an application programming interface (API), which is a set of libraries used to develop and deploy Clanguage applications that access Adaptive Server data. Included on the installation medium are sample programs for Client-Library and DB-LibraryTM.
- Language modules provide system messages and datetime formats to help you localize your applications. Default installation includes these character sets:
 - IBM code page 437 (cp437)
 - IBM code page 850 (cp850)
 - ISO 8859_1 (iso_1)
 - ISO 8859_15 (iso_15:Latin9 western European)

- Unicode UTF-8 encoding (utf8)
- Macintosh Roman (mac)
- Hewlett-Packard Roman 8 and Roman 9 (roman8 and roman9)

Additional language modules:

- Chinese
- French
- German
- Japanese
- Korean
- Polish
- Portuguese
- Spanish
- Thai
- Adaptive Server® Enterprise ODBC Driver by Sybase, version 15.5.
- jConnect for JDBC 6.0.5 and 7.0 the JAVA implementation of the Java JDBC standard, which provides Java developers with native database access in multitier and heterogeneous environments.

Table 1-1 lists the libraries and utilities that are included with the SDK.

Note For jConnect 6.0.5 libraries and utilities, see the *jConnect for JDBC Installation Guide* version 6.0.5.

Table 1-1: SDK libraries and utilities for Mac OS X

SDK	Open Client	
Libraries		
Client-Library	X	
CS-Library	x	
DB-Library	x	
Bulk-Library	x	
Net-Library	x	
Common-Library	x	
SSL	x	
Utilities		
bcp, defncopy, isql, pwdcrypt	x	

System requirements for the SDK

These are the hardware and software requirements for installing the SDK:

Table 1-2: Hardware and software requirements for SDK 15.5 on Mac OS X

Hardware	Operating system	Supported protocol
APPLE Mac OS X on	Mac OS X 10.5 or later	TCP
Intel		

The required installation disk space is approximately 49MB. However, the required disk space depends upon whether you choose a standard or customized installation.

Preinstallation instructions

The following tasks describe how to prepare for installing the SDK.

Note The instructions in this document do not apply to installing the SDK included in the Adaptive Server Enterprise Suite. Those instructions are in the *Adaptive Server Enterprise Installation Guide*.

Preparing for installation

- 1 Read the *SDK Release Bulletin for Mac OS X* for the latest information about the products you are installing.
 - Your Sybase product shipment includes printed release bulletins; they are also available on the Sybase Web site at http://www.sybase.com/support/techdocs.
- 2 Create a "sybase" account on your system to perform all installation tasks.
- 3 Log in to the machine as the "sybase" user.

Maintain consistent ownership and privileges for all files and directories. A single user—the Sybase system administrator with read, write, and execute permissions—should perform all unload, installation, upgrade, and setup tasks.

Warning! Be sure your permissions have been set before starting the installation. The installer does not check for permissions. If you do not have the permission, the installer logs exceptions and "Permission denied" error in the log file.

The "sybase" user must have read/write/execute privileges from the top (or root) of the disk partition or operating system directory down to the specific physical device or operating system files.

- 4 Identify or create a directory location for the Sybase installation directory, where you are going to unload the SDK.
- 5 Verify that the location for the Sybase installation has sufficient space to unload the software. See "System requirements for the SDK" on page 3.

The installation program automatically sets most of the environment variables. You must set others using the *SYBASE.csh* or *SYBASE.sh* scripts file located in *\$SYBASE*. You must also source this environment file before using the product.

When you have reviewed and verified the installation requirements and completed the preinstallation tasks, you are ready to install the SDK.

CHAPTER 2 Installing the SDK

This chapter describes the various methods of installing the SDK for Mac OS X .

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SDK installation modes

You can install using a GUI or command prompt. You can either download the SDK software from the Sybase Product Download Center (SPDC) at https://sybase.subscribenet.com, install the SDK from the CD, or use the command line interface for the installation.

Accessing SPDC

Once you have licensed a Sybase product, you can download the product and generate any applicable licenses from the SPDC at https://sybase.subscribenet.com. Once you purchase a Sybase product, you receive an e-mail message that contains a URL to the SPDC site, a user name, and a password.

Note If you purchased the Sybase software from a Sybase reseller, you may not have access to SPDC.

- 2 Click the URL. When prompted, enter the user name and password. Your login is typically your e-mail address. If you have forgotten your password, use the password finder on the SPDC login page.
- 3 Locate Software Developer's Kit 15.5 for Mac OS X on the product list. From the product page, download the installation program and documentation.

- 4 The install CD download file is a Mac OS X disk image (.dmg), which allows it to be mounted on your desktop as a new volume. In some Web browsers, downloading a disk image also causes the disk image to be mounted automatically. If this does not happen with your browser, double-click the disk image. The Finder mounts the image as a new file system volume, named Sybase SDK 155.
- 5 Double-click the volume icon. The contents of the volume, including the SDK installation package, appear in a separate window. Double-click the package icon to start the Mac OS X installation program.
- 6 Complete steps 2 through 5 in "Installing from the CD" on page 6.

If you are installing on a headless system such as Xserve, see "Installation on Xserve" on page 7.

Installing from the CD

- 1 Insert the CD into the drive, and when it becomes visible on your desktop, double-click its icon. Double-click the SDK installer package.
- 2 In the Welcome to the Sybase Software Developer's Kit 15.5 Installer window, click Next.
- 3 In the Software License Agreement window, click Continue.
- 4 Click Agree after reviewing the license information.
- 5 Choose one of:
 - Install for a standard, complete installation.
 - Customize to choose the components to install.
 - a In the Custom Install on *<computer name>* window, unselect the components that you do not want to install.
 - By default, all the components are selected. Review the disk space required for the installation.
 - b Click Install to install only the selected components.Click Standard Install to revert to the complete installation.

The SDK is installed in the /Applications/Sybase directory.

Installation on Xserve

If you intend to install in a headless system, you must make the installation package visible to that system. You can use the Finder to copy the package to a location that is visible to the headless system (NFS-mounted file system), and then review this section. To install the SDK on Xserve running in a headless mode (without a monitor), you can either:

- Use the Apple Remote Desktop, which gives you a desktop interface to the Xserve or
- Use the shell command /usr/sbin/installer.

To install using the command line installer, place the disk image containing the SDK installation package on a disk volume accessible to Xserve. Enter:

sudo installer -pkg /Volumes/Sybase_SDK_155/sdk155.mpkg -target /

Where the path name to the installation package (.mpkg) identifies the exact location of the file. The target is the root device ("/").

Note You must provide a complete path name to the installation package.

Uninstalling the SDK

To uninstall the SDK, use the uninstall shell script in /Applications/Sybase/System/Install. You can run the uninstall script only with superuser privileges. Enter either of these commands:

- sudo ./uninstall
- sudo ./uninstall override

Warning! Use the uninstall script with caution. Running it empties the /Applications/Sybase folder.

CHAPTER 3 Post-Installation Tasks

This chapter describes the tasks you must perform after installation.

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Setting environment variables

The installation program The installation program automatically sets most of the environment variables it needs, such as PATH, as part of the unloading process. The installation program also unloads .sh and .csh files, which contain the environment variables you must set manually before you can configure and successfully run Open Client components.

Bourne and C shell files

The installation program The installer unloads Bourne shell and C shell files containing environment variables in:

- \$SYBASE/SYBASE.sh
- \$SYBASE/SYBASE.csh

To set the environment variables, either:

- Modify the component's RUN environment using the environment variable values from the shell files, or,
- Update the component's RUN environment immediately before invoking the component, as described below.

Updating the RUN environment immediately

1 In a Bourne shell, enter:

cd /Applications/Sybase
. SYBASE.sh

2 In a C shell, enter:

cd /Applications/Sybase
source SYBASE.csh

Note /Applications/Sybase is the default location for \$SYBASE. If you want to change the target directory during installation, use /my/preferred/sybase_home instead.

Configuring the components

Configure each Open Client component following the instructions in the *Open Client Configuration Guide for Mac OS X*.

For jConnect for JDBC 6.0.5, see the *jConnect for JDBC Installation Guide* version 6.0.5. For jConnect for JDBC 7.0, see "jConnect for JDBC post-installation tasks".

Modifying interfaces file entries

Use a text editor of your choice to modify directory service entries in the *interfaces* file. For information about setting environment variables, see the *Open Client Configuration Guide for Mac OS X*.

jConnect for JDBC post-installation tasks

jConnect for JDBC 7.0 has these post-installation tasks.

Setting JDBC_HOME

JDBC_HOME represents the directory in which you install jConnect. For example:

If your installation directory is /usr/local/Sybase, set the JDBC HOME to:

/usr/local/Sybase/jConnect-7 0

Setting the CLASSPATH

CLASSPATH is the location of the jConnect runtime classes and the *jar* files for JDK 1.6 or later. This section describes what you need in your CLASSPATH depending on which versions of JDK and jConnect you are using.

Using jConnect 7.0 with JDK 1.6.x and later

To use jConnect 7.0 with JDK versions 1.6.x and later, add the following path to the CLASSPATH environment variable:

\$JDBC_HOME/classes/jconn4.jar

Running samples or TDS-tunnelling servlet

To run the samples or the TDS-tunnelling servlet, add the following to the CLASSPATH environment variable:

\$JDBC_HOME/classes/jconn4.jar:\$JDBC_HOME/classes

Note Sybase requires that you run JDK 1.6 or later with jConnect 7.0.

In addition, the CLASSPATH should include the location of any application classes you have defined.

Installing stored procedures

For jConnect to function properly, you must install stored procedures and tables on the Adaptive Server Enterprise or Adaptive Server® Anywhere database to which your application will be connecting. jConnect provides the these scripts to install the required stored procedures and tables:

- *sql_server12.5.sql* installs stored procedures on Adaptive Server Enterprise versions 12.5.x. or later.
- *sql_server15.0.sql* installs stored procedures for Adaptive Server Enterprise 15.x or later.

• $sql_asa.sql$ – installs stored procedures on SQL Anywhere® and Adaptive Server Anywhere databases.

Note If you use Adaptive Server 12.5.3 or later, or ASA 9.0.2 or later, the scripts come pre-installed on the server. You need to install these scripts only if you have a later version of the driver than the one that shipped with Adaptive Server. In addition, for backward compatibility, *sql_server.sql* and *sql_server12.sql* are included on Adaptive Server 11.9.2 and 12.0 respectively, although these versions are no longer supported.

Running stored-procedure installation scripts

- 1 Verify that your JAVA_HOME, JDBC_HOME, and CLASSPATH environment variables are set.
- Use the lsqlApp sample application. For more information on lsqlApp, see "Installing stored procedures on an Adaptive Server database".

Installing stored procedures on an Adaptive Server database

- Go to the \$JDBC_HOME/classes directory and enter:
 - For Adaptive Server version 15.x:

```
java IsqlApp -U sa -P password -S jdbc:sybase:
  Tds:[hostname]:[port] -I $JDBC HOME/sp/sql server15.0.sql -c go
```

• For Adaptive Server version 12.5.x:

```
java IsqlApp -U sa -P password -S jdbc:sybase:
  Tds:[hostname]:[port] -I $JDBC_HOME/sp/sql_server12.5.sql -c go
```

Installing stored procedures on a SQL Anywhere or Adaptive Server Anywhere database

• Go to the \$JDBC_HOME/classes directory and enter:

```
java IsqlApp -U dba -P password -S jdbc:sybase:
  Tds:[hostname]:[port] -I $JDBC HOME/sp/sql asa.sql -c go
```

Reviewing the installation contents

After completing the jConnect installation, review the contents listed in this section.

Packages

For jConnect version 7.0, the following packages are found inside *jconn4.jar* file for the release build, and *jconn4d.jar* file for the debug build:

- com.sybase.jdbc4.jdbc
- com.sybase.jdbc4.tds
- · com.sybase.jdbc4.timedio
- · com.sybase.jdbc4.utils
- com.sybase.jdbcx

The jConnect driver, com.sybase.jdbc4.jdbc.SybDriver, is located in the com.sybase.jdbc4.jdbc package.

Directories and files

Table 3-1 lists the directories and files in the *jconnect70.zip*.

Table 3-1: Directories and files in the jconnect70.zip

Name	Туре	Description
jconnect-7_0	Directory	Contains all of the jConnect version 7.0 files and subdirectories.
classes	Subdirectory	Contains the following jConnect 7.0 components:
		• <i>jconn4.jar</i> file that contains jConnect 7.0 classes
		• <i>sample2</i> subdirectory with jConnect 7.0 class files for sample applets and applications
		• gateway2 subdirectory for compiled TDS-tunnelling servlet
devclasses	Subdirectory	Contains the <i>jconn4d.jar</i> file that contains the same jConnect 7.0 components as <i>jconn4.jar</i> , but debug mode is turned on.
docs	Subdirectory	Contains the:
		• <i>en</i> subdirectory, which contains the English javadoc documentation
		 en/progref subdirectory, which contains the jConnect for JDBC Programmers Reference in HTML and PDF format
		 en/installdocs subdirectory, which contains the jConnect for JDBC Installation Guide in HTML and PDF format
gateway2	Subdirectory	Contains source code for the TDS-tunnelling servlet.
sample2	Subdirectory	Contains source code for sample Java applications.

Name	Туре	Description	
sp	Subdirectory	Contains isql scripts that install stored procedures for function escapes and DatabaseMetaData methods on a database server. The scripts are:	
		• sql_asa.sql (Adaptive Server Anywhere)	
		• sql_server15.0.sql (Adaptive Server Enterprise version 15.x)	
		• sql_server12.5.sql (Adaptive Server Enterprise version 12.5.x)	
tools	Subdirectory	Contains a perl script (<i>decode-tli</i>) that UNIX or Linux users can apply to parse an <i>interfaces</i> file into a readable format.	
netimpct.gif	Graphic file	Contains a jConnect graphic.	
index.html	HTML file	Contains links to jConnect documentation and jConnect samples.	

JDBC samples and specifications

You can find JDBC samples and specifications in the jConnect for JDBC *Programmers Reference*.

Testing the jConnect installation

After jConnect is installed, run the Version program to test the installation.

Note The Version program connects to a demonstration database that Sybase has made available on the Internet. You must have Internet access to run the Version program successfully, or explicitly run it with [-U *username*] [-P *password*] [-S *servername*] commands to point it to your database.

Testing the installation

- 1 From the DOS prompt for Windows, or at a UNIX, Linux or Mac prompt, change to the *JDBC_HOME* directory.
- Verify that your CLASSPATH variable is set for running the sample programs (see "Setting the CLASSPATH" on page 11 for details) and enter the following text:

java sample2.SybSample Version

A SybSample window appears. At the top of the window, the Running Sybase Sample text box displays the source code for Version as the program runs. The middle text box (Sample Output) should display version information. For example:

```
Using JDBC driver version 7.0 jConnect (TM) for JDBC(TM)/7.0...
```

- 3 The output could be one of the following:
 - If the previous message appears in the Sample Output text box, you have successfully installed jConnect.
 - If you get the previous message but the source code for Version does not appear in the Running Sybase Sample text box, and the Status text box at the bottom of the window shows the following message, it means that you have successfully installed jConnect but probably did not enter the command to run the Version program from the *sample2* directory under *JDBC_HOME*:

```
java.io.FileNotFoundException: Version.java
```

 If the SybSample window does not appear and you get the following error message, check your CLASSPATH to verify that it is set correctly:

```
Can't find class sample2.SybSample
```

 If the SybSample window does not come up, and you get one of the following error messages, make sure that your path includes the bin subdirectory of your JDK home directory:

```
"Name specified is not recognized as an internal or external command" \,\,
```

"Bad command or file name"

4 When you have verified that your installation was successful, click Close to exit the SybSample window.

Verifying the jConnect version

Go to the \$JDBC_HOME/classes directory and enter:

```
java -jar jconn4.jar
```

This command prints a version string like the following:

```
jConnect (TM) for JDBC(TM)/7.00(Build
26464/P/EBF17270/JDK16/Sun Oct 11 7:47:00 2009
```

Here, the version number is 7.0. The 5-digit number following the letters "EBF" indicates the exact version of jConnect. This number increases as subsequent EBFs are released.

Sybase recommends that you check the Sybase download Web site periodically for updated versions of jConnect and download the latest version.

This section describes how you can check the exact build version of your jConnect installation.

Upgrading jConnect

See "Migrating jConnect Applications" in the *jConnect for JDBC Programmers Reference* for instructions.

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