SAP

SDK for SAP ASE and SAP Open Server™ 16.0

UNIX

Contents

SDK for SAP ASE and SAP Open Server Components

Components included in SDK for SAP® ASE and SAP® Open Server™ are used to develop client applications and create custom servers.

SDK for SAP ASE Components

SDK for SAP ASE is a set of libraries and utilities for developing client applications.

It includes these components:

- SAP® Open Client™ – a set of APIs used to develop and deploy C-language applications that access SAP® Adaptive Server® Enterprise data. Included on the installation medium are:
  - Drivers for integrating SAP® Client-Library and SAP Open Server applications with directory and security services
  - Sample programs for SAP Client-Library and SAP DB-Library™
- SAP® Open Client Embedded SQL™/C – the precompiler that allows you to embed SAP® Transact-SQL® statements into C-language applications. The installation medium also includes sample programs for Embedded SQL/C.
- SAP® Open Client Embedded SQL/COBOL – the precompiler that allows you to embed SAP Transact-SQL statements into COBOL-language applications. The installation medium also includes sample programs for SAP Embedded SQL/COBOL.

Note: SAP Embedded SQL/COBOL is available on all platforms except Linux on POWER 32-bit.

- Language modules – provide system messages and datetime formats to help you localize your applications. Default installation includes these character sets:

ASCII, for use with unspecified 8-bit data (ascii_8)	BIG 5, Traditional Chinese with Hong Kong Supplementary Character Set (big5hk)
BIG 5, Traditional Chinese (big5)	Microsoft Windows Code Page 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 866 (cp1250, cp1251, cp1252, cp1253, cp1254, cp1255, cp1256, cp1257, cp1258, cp866)
IBM Code Page 852, 855, 857, 860, 864, 869, 874, 950 (cp437, cp850, cp852, cp855, cp857, cp860, cp864, cp869, cp874, cp950)	Variant of Code Page 850 (cp858), IBM Code Page 932 for JIS-X0201 and JIS-X0208 (cp932)

Code Page 437, 850 (cp437, cp850)	
CP936, Simplified Chinese (cp936)	PC (MS) Korean (cp949)
DEC Kanji Code for JIS-X0208 (deckanji)	Extended UNIX Code for CNS-11643 (euccns)
Extended UNIX Code for GB2312-80 (eucgb)	Extended UNIX Code for JIS-X0201 and JIS-X0208 (eucjis)
Extended UNIX Code for KSC-5601 (eucksc)	P.R.C standard GB 18030-2000 (gb18030)
HP Greek (greek8)	ISO_8859-15 Latin9, Western Europe (iso15)
ISO_8859-2 Latin2, Eastern Europe (iso88592)	ISO_8859-5 Cyrillic (iso88595)
ISO_8859-6 Arabic, ASMO-708 (iso88596)	ISO_8859-7 Greek, ELOT_928 (iso88597)
ISO_8859-8 Hebrew (iso88598)	ISO_8859-9 Latin5, Turkish (iso88599)
ISO 8859-1 (iso_1)	KOI-8 Cyrillic 8-bit (koi8)
Kazakhstan, Cyrillic (kz1048)	Macintosh Western European locales (mac)
Macintosh Cyrillic (mac_cyr)	Macintosh, Eastern European (mac_ee)
Macintosh with EURO support for Western European locales (mac_euro)	Macintosh, Greek (macgrk2)
Macintosh, Turkish (macturk)	Hewlett-Packard Roman 8 and Roman 9 (roman8, roman9)
IBM/Microsoft Code for JIS-X0201 and JIS-X0208 (sjis)	Thailand Industrial Standard (tis620)
HP Turkish, 8-bit (turkish8)	Unicode UTF-8 encoding (utf8)

Additional language modules:
- Chinese
- French
- German
- Japanese
- Korean
- Polish
- Portuguese
- Spanish
- Thai

> **Note:** SDK for SAP ASE and SAP Open Server support the same character sets as SAP Adaptive Server.

- SAP® Adaptive Server® Enterprise ODBC Driver, version 16.0.
- **Note:** Adaptive Server ODBC Driver is available only on HP-UX Itanium 64-bit, Solaris SPARC 64-bit, Solaris x86-64 64-bit, IBM AIX 64-bit, Linux x86 32-bit, Linux x86-64 64-bit, and Linux on POWER 64-bit.
- SAP® jConnect™ for JDBC – the JAVA implementation of the Java JDBC standard, which provides Java developers with native database access in multitier and heterogeneous environments. For SAP jConnect hardware and software requirements as well as installation instructions, see the *SAP jConnect for JDBC Installation Guide*.
- SAP Extended Architecture (XA) Interface Library for SAP Adaptive Server Distributed Transaction Manager. Also included are sample programs for XA.

> **Note:** SAP XA is available on all platforms except Linux x86 32-bit, Linux on POWER 32-bit and 64-bit, and HP-UX Itanium 32-bit.

- SAP® Adaptive Server® Enterprise extension module for Python scripting language allows Python developers to execute T-SQL queries against SAP Adaptive Server. See the *SAP Adaptive Server Enterprise Extension Module for Python Programmers Guide* for more details. The installation media includes samples.
- SAP® Adaptive Server® Enterprise extension module for PHP scripting language allows PHP developers to execute SAP T-SQL queries against Adaptive Server. See the *SAP Adaptive Server Enterprise Extension Module for PHP Programmers Guide* for more details. The installation media includes samples.
- SAP® Adaptive Server® Enterprise database driver for Perl allows Perl developers to execute T-SQL queries against SAP Adaptive Server. See the *SAP Adaptive Server Enterprise Database Driver for PERL Programmers Guide* for more details. The installation media includes samples.

SDK for SAP ASE Libraries and Utilities

Libraries and utilities that are included with the SDK for SAP ASE.

SDK for SAP ASE	SAP Open Client	SAP Embedded SQL/C	SAP Embedded SQL/CO-BOL	Perl	PHP	Python
Libraries						
SAP Client-Library	x	x	x	x	x	x
SAP CS-Library	x	x	x	x	x	x
SAP DB-Library	x	n/a	n/a	n/a	n/a	n/a
Bulk-Library	x	n/a	n/a	n/a	n/a	n/a

SDK for SAP ASE	SAP Open Client	SAP Embedded SQL/C	SAP Embedded SQL/COBOL	Perl	PHP	Python
SAP XA-Library	x	n/a	n/a	n/a	n/a	n/a
SAP Net-Library	x	x	x	x	x	x
SAP Common-Library	x	x	x	x	x	x
LDAP	x	x	x	x	x	x
SSL	x	x	x	x	x	x
Kerberos	x	x	x	x	x	x
DBAPI	n/a	n/a	n/a	x	x	x
SAP intllib	x	x	x	x	x	x
Utilities						
bcp, **defncopy**, **dscp**, **dsedit**, **isql**, **certauth**, **certpk12**, **certreq**, **extractjava**, **installjava**, **pwdcrypt**	x	n/a	n/a	n/a	n/a	n/a
cpre	n/a	x	n/a	n/a	n/a	n/a
cpre64 (non-reentrant version), **cpre_r64** (reentrant version)	n/a	x	n/a	n/a	n/a	n/a
cobpre	n/a	n/a	x	n/a	n/a	n/a
cobpre64 (non-reentrant version), **cobpre_r64** (reentrant version)	n/a	n/a	x	n/a	n/a	n/a
LEGEND: x = available; n/a = not available on this component.						

Note: For SAP jConnect 16.0 libraries and utilities, see the *SAP jConnect for JDBC Installation Guide* version 16.0.

SAP Open Server Components

SAP Open Server is a set of APIs and supporting tools that you can use to create custom servers that respond to client requests submitted through SAP Open Client or SAP jConnect routines.

SAP Open Server include these components:

- SAP Open Server – a set of APIs and supporting tools. Included on the installation medium:
  - Drivers for integrating SAP Client-Library and SAP Open Server applications with directory and security services
  - Sample programs for SAP Server-Library and SAP Client-Library
- SAP Open Client – a set of APIs used to develop and deploy C-language applications that access Adaptive Server data. Included on the installation medium:
  - Drivers for integrating SAP Client-Library and SAP Open Server applications with directory and security services
  - Sample programs for SAP Client-Library and SAP DB-Library to SAP Client-Library Migration
- Language modules – provide system messages and datetime formats to help you localize your applications. Default installation includes some of these character sets:

ASCII, for use with unspecified 8-bit data (ascii_8)	BIG 5, Traditional Chinese with Hong Kong Supplementary Character Set (big5hk)
BIG 5, Traditional Chinese (big5)	Microsoft Windows Code Page 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 866 (cp1250, cp1251, cp1252, cp1253, cp1254, cp1255, cp1256, cp1257, cp1258, cp866)
IBM Code Page 437, 850, 852, 855, 857, 860, 864, 869, 874, 950 (cp437, cp850, cp852, cp855, cp857, cp860, cp864, cp869, cp874, cp950)	Variant of Code Page 850 (cp858), IBM Code Page 932 for JIS-X0201 and JIS-X0208 (cp932)
Code Page 437, 850 (cp437, cp850)	
CP936, Simplified Chinese (cp936)	PC (MS) Korean (cp949)
DEC Kanji Code for JIS-X0208 (deckanji)	Extended UNIX Code for CNS-11643 (euccns)
Extended UNIX Code for GB2312-80 (eucgb)	Extended UNIX Code for JIS-X0201 and JIS-X0208 (eucjis)

Extended UNIX Code for KSC-5601 (eucksc)	P.R.C standard GB 18030-2000 (gb18030)
HP Greek (greek8)	ISO_8859-15 Latin9, Western Europe (iso15)
ISO_8859-2 Latin2, Eastern Europe (iso88592)	ISO_8859-5 Cyrillic (iso88595)
ISO_8859-6 Arabic, ASMO-708 (iso88596)	ISO_8859-7 Greek, ELOT_928 (iso88597)
ISO_8859-8 Hebrew (iso88598)	ISO_8859-9 Latin5, Turkish (iso88599)
ISO 8859-1 (iso_1)	KOI-8 Cyrillic 8-bit (koi8)
Kazakhstan, Cyrillic (kz1048)	Macintosh Western European locales (mac)
Macintosh Cyrillic (mac_cyr)	Macintosh, Eastern European (mac_ee)
Macintosh with EURO support for Western European locales (mac_euro)	Macintosh, Greek (macgrk2)
Macintosh, Turkish (macturk)	Hewlett-Packard Roman 8 and Roman 9 (roman8, roman9)
IBM/Microsoft Code for JIS-X0201 and JIS-X0208 (sjis)	Thailand Industrial Standard (tis620)
HP Turkish, 8-bit (turkish8)	Unicode 3.1 UTF-8 encoding (utf8)

Additional language modules:
- Chinese
- French
- German
- Japanese
- Korean
- Polish
- Portuguese
- Spanish
- Thai

SAP Open Server Libraries and Utilities for UNIX Platforms

Libraries and utilities that are installed with SAP Open Server.

Libraries	- SAP Server-Library - SAP Client-Library - SAP CS-Library - SAP Net-Library - SAP Bulk-Library - SAP Common-Library - LDAP - SSL - Kerberos
Utilities	**bcp** **defncopy** **dsedit** **dscp** **isql** **certauth** **certpk12** **certreq** **pwdcrypt**

System Requirements for SDK for SAP ASE and SAP Open Server

Hardware, software, compilers, and disk space requirements for SDK for SAP ASE and SAP Open Server.

Hardware and Software Requirements

Platforms, compilers, and third-party products SAP Open Server and SAP ASE SDK products are built and tested on.

The supported protocol for SAP Open Server and SAP ASE SDK is TCP/IP.

Table 1. Open Server and Open Client Platform Compatibility Matrix

Platform	Operating System Level	C and C++ Compilers	COBOL Compiler	Kerberos Version	Lightweight Directory Access (LDAP)	Secure Sockets Layer (SSL)	Perl Version	PHP Version	Python Version
HP-UX Itanium 32-bit	HP 11.31	HP ANSI C A.06.17	MF SE 5.1	MIT 1.4.1	OpenLDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e and OpenSSL -FIPS 2.0.5	5.14 (DBI 1.616)	n/a	n/a
HP-UX Itanium 64-bit	HP 11.31	HP ANSI C A.06.17	MF SE 5.1	MIT 1.4.1	OpenLDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e and OpenSSL -FIPS 2.0.5	n/a	5.3.6	2.6, 2.7, and 3.1 (DB API 2.0)
IBM AIX 32-bit	AIX 6.1	XL C 10.1	MF SE 5.1	Cyber-safe Trust-broker 2.1, MIT 1.4.1	OpenLDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e	5.14 (DBI 1.616)	n/a	n/a
IBM AIX 64-bit	AIX 6.1	XL C 10.1	MF SE 5.1	MIT 1.4.3	OpenLDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e	n/a	5.3.6	2.6, 2.7, and 3.1 (DB API 2.0)
Linux x86 32-bit	Red Hat Enterprise Linux 5.3	gcc 4.1.2 20060404 kernel 2.6.9-55.ELsmp	MF SE 5.1	*MIT 1.4.2	OpenLDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e and OpenSSL -FIPS 2.0.5	n/a	n/a	n/a

Plat-form	Oper-ating System Level	C and C++ Com-pilers	CO-BOL Com-piler	Ker-beros Ver-sion	Light-weight Directo-ry Ac-cess (LDAP)	Secure Sock-ets Lay-er (SSL)	Perl Ver-sion	PHP Ver-sion	Py-thon Ver-sion
Linux x86-64 64-bit	Red Hat En-terprise Linux 5.3 (Na-hant Update 4)	gcc 4.1.2 20060404 kernel 2.6.9-55. ELsmp	MF SE 5.1	MIT 1.4.3	Open-LDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e and OpenSSL -FIPS 2.0.5	5.14 (DBI 1.616)	5.3.6	2.6, 2.7, and 3.1 (DB API 2.0)
Linux on POW-ER 32-bit	Red Hat En-terprise Linux 5.3	XL C 10.1	None plan-ned	MIT 1.4.1	Open-LDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e and OpenSSL -FIPS 2.0.5	5.14 (DBI 1.616)	n/a	n/a
Linux on POW-ER 64-bit	Red Hat En-terprise Linux 5.3	XL C 10.1	MF SE 5.1	MIT 1.4.1	Open-LDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e	n/a	5.3.6	2.6, 2.7, and 3.1 (DB API 2.0)
So-laris SPARC 32-bit	Solaris 10	Solaris Studio 12.1	MF SE 5.1	*Cy-bersafe Trust-broker 2.1, MIT 1.4.2	Open-LDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e and OpenSSL -FIPS 2.0.5	5.14 (DBI 1.616)	n/a	n/a

Platform	Operating System Level	C and C++ Compilers	COBOL Compiler	Kerberos Version	Lightweight Directory Access (LDAP)	Secure Sockets Layer (SSL)	Perl Version	PHP Version	Python Version
Solaris SPARC 64-bit	Solaris 10, patch level 144488-17 or later, patch level 119963-24 or later for `SUNW libC`	Solaris Studio 12.1	MF SE 5.1	*Cybersafe Trustbroker 2.1, MIT 1.4.2	OpenLDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e and OpenSSL -FIPS 2.0.5	n/a	5.3.6	2.6, 2.7, and 3.1 (DB API 2.0)
Solaris x86 32-bit	Solaris 10	Solaris Studio 12.1	MF SE 5.1	MIT 1.4.2	OpenLDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e and OpenSSL -FIPS 2.0.5	5.14 (DBI 1.616)	n/a	n/a
Solaris x86-64 64-bit	Solaris 10	Solaris Studio 12.1	MF SE 5.1	MIT 1.4.2	OpenLDAP 2.4.16 with OpenSSL 0.9.8l	OpenSSL 1.0.1e and OpenSSL -FIPS 2.0.5	n/a	5.3.6	2.6, 2.7, and 3.1 (DB API 2.0)
LEGEND: n/a = script is unavailable or does not work with SAP ASE SDK on that platform.									

Note: Kerberos Authentication for DB-Library component is available only on three platforms which are marked with asterisk sign (*).

For the required patches that must be installed before installation, check the relevant release bulletin for UNIX platforms. Contact SAP Technical Support for the appropriate platform for the latest patches available.

Required Utility

SAP Open Server installer requires **gzip**. Ensure that the path to **gzip** is set in the *$PATH* environment variable.

Disk Space Requirements

The required installation disk space for each platform varies from 55MB to 665MB.

The required disk space for installation depends on:

- Product being installed – SAP ASE SDK and SAP Open Server
- Architecture – 32-bit or 64-bit
- Platform – IBM AIX 32-bit and 64-bit, HP-UX Itanium 32-bit and 64-bit, Linux x86 32-bit, Linux x86-64 64-bit, Linux on POWER 32-bit and 64-bit, Solaris x86 32bit, Solaris x86-64 64-bit, and Solaris SPARC 32-bit and 64-bit.
- Type of installation – typical, full, or custom

Disk Space Required for the Installation

To ensure that there is sufficient disk space for the installation, a Pre-Installation Summary window displays every component that is to be installed and the total disk space required for all the selected components.

If you continue without sufficient disk space, a warning appears, displaying the space-required, and the space-available information in the target directory. The warning also displays the minimum space that you need to free up to proceed with the installation, otherwise, you can cancel the installation.

SAP jConnect Requirements

You can install SAP jConnect as a separate product. It requires approximately 15MB for SAP jConnect 16.0.

Preinstallation Tasks for SDK for SAP ASE and SAP Open Server

Prepare for installing the SDK for SAP ASE and SAP Open Server products.

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

Preparing for Installation

Prepare to install of SDK for SAP ASE and SAP Open Server.

1. Read the *SAP ASE SDK or SAP Open Server Release Bulletin for UNIX* for the latest information on the products you are installing.

   The latest release bulletins are available on the Sybase Product Documentation Web site *http://www.sybase.com/support/techdocs*.

2. Create a "sybase" account on your system to perform all installation tasks. The system administrator usually sets up this account, as doing so requires "administrator" privileges.

3. Log in to the machine as the "sybase" user.

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

   Warning! Ensure 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**, and **execute** privileges to update the Windows registry 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 SAP Open Server installation directory, where you unload the SAP ASE SDK and SAP Open Server products.

5. Verify that the location for the SAP Open Server installation has sufficient space to unload the software. See *Disk Space Requirements*.

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 SAP ASE SDK and SAP Open Server.

See also
- *Disk Space Requirements* on page 11

Preinstallation Instructions for Linux on POWER 32-bit and 64-bit

SAP Open Server is compiled and linked with IBM XL C version 10.1.

Before you install SAP Open Server, install the runtime libraries for the IBM XL C compiler. Otherwise, you will receive an installation error.

Verify that IBM XL C runtime packages were installed earlier by issuing:
```
vacpp.rte-10.1.0-0
```

- If the command returns **vacpp.rte-10.1.0-0**, it indicates that IBM XL C runtime packages were installed earlier, and you may proceed with the installation of SAP Open Server.
- If the message is:

```
package vacpp.rte-10.1.0-0 is not installed
```

Download the IBM XL C version 10.1 runtime executables from the *IBM Web site* at *https://www-304.ibm.com/support/docview.wss?uid=swg24021253*

Follow the instructions on the Web page to download and install the packages. Ensure to select the installation package for Red Hat 5.3 operating systems from the download table.

When installation of IBM XL C version 10.1 runtime libraries is complete, you may proceed with the installation of SAP Open Server.

Preinstallation Instructions on Linux

Utilities that are built with X/Motif.

Ensure you have these packages installed in your system:

- `openmotif-2.3.1-2.el5`
- `libXp-1.0.0-8.1.el5`
- `libXt-1.0.2-3.1.fc6`
- `libXtst-1.0.1-3.1`
- `libXmu-1.0.2-5`
- `libXext-1.0.1-2.1`
- `libSM-1.0.1-3.1`
- `libICE-1.0.1-2.1`
- `libX11-1.0.3-9.el5`

SDK for SAP ASE and SAP Open Server Installation

Install, uninstall, and downgrade using the SDK for SAP ASE and SAP Open Server installer and the command line commands.

Using SDK for SAP ASE or SAP Open Server Installer

Install SDK for SAP ASE and SAP Open Server components using the installer.

Prerequisites

- The target computer meets the requirements outlined in *System Requirements for SDK for SAP ASE and SAP Open Server*.
- You have completed the list of tasks for SDK for SAP ASE and SAP Open Server in *Preinstallation Tasks for SDK for SAP ASE and SAP Open Server*.

The installation program creates the target directory (if necessary) and unloads all the selected components into that directory. The options for installing SAP components from the distribution media using the installation program:

- Graphical user interface (GUI) mode – install the components using the SAP ASE SDK and SAP Open Server installer interface.
- Console mode – install components in a command line environment.
- Response file – record or create a response file. Using a response file, you can install SDK for SAP ASE and SAP Open Server in silent mode. Silent installation lets you install the product without interaction required on your part. This is convenient if you are performing identical installations on multiple machines.

Note: If you encounter problems during installation, check the installation log file to see a record of the installation process. The file is located in , where `$SYBASE/log/<product_name>.log,` `$SYBASE` is the SDK for SAP ASE and SAP Open Server installation directory.

See also
- *System Requirements for SDK for SAP ASE and SAP Open Server* on page 7
- *Preinstallation Tasks for SDK for SAP ASE and SAP Open Server* on page 11

Installing on a Remote Machine

To install on a remote machine from the local machine, you must set permission on the local machine for the remote machine to display the installer windows on the local machine.

Granting Permission for a Remote Machine to Run the SAP ASE SDK or SAP Open Server Installer in GUI Mode

Steps to grant permission for a remote machine to run the SAP ASE SDK and SAP Open Server installer in GUI mode.

1. At the UNIX prompt of your *local* machine, enter:

```
xhost +remote_machine
```

where *remote_machine* is the machine on which you are running the installer.

2. On the remote machine where you are installing the software, verify that the DISPLAY environment variable is set to the local machine where you are viewing the installer windows and output.

If the installer cannot find your DISPLAY variable, you cannot run the GUI.
- For C shell:
```
setenv DISPLAY host_name:0.0
```
- For Bourne shell:
```
DISPLAY=host_name:0.0; export DISPLAY
```

where *host_name* is the name of the local (display) machine.

Note: For remote installations, you must be able to **rsh** into the machine on which you are installing the software. If you cannot do this, add the installation host to your `.rhosts` file.

Configuring SDK for SAP ASE or SAP Open Server

Before you can use the products you must perform additional configuration procedures. You can verify the product installation at the end of this process.

Note: SDK for SAP ASE and SAP Open Server binaries like isql and bcp share the same name between the 32-bit and 64-bit products. Installing SAP Adaptive Server, SDK for SAP ASE and SAP Open Server 64-bit products with other SDK for SAP ASE and SAP Open Server 32-bit products in the same SAP installation overwrites the 32-bit binaries, and may cause issues with the peaceful coexistence of multiple products.

Beginning with SAP Adaptive Server 15.0.2 and SDK for SAP ASE and SAP Open Server 15.0 ESD #9, 64-bit binaries have been replaced with 32-bit binaries on all 64-bit UNIX platforms to retain the peaceful coexistence of multiple products in the same SAP installation.

Mounting the CD

Mount a CD on various platforms.

Insert the SDK for SAP ASE and SAP Open Server CD in the CD drive, and if necessary, mount the CD. To install both products, repeat this procedure using the appropriate CD, after you install the first product.

Note: The location of the **mount** command is site-specific and may differ from the instructions shown here. If you cannot mount the CD drive using the path shown, check your operating system documentation or contact your system administrator.

- For HP HP-UX:

  Log out, log in as "root," and mount the CD using:

  ```
  mount -F cdfs -o ro,rr /device_name /cdrom
  ```

  Then, log out and log in again as "sybase."

- For IBM AIX:

  Log in as "sybase," and mount the CD:

  ```
  /usr/sbin/mount -v cdrfs -r device_name /cdrom
  ```

  where:
  - *device_name* is the CD drive device name.
  - */cdrom* is the name of the directory where the CD is to be mounted.

- For Solaris platforms:

  The operating system automatically mounts the CD. Log in as "sybase." If you receive CD-reading errors, check your operating system kernel to make sure the ISO 9660 option is turned on. On Solaris, the CD drive device name is /cdrom/cdrom*x*, where *x* is the number of the CD device.

- For Linux platforms:

  The operating system automatically mounts the CD.

Installing in GUI Mode

Install SDK for SAP ASE or SAP Open Server in GUI mode.

1. Verify that the drive on which you will install the products has enough disk space for the products being installed, and at least 10MB extra disk space for the installation program. The program frees this space after the installation is complete.

   If the installer does not have sufficient temporary space to run, set the environment variable IATEMPDIR to *tmp_dir* before running the installer again, where tmp_dir is the temporary directory to which the installation program writes the temporary installation files.

   Note: When specifying the *tmp_dir*, include the full path.

2. At the UNIX prompt, start the installer.

- For IBM AIX, Linux, and Solaris:

```
cd /cdrom/cdromn/pathname
./setup.bin
```

- For HP HP-UX:

```
cd /cdrom/pathname
./setup.bin
```

where:

- `cdrom/cdromn` is the directory (mount-point) you specified when mounting the CD drive. For example, on Solaris the mount-point can be `cdrom/cdrom0`.
- `setup.bin` is the executable file name to install SDK and Open Server products.

This unloads the components in GUI mode.

3. In the Introduction window, click **Next** to proceed with the installation.

4. Read the License and Copyright Agreement. Select the geographic location from where you are installing to display the agreement appropriate to your region. Select "I agree to the terms of the End User License Agreement for the install location specified." and click **Next**.

You must agree to the license and copyright agreement before you can continue.

5. In the Choose Install Folder window, click **Next** to accept the default directory for the installation, or click **Choose** to browse through the directory and select a location for the installation. One of these occurs:

- If the installation directory you chose does not exist, the installer prompts:

```
The directory <directory_name> does not exist. Do you want to
create it?
```

Click **Yes**.

- If the installation directory exists, the installer prompts:

```
Warning: You have chosen to install into an
existing directory. If you proceed with this
installation, any older versions of the products
you choose to install that are detected in this
directory will be replaced.
```

If you continue and the older products were not installed with SDK for SAP ASE or SAP Open Server installer (for example, if you installed a version of SAP Adaptive Server earlier than 16.0), the installer overwrites the common files.

If you are prompted to overwrite any files, click **Yes** only if the version of the new file is later than the one the installer is attempting to overwrite.

6. Select the type of installation:

- Typical (default) – installs the SDK for SAP ASE or SAP Open Server components considered to be useful for most customers. In this type of installation, only the U.S. English language module and its supported character sets are installed.

The components to be installed and the total disk space required appear before the installation executes. See *SDK for SAP ASE or SAP Open Server Components*.

- Full – installs every SDK for SAP ASE or SAP Open Server component, including all the supported language modules from the CD.

  The components to be installed and the total disk space required appear before the installation executes. For a list of language modules you can install, see *SDK for SAP ASE or SAP Open Server Components.*

- Custom – allows you to select the components for SDK or Open Server to install. When you select **Custom** install, the next window displayed is the Choose **Install Set**, window which allows you to select the components you want to install.

  Note: Some components are automatically installed if they are required to run other selected components.

After you have selected the installation type, click **Next**.

The Pre-Installation Summary window displays the product features or components to be installed and the total disk space required for all the selected features.

7. Verify that you have selected the correct installation type, and that you have enough disk space to complete the process. Click **Install**.

The installation program unloads all the components from the CD and displays a progress indicator.

Note: Starting with version 15.7 ESD#3, you can choose to skip installation of sample files, documentation files, and debug files. By default, these files are installed when you install SDK for SAP ASE and SAP Open Server. To skip installation of these files, use the –DPRODUCTION_INSTALL=TRUE installer command-line argument when installing in GUI mode.

See also
- *SDK for SAP ASE and SAP Open Server Components* on page 1

Installing in Console Mode

Install SDK for SAP ASE or SAP Open Server in console mode.

Prerequisites
Run the installer without the GUI, launch the installer in console mode. If the installer launches automatically, click **Cancel** to cancel the GUI installation, then launch the **setup** program from a terminal or console.

Task

1. At the command line, enter:

```
./setup.bin -i console
```

2. The flow of the installation is identical to a GUI installation, except that the display is written to a terminal window and responses are entered using the keyboard. Follow the remaining prompts to install either SDK for SAP ASE or SAP Open Server software.

For a complete list of command line options, see *Command Line Options*.

Note: Starting with version 15.7 ESD#3, you can choose to skip installation of sample files, documentation files, and debug files. By default, these files are installed when you install SAP ASE SDK and SAP Open Server. To skip installation of these files, use the `-DPRODUCTION_INSTALL=TRUE` installer command-line argument when installing in console mode.

See also
• *Command Line Options* on page 23

Installing Using a Response File

To perform a silent, or "unattended" installation, run the installer and provide a response file that contains your preferred installation configuration.

Creating a Response File
Create a response file when installing in GUI or console mode.

1. Specify the `-r` command line argument.
The `-r` argument records your responses to the installation wizard's prompts and creates a response file when the installation wizard exits. The response file is a text file that you can edit to change any responses prior to using it in any subsequent installations.

2. On the command line, enter:

```
./setupConsole.exe -r responseFileName
```

where *responseFileName* is the absolute path of the file name you choose for the response file, for example:

```
/home/sybase/SDK/ResponseFile.txt
```

Note: The directory path you specified must already exist.

The response file is created in the specified location once installation is completed.

Installing in Silent Mode
A silent or unattended installation does not involve user interaction; all installation configuration information is taken from the response file. This is useful when you want multiple identical installations or a fully automated installation process.

To install in silent mode, run:

```
./setupConsole.exe –f responseFileName -i silent
-DAGREE_TO_SYBASE_LICENSE=true
```

where *responseFileName* is the absolute path of the file name containing the installation options you chose.

You must agree to the End User License Agreement when installing in silent mode. You can either:

- Include the option -DAGREE_TO_SYBASE_LICENSE=true in the command line argument.
- Edit the response file to include the property AGREE_TO_SYBASE_LICENSE=true

Note: Starting with version 15.7 ESD #3, you can choose to skip installation of sample files, documentation files, and debug files. By default, these files are installed when you install SAP Open Server and SDK for SAP ASE. To skip installation of these files, use the -DPRODUCTION_INSTALL=TRUE installer command-line argument or use the **PRODUCTION_INSTALL=TRUE** property in the response file when installing in silent mode.

Uninstalling SAP ASE SDK or SAP Open Server

The installer includes an uninstall feature that removes the SDK for SAP ASE or SAP Open Server components you have installed.

Before uninstalling consider:

- If two or more SAP products install the shared components in the same directory, the uninstaller does not remove the shared components until all the SAP products are uninstalled.

  Warning! Do not uninstall SAP Open Server and SDK for SAP ASE products from a directory that contains other SAP products that have been installed using an installation program other than the SAP Open Server or SDK for SAP ASE installer. By doing so, you may remove the components shared by SAP products and affect their operation.

- The **uninstall** feature removes only those files that were loaded from the installation CD. Some SAP Open Server or SDK for SAP ASE files, such as log and configuration files, are left intact for administrative purposes. If all products are uninstalled from the directory and you do not need the remaining configuration files, you can manually delete the directory.

Uninstallation Procedures

Invoke the **uninstall** procedure using either the GUI or the console method.

Before uninstalling SAP Open Server or SDK for SAP ASE, shut down all other processes for the components you are uninstalling.

Uninstalling in GUI Mode

Uninstall SDK for SAP ASE or SAP Open Server in GUI mode for UNIX platform.

1. From the command line, enter:
    -   For SDK for SAP ASE:
        ```
        $SYBASE/sybuninstall/SDKSuite/uninstall
        ```
    -   For SAP Open Server:
        ```
        $SYBASE/sybuninstall/OpenServerSuite/uninstall
        ```
2. Click **Next**.

    The **Uninstall Options** window appears.
3. Select one of these:
    -   Complete Uninstall – completely remove all features and components of SDK for SAP ASE or SAP Open Server. The files and folders created after the installation are not affected.
    -   Uninstall Specific Features – allows you to uninstall specific features of SDK for SAP ASE or SAP Open Server.

        If you select this option, the Choose Product Features appears and you can select the features to uninstall.
4. Click **Next**. The Uninstall Complete appears, listing the items that cannot be removed.

    Note: If there are no other products installed in the directory and it contains files that were not installed by the installer, a window appears asking if you want to delete these files.
5. Click **Done**.

Uninstalling in Console Mode

Uninstall SDK for SAP ASE and SAP Open Server in console mode.

1. Go to the $SYBASE directory, and at the prompt, enter any one of these commands:

    For SDK:
    ```
    $SYBASE/sybuninstall/SDKSuite/uninstall -i console
    ```

    For Open Server:
    ```
    $SYBASE/sybuninstall/OpenServerSuite/uninstall -i console
    ```

    The **uninstall** program starts.
2. The flow of the **uninstall** program is identical to a regular GUI uninstall, except that the display is written to a terminal window and responses are entered using the keyboard. Follow the remaining prompts to uninstall either the SDK for SAP ASE or SAP Open Server software.

See also

Downgrading SDK for SAP ASE or SAP Open Server

Downgrade SAP Open Server or SDK for SAP ASE 16.0 to an earlier software version.

1. Uninstall version 16.0. You cannot install the earlier software version into the existing version 16.0 directory.
2. Install the earlier software version. The earlier software installation does not contain ESDs, so you must install them separately.

Command Line Options

The command line options you can use when running an installer or uninstaller.

Option	Purpose
`-i console`	Use the console **interface** mode, where messages during installation are displayed on the Java console and the wizard is run in console mode.
`-D`	Passes custom variables and properties. For example, to override the default installation directory when you run the installer, enter: `<install_launcher_dir> -DUSER_IN-STALL_DIR=E:\Sybase`
`-i silent`	Install or uninstall the product in silent mode, where the installation or uninstallation is performed with no user interaction and the installation is "silent."
`-i swing`	Install or uninstall the product in GUI mode.
`-r`	Generates a response files and a reference.
`-f`	References response files.
`-l`	Sets the installer's locales.
`-\?`	Displays the installer help.

Postinstallation Tasks

Postinstallation tasks include configuring SAP Open Client, SAP Open Server, and SAP jConnect for JDBC.

Setting Environment Variables in UNIX

The installation program automatically sets most of the environment variables it needs, such as PATH, as part of the unloading process.

It also unloads `.sh` and `.csh` files, which contain the environment variables you must set manually before you can configure and successfully run SAP Open Client and SAP Open Server components.

Bourne and C Shell Files

The installer unloads Bourne shell and C shell files containing environment variables.

- Bourne shell and C shell files that contain environment variables are:
  `$SYBASE/SYBASE.sh`
  `$SYBASE/SYBASE.csh`
- Set the environment variables, either by:

  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.

Updating the RUN Environment

Use these samples scripts after installation to update the RUN environment.
Sample scripts:

- In a Bourne shell, enter:
```
cd $SYBASE
. SYBASE.sh
```

- In a C shell, enter:
```
cd $SYBASE
source SYBASE.csh
```

Running Sample Script for Python

After installation, run the sample script for the SAP Adaptive Server extension module for Python.

1. Locate Python samples in `$SYBASE/$SYBASE_OCS/samples/python` directory.
2. Verify that SAP Adaptive Server is up and running.
3. Ensure that the PYTHONPATH environment variable or the Python variable `sys.path` is set to one of the following directories (these are the default directories where the different versions of the Adaptive Server Python extension module are installed):

Table 2. PYTHONPATH Settings

Python Version	Default Installation Path
2.6	`$SYBASE\$SYBASE_OCS\python\python26_64r\lib`
2.7	`$SYBASE\$SYBASE_OCS\python\python27_64r\lib`
3.1	`$SYBASE\$SYBASE_OCS\python\python31_64r\lib`

4. Run the sample:
```
python test.py
```

See the *Adaptive Server Enterprise extension module for Python Programmers Guide*.

Running Sample Script for PHP

Run the sample script for the SAP Adaptive Server Enterprise extension module for PHP.

1. Locate PHP samples in `$SYBASE/$SYBASE_OCS/samples/php`.
2. Verify that SAP Adaptive Server is up and running.
3. Generate a sample `php.ini` file by executing:

    `$SYBASE/$SYBASE_OCS/config/generate_php_ini.sh.`
4. Ensure these environment variables are set:

   • SYBASE
   • SYBASE_OCS

- LD_LIBRARY_PATH – specifies the `$SYBASE/$SYBASE_OCS/lib` directory.

5. Run the sample:

```
php -c $SYBASE/$SYBASE_OCS/config firstapp.php
```

or, to obtain a list of loaded extensions, excute:

```
php -c $SYBASE/$SYBASE_OCS/config -m
```

See the *Adaptive Server Enterprise Extension Module for PHP Programmers Guide*.

Running Sample Script for Perl

Run the sample script for the SAP Adaptive Server Enterprise database driver for Perl.

1. Locate Perl samples in `$SYBASE/$SYBASE_OCS/samples/perl`.

2. Verify that SAP Adaptive Server is up and running.

3. Ensure that the *PERL5LIB* environment variable is set.

- On Linux x86-64 64-bit drivers, specify the
  `$SYBASE/$SYBASE_OCS/perl/sybaseperl_64r/lib/lib: \`
  `$SYBASE/$SYBASE_OCS/perl/sybaseperl_64r/lib/arch` directory.
- On Solaris x86 32-bit and Solaris SPARC 32-bit drivers, specify the `$SYBASE/`
  `$SYBASE_OCS/perl/sybaseperl_32/lib/lib: \ $SYBASE/`
  `$SYBASE_OCS/perl/sybaseperl_32/lib/arch` directory.
- On IBM AIX 32-bit, HP-UX Itanium 32-bit, and Linux on POWER 32-bit drivers
  specify the `$SYBASE/$SYBASE_OCS/perl/sybaseperl_32r/lib/lib:`
  `\ $SYBASE/$SYBASE_OCS/perl/sybaseperl_32r/lib/arch`
  directory.

4. Run the sample:

```
perl firstapp.pl
```

See the *Adaptive Server Enterprise Database Driver for PERL Programmers Guide* for more details.

Configuring the Components

Configure the SAP Open Client and SAP Open Server components.

- To configure each SAP Open Client and SAP Open Server component, follow the instructions in the *Open Client and SAP Open Server Configuration Guide for UNIX* platforms.
- To configure and use the SAP Adaptive Server extension module for Python, see the *Adaptive Server Enterprise Extension Module for Python Programmers Guide*.

- To configure and use the SAP Adaptive Server extension module for PHP, see the *Adaptive Server Enterprise Extension Module for PHP Programmers Guide*.
- To configure and use the SAP Adaptive Server database driver for Perl, see the *Adaptive Server Enterprise Database Driver for PERL Programmers Guide*.
- For SAP jConnect for JDBC 16.0, seeSAP jConnect for JDBC Installation Guide.

See also
- *SAP jConnect for JDBC* on page 28

Modifying Interfaces File Entries

Use the command line utility **dscp** or the X-Windows graphical tool **dsedit** to modify master and query server entries in the `interfaces` file and for the directory services you are using.

For information about **dscp** or **dsedit**, see the *Open Client and SAP Open Server Configuration Guide for UNIX*.

SAP jConnect for JDBC

Postinstallation tasks for SAP jConnect for JDBC 16.0.

Setting JDBC_HOME

JDBC_HOME represents the directory in which you install SAP jConnect.

Example:

If your installation directory is /opt/sybase, set the JDBC_HOME to:

```
/opt/sybase/jConnect-16_0
```

Setting the CLASSPATH
You need to set your CLASSPATH depending on which versions of Java or JDK and SAP jConnect you are using.

CLASSPATH is the location of the SAP jConnect runtime classes and the jar files for Java 6 or later.

Using SAP jConnect 16.0 with Java 6 or Later
Use SAP jConnect 16.0 with Java version 6 or later.

Add this path to the CLASSPATH environment variable:`$JDBC_HOME/classes/jconn4.jar`

Running Samples or TDS-Tunnelling Servlet

Run the samples or the TDS-tunnelling servlet using the CLASSPATH environment variable.

Add the CLASSPATH environment variable:`$JDBC_HOME/classes/jconn4.jar:`
`$JDBC_HOME/classes`

Note: SAP requires that you run Java 6 or later with SAP jConnect 16.0.

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

Firefox CLASSPATH Restriction

If you use Firefox, some restrictions may apply to the way you set your CLASSPATH environment variable.

The Java VM security manager does not allow a version of SAP jConnect installed in your local file system to create a connection to a server, even if the server is your local system. This can create a problem if you use Firefox to run an applet that uses SAP jConnect.

When Firefox needs to load SAP jConnect to create a connection to a server, it looks for a CLASSPATH defined in its environment to find the SAP jConnect classes. If it finds a CLASSPATH that you have defined to point to your local SAP jConnect installation, it loads SAP jConnect directly from the local file system—rather than from the server—and tries to create a connection. This generates a security error and the connection fails.

Do not set the CLASSPATH to the local SAP jConnect directory if you are using Firefox to run SAP jConnect applets.

Installing Stored Procedures

For SAP jConnect to function properly, you must install stored procedures and tables on the SAP Adaptive Server Enterprise or SAP SQL Anywhere database to which your application is connecting.

SAP jConnect includes these scripts for installing the required stored procedures and tables:

- `sql_server.sql` – installs stored procedures on SAP Adaptive Server earlier than version 12.0.
- `sql_server12.sql` – installs stored procedures on SAP Adaptive Server 12.0.x.
- `sql_server12.5.sql` – installs stored procedures on SAP Adaptive Server 12.5.x.
- `sql_server15.0.sql` – installs stored procedures on SAP Adaptive Server 15.0.x through 15.5.x.
- `sql_server15.7.sql` – installs stored procedures on SAP Adaptive Server 15.7 or later.
- `sql_server15.7.0.2.sql` – installs stored procedures on SAP Adaptive Server 15.7 ESD #2 or later.

- `sql_server16.0.sql` – installs stored procedures on SAP Adaptive Server 16.0.
- `sql_asa.sql` – installs stored procedures on SAP® SQL Anywhere® 9.x.
- `sql_asa10.sql` – installs stored procedures on SAP SQL Anywhere 10.x.
- `sql_asa11.sql` – installs stored procedures on SAP SQL Anywhere 11.x.
- `sql_asa12.sql` – installs stored procedures on SAP SQL Anywhere 12.x.
- `sql_asa16.sql` – installs stored procedures on the SAP SQL Anywhere database version 16.x.

Note: If you use SAP Adaptive Server 12.5.3 or later, or SAP Adaptive Server Anywhere 9.0.2 or later, the scripts come preinstalled on the server. Install these scripts only if you have a later version of the driver than the one that shipped with SAP Adaptive Server. In addition, for backward compatibility, `sql_server.sql` and `sql_server12.sql` are included on SAP Adaptive Server 11.9.2 and 12.0 respectively, although these versions are no longer supported.

Running Stored-Procedure Installation Scripts
Run stored procedure installation scripts.

1. Verify that your JAVA_HOME, JDBC_HOME, and CLASSPATH environment variables are set.
2. Use the **IsqlApp** sample application. For more information on **IsqlApp**, see *Installing Stored Procedures on Adaptive Server Database*.

Installing Stored Procedures on SAP Adaptive Server Database
Install stored procedures on SAP Adaptive Server database.
Go to the `$JDBC_HOME/classes` directory from the prompt window and enter:

- For SAP Adaptive Server Enterprise version 16.x:
  ```
  java IsqlApp -U sa -P password -S jdbc:sybase: Tds:
  [hostname]:[port] -I $JDBC_HOME/sp/sql_server16.0.sql -c go
  ```

Note: The sql script to be used is dependent on the SAP ASE version. See *Installing Stored Procedures* for a list of scripts available.

Installing Stored Procedures on SAP SQL Anywhere
Install stored procedures on a SAP SQL Anywhere or SAP 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
```

Note: The sql script to be used is dependent on the SAP ASE version. See *Installing Stored Procedures* for a list of scripts available.

Packages

Packages for SAP jConnect version 16.0.

These 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 SAP jConnect driver, **com.sybase.jdbc4.jdbc.SybDriver**, is located in the **com.sybase.jdbc4.jdbc** package.

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

Directories and Files

Contents of the `jconnect16_0` directory.

Name	Type	Description
classes	Subdirectory	Contains these SAP jConnect 7.0 components: • `jconn4.jar` file that contains SAP jConnect 7.0 classes • `sample2` subdirectory with SAP jConnect 7.0 class files for sample applets and applications • `gateway2` subdirectory for compiled TDS-tunnelling servlet
devclasses	Subdirectory	Contains the `jconn4d.jar` file that contains the same SAP jConnect 7.0 components as `jconn4.jar`, but debug mode is turned on.
docs	Subdirectory	Contains the: • `en` subdirectory, which contains the English javadoc documentation • `en/progref` subdirectory, which contains the *SAP jConnect for JDBC Programmers Reference* in HTML and PDF format • `en/installdocs` subdirectory, which contains the *SAP jConnect for JDBC Installation Guide* in HTML and PDF format

Name	Type	Description
`gateway2`	Subdirectory	Contains source code for the TDS-tunnelling servlet.
`sample2`	Subdirectory	Contains source code for sample Java applications.
`sp`	Subdirectory	Contains **isql** scripts that install stored procedures for function escapes and **DatabaseMetaData** methods on a database server. See *Installing Stored Procedures* for a list of scripts available.
`tools`	Subdirectory	Contains a perl script (`decode-tli`) that Microsoft Windows users can apply to parse a `sql.ini` file into a readable format.
`ne-timpct.gif`	Graphic file	Contains a SAP jConnect graphic.
`index.html`	HTML file	Contains links to SAP jConnect documentation and SAP jConnect samples.

See also
• *Installing Stored Procedures* on page 29

JDBC Samples and Specifications

You can find the JDBC samples and specifications supported for SAP Adaptive Server Enterprise in the *jConnect for JDBC Programmers Reference*.

Testing the SAP jConnect Installation

On installing the SAP jConnect, run the **Version** program to test the installation.

Note: The **Version** program connects to a demonstration database that SAP 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.

1. From the prompt window, change to the `JDBC_HOME` directory.
2. Verify that your CLASSPATH variable is set for running the sample programs (see *Setting the CLASSPATH* for details) and enter this 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. Example:

```
Using JDBC driver version 16.0
SAP jConnect (TM) for JDBC(TM)/16.0...
```

The output could be one of these:

- If the previous message appears in the Sample Output text box, you have successfully installed SAP 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 SAP 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"
```

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

See also
- *Setting the CLASSPATH* on page 28

Verifying the SAP jConnect Version

Verify the SAP jConnect version installed on the server.
Go to the `$JDBC_HOME/classes` directory at the prompt enter:

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

This command prints a version string:

```
jConnect (TM) for JDBC(TM)/16.0 GA (Build 27008)/P/EBF22326/JDK
1.6.0/jdbcmain/OPT/Sun Jan 12 09:41:12 PST 2014
```

Here, the version number is 16.0. The 5-digit number following the letters "EBF" indicates the exact version of SAP jConnect. This number increases as subsequent EBFs are released.

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

For upgrading SAP jConnect see Migrating jConnect Applications in the *SAP jConnect for JDBC Programmers Reference* for instructions.

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