

CHAPTER 3

Running and Connecting to a Database Server

About this chapter It is important that you get to know the basic components of Adaptive Server Anywhere. The sooner you feel at home using the software, the sooner you become fully productive. The database server is the central component of your database system.

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About the database server

The database server forms a communications channel and a manipulation device for the database. The database itself is a file on disk. The database server is the most important piece of Adaptive Server Anywhere, because it lets everything else happen.

Adaptive Server Anywhere comes with two versions of its database server. The first is called the **personal database server**. It can accept connections from applications or users running on the same machine. By contrast, the **network database server** also accepts connections from applications or users on other computers by means of the network which links the two machines. Apart from this difference, these two versions of the database server perform the same tasks and are virtually identical.

The database server allows access to databases and processes commands in a secure and efficient manner. All access to your database must be made through a database server. Only one database server at a time can manage a database.

The part of the server that performs all these functions is commonly called the **engine**. It does all the work in your database, much as the engine in your automobile makes everything go.

 For more information about the different versions of the database server, see "The Adaptive Server Anywhere database server" on page 13.

Starting the database server

This section describes how to start the database server running the sample database. How you do this depends on the operating system you are using.

Starting the sample database on Windows operating systems

❖ **To start the sample database, on Windows 95 or Windows NT:**

- ◆ Click Start on the Taskbar, and select Programs►Sybase►Adaptive Server Anywhere 6.0►Personal Server Sample.

This starts a personal server running the sample database. The server displays as an icon in the system tray, at the opposite end of the Taskbar from the Start button.

❖ **To start the sample database, on Windows 3.x or OS/2:**

- ◆ Open the Adaptive Server Anywhere program group, and double-click Personal Server Sample.

This starts a personal server running the sample database. The server displays as an icon at the bottom of your screen.

Behind the scenes

The command that is executed by carrying out these tasks is as follows:

```
path\exedir\dbeng6 -c 8M path\asademo.db
```

where *path* is your Adaptive Server Anywhere installation directory, and *exedir* is a subdirectory that holds the executables and other files for the operating system that you are using. The switch `-c 8M` makes a cache of 8 megabytes available for the server.

The **dbeng6** command starts the personal database server, and *asademo.db* is the sample database file.

You can start database servers by entering this command at a system command prompt. For Windows 3.1, you can run the command by choosing File►Run from Program Manager and typing the command.

For Windows 3.x, the executable name is *dbeng6w.exe* rather than *dbeng6.exe*.

Starting the sample database on UNIX

❖ **To start the sample database, on UNIX operating systems:**

- ◆ From a command line, type the following command:

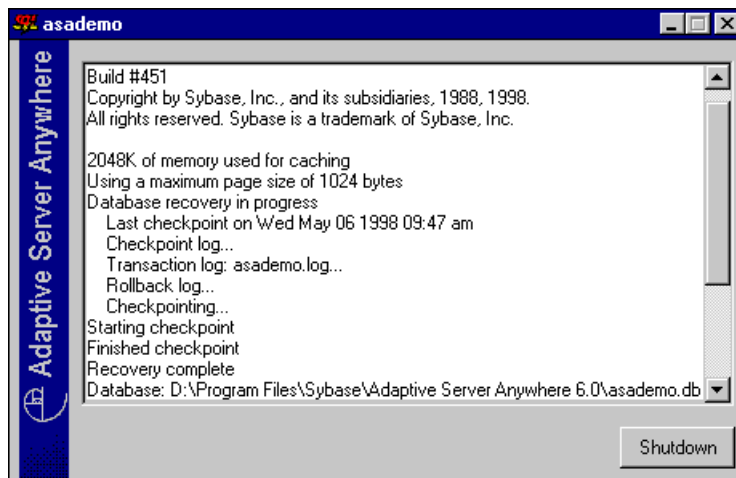
```
dbeng6 path/asademo.db
```

where *path* is the Adaptive Server Anywhere installation path.

Do not use the ampersand character to run the database server in the background. An alternative is to run the database as a daemon; to do this, use the `-gu` command-line option.

The server window

You can display the server window by double-clicking the Adaptive Server Anywhere icon in the system tray at the bottom of your screen.



The server window displays the following information:

- ◆ **The server name** The name in the title bar (in this case **asademo**) is the **server name**. This name is used by applications when they connect to a server.
- ◆ **Software information** The server window displays the version of the software, as well as copyright and licensing information.

- ◆ **Startup information** When a database server starts, it sets aside some memory that it uses when processing database requests. This is called the **cache**. The amount of cache memory is displayed in the window. The cache is organized in fixed-size **pages**, and the page size is also displayed in the window.
- ◆ **Database information** The names of the database files and its transaction log file are displayed in the window.

The startup cache size and page size are the default values. For many purposes, default startup options are fine. For more advanced use, you can provide explicit database server startup options.

☞ For information on using startup options, see "Running the Database Server" on page 3 of the book *Adaptive Server Anywhere User's Guide*. For a complete list of startup options, see "The database server" on page 12 of the book *Adaptive Server Anywhere Reference Manual*.

Connecting to the sample database from Interactive SQL

Once the database server is running, you can connect to it from an application. Here we connect to it from Interactive SQL.

❖ **To connect to the sample database from Interactive SQL:**

- 1 Ensure that the sample database is loaded on a running database, as described in. "Starting the database server" on page 33.
- 2 Start Interactive SQL.
 - ◆ In Windows 95 and Windows NT, select Start ► Programs ► Sybase ► Adaptive Server Anywhere 6.0 ► Interactive SQL.
 - ◆ In Windows 3.x and OS/2, select Interactive SQL from the Adaptive Server Anywhere 6.0 program group.
 - ◆ In UNIX operating systems, enter **dbisql** at the command line.

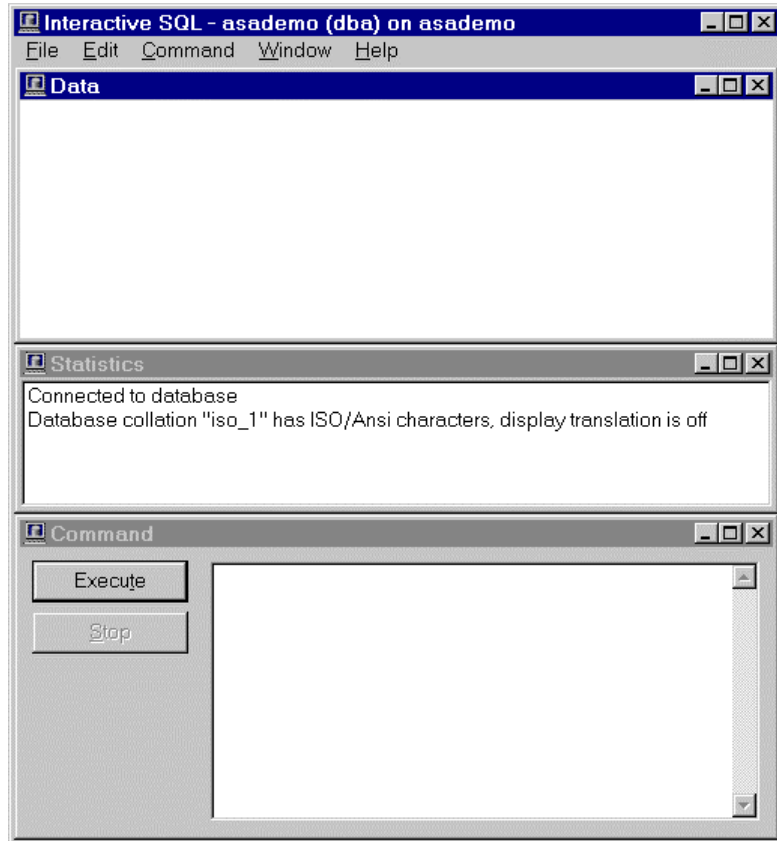
The Interactive SQL logon window is displayed. For Windows 95 and Windows NT it looks as follows. For other operating systems the appearance is slightly different.



- 3 Enter the user ID **DBA** and the password **SQL**. This is the default user ID and password for Adaptive Server Anywhere databases when they are created. The password does not appear when you type it. This prevents someone else from seeing your password. Click OK to connect to the sample database.
- 4 After connecting to the database, the Interactive SQL window appears.

Notes

- ◆ The Interactive SQL window displays the database name, user ID, and server name for the connection on the title bar. The words Connected to database appear in the Statistics window along with a message displaying the collation sequence used by the database.



Sending commands to the database

Once you are connected to the database, you can send commands to it. For example, type the following line in the Command window.

```
SELECT * FROM employee;
```

Notes

- ◆ The asterisk (*) in the query displays all the columns of the table named **employee**. This table contains information about the employees of a fictitious merchandising company.

Click Execute or press F9. Information similar to the following will appear in the Data window.

emp_id	manager_id	emp_fname	emp_lname
102	501	Fran	Whitney
105	501	Matthew	Cobb
129	902	Philip	Chin
148	1293	Julie	Jordan
160	501	Robert	Breault

Interactive SQL retrieves the information by sending a request to your database server. The server, in turn, looks up the information in the employee table and returns it to Interactive SQL.

Other applications connect to the database in much the same way. To make the connection, they must submit both a user ID and a password.

Using ODBC data sources to connect

The **Open Database Connectivity (ODBC)** interface is defined by Microsoft Corporation, and is a standard interface for connecting client applications to database management systems in the Windows and Windows NT environments. Connections are made by specifying connection parameters. It is often convenient to collect a set of connection parameters together and store them in an **ODBC data source**.

You can connect to Adaptive Server Anywhere databases using ODBC data sources from PowerDynamo, SQL Modeler, InfoMaker, and from all the Adaptive Server Anywhere utilities.

Connecting to the sample database

When you install Adaptive Server Anywhere, a sample ODBC data source is provided. You can use this to connect to the sample database. Here we show how to use it from Interactive SQL.

❖ **To connect to the sample database using an ODBC data source:**

- 1 Start Interactive SQL. For instructions, see "Connecting to the sample database from Interactive SQL" on page 36.
- 2 From the ODBC Data Source Name list, select ASA 6.0 Sample.
- 3 Click OK to connect.

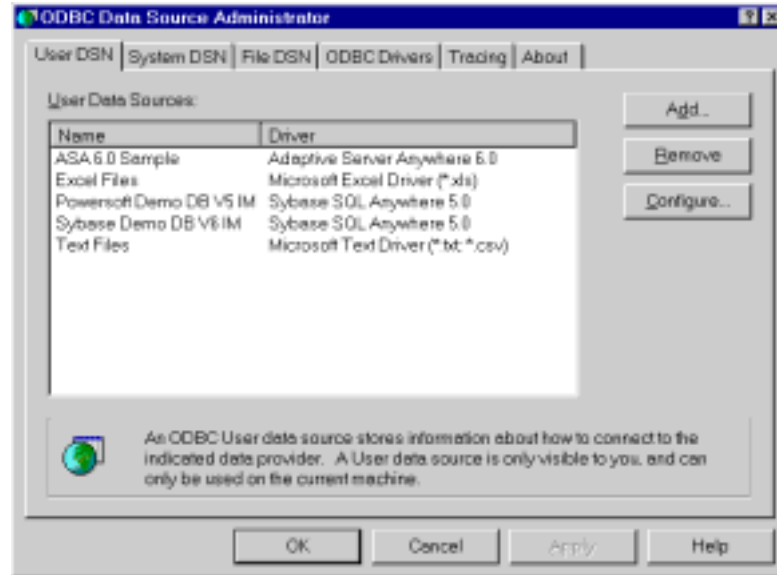
The ASA 6.0 Sample data source contains enough information to connect to the sample database whether or not the database server is running. You can try it both ways.

Creating data sources

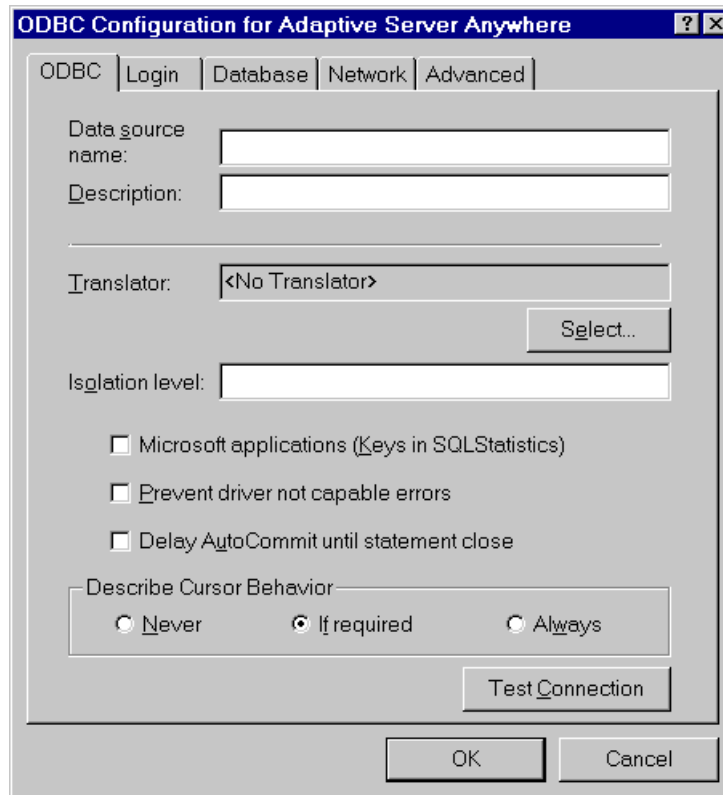
You can create data sources for your own database connections.

❖ **To create an ODBC data source:**

- 1 From the Start button, select Programs ► Sybase ► Adaptive Server Anywhere 6.0 ► ODBC Administrator. The ODBC Administrator window is displayed, showing a list of the data sources you currently have installed on your machine:



- 2 From the User DSN tab, click Add.
- 3 Select Adaptive Server Anywhere 6.0 from the list of drivers, and click Finish. The Adaptive Server Anywhere ODBC Configuration window is displayed.



Many of the fields in this window are optional. Click the question mark at the top right of the window and click an entry field to find more information about that field. For example, you may wish to just use the following parameters:

- ◆ **Data Source Name (ODBC tab)** This name appears in the list box. It can contain spaces, but should be short.
- ◆ **User ID (Login tab)** The database user ID you will use to connect.
- ◆ **Password (Login tab)** You should encrypt the password if there may be security concerns with having passwords stored on your machine.
- ◆ **Database File (Database tab)** You can select a database file by browsing your machine.

If you wish to use Java, you will need to also specify a Start line (Database tab) providing the executable name and a cache of at least 8 Mb:

```
dbeng6 -c 8M
```

- 4 When you have specified the parameters you need, click OK to close the window and create the data source.

☞ For a full description of database connections, see "Connecting to a Database" on page 31 of the book *Adaptive Server Anywhere User's Guide*.

☞ For more information about ODBC data sources, see "Working with ODBC data sources" on page 42 of the book *Adaptive Server Anywhere User's Guide*.

Shutting down a database server

You can now shut down the database server you started in previous sections.

❖ **To shut down the database server running the sample database:**

- 1 Double-click the icon in the Windows system tray to display the server window.
- 2 Click Shutdown. The windows close and the server stops.

Normally, you would not try to shut down a server while it is still connected to one or more clients. If you attempt to do so, you get a warning when you click the Shutdown button. If any connections have uncommitted transactions pending, they will be lost.

If you are running on UNIX, you can shut down the database server by pressing **q** in the console where you started the server.

