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**(a)Chapter 21**

**(b)Sitespring Under The Hood**

Sitespring was designed to be both intuitive to use and simple to maintain. It has achieved both of these goals quite well. Regardless of whether you're just curious, trying to debug a problem, or creating your own custom pages, there might come a time when you decide to pop the hood and take a look inside.

In this chapter, we take a tour of the various components of Sitespring. We show you how to do the following:

**\*\*\*BEGIN BULLETED LIST**

- [lb] Navigate the Sitespring installation directory
- [lb] Locate and interpret Sitespring's log and properties files
- [lb] Stop and start the Sitespring services
- [lb] View and query Sitespring's embedded database
- [lb] Work with Sitespring's embedded application server

**\*\*\*END BULLETED LIST**

### **(c) Sitespring Internals Overview**

Sitespring consists of two services: the Macromedia Sitespring service and the Macromedia Sitespring Versioning service. The Macromedia Sitespring service, as illustrated in Figure 21.1, contains Sitespring's functionality except for file versioning. In a way, you can view this service as a big wrapper. It controls the operation of the Macromedia JRun application server that runs the team member interface and the project site interface. It also controls the Sybase Adaptive Server Anywhere database that stores all the information used by Sitespring.

**\*\*\*INSERT FIGURE 21.1 21ISS01.AI OR 21ISS01.PDF – PLEASE CLEAN UP THIS ILLUSTRATION BEFORE INSERTING INTO BOOK\*\*\***

**Figure 21.1[em]An overview of the components of the Macromedia Sitespring service.**

The Macromedia Sitespring Versioning service is more focused. It controls Sitespring's transparent file versioning system and works in the background to create revisions of files when they're saved to shared folders.

The operation of both these services is covered later in this chapter.

### **(c) Sitespring Directory and File Locations**

So how do you open Sitespring's hood? You do it by taking a look at your installation directory. It's the first place to begin inspecting the components of the Sitespring system. By default, Sitespring installs into C:\Program Files\Macromedia\Sitespring. However, if you've customized your installation, Sitespring might be at a different location.

Let's take a look at your installation directory, which should be similar to the one shown in Figure 21.2.

**\*\*\*INSERT FIGURE 21.2 21ISS02.TIF – DO NOT CROP\*\*\***

**Figure 21.2[em]A view of the default Macromedia Sitespring installation directory.**

The Sitespring installation directory contains all the files required to run the Macromedia Sitespring and Macromedia Sitespring Versioning services, including the JRun application server and the Sybase database components. Table 21.1 provides a brief description of the contents of these directories.

*Table 21.1[em]Contents of the Sitespring Installation Directory*

Directory	Description
\Sitespring	The installation directory for Macromedia Sitespring
\Sitespring\bin	Sitespring binaries or executable files and related libraries, notably Sitespring.exe (the Macromedia Sitespring Service) and ArchiveService.exe (the Macromedia Sitespring Versioning service)
\Sitespring\db	Sitespring's embedded database, Sybase Adaptive Server Anywhere 7
\Sitespring\db\backup	Backup directory for Sitespring database files
\Sitespring\db\data	Sitespring database files: application.db (the actual database) and application.log (a log of database transactions)
\Sitespring\db\win32	Sitespring database server executable files and drivers used to stop and start the database and to issue interactive Structured Query Language (SQL) commands, notably dbsrv7.exe, dbstop.exe, and dbisqlc.exe
\Sitespring\JRun	Sitespring's embedded web server, a modified installation of Macromedia JRun 3.02
\Sitespring\JRun\bin	JRun server binaries or executable files, notably

	ntConsoleJava.exe
\Sitespring\JRun\connectors	JRun server connectors used to connect JRun with other web servers, such as Internet Server API (ISAPI) connectors connecting Microsoft Internet Information Server (IIS)
\Sitespring\JRun\docs	Limited documentation and license information for JRun and its components
\Sitespring\JRun\lib	JRun server library and property files that define default properties for all instances, notably the global.properties file
\Sitespring\JRun\servers	Contains the server root directories for Sitespring's two JRun instances
\Sitespring\JRun\servers\default	JRun server instance root for Sitespring's team member interface, which contains the local.properties file
\Sitespring\JRun\servers\lib	Additional JRun server libraries and Sitespring properties used by all instances
\Sitespring\JRun\servers\projectsite	JRun server instance root for Sitespring's project site interface, which contains the local.properties file
\Sitespring\JVM	Sitespring's embedded Java Virtual Machine (JVM), Sun Microsystems Java Run Time Environment (JRE) 1.3 with HotSpot

	Server VM2
\Sitespring\JVM\bin	JVM binaries and executable files, notably java.exe
\Sitespring\JVM\lib	JVM library and property files.
\Sitespring\logs	Log files for Sitespring and each of its JRun instances, notably sitespring.log, default-out.log, default-err.log, projectsite.log, projectsite-out.log, and projectsite-err.log
\Sitespring\ProjectSiteTemplates	Directories for the default project templates shipped with Sitespring, as well as any new project templates you create. Each template directory contains the Java Server Pages (JSP) files, images, and Flash files used to run the project site. In Sitespring 1.2, the Flash source files are also present.
\Sitespring\webapps	Contains the web application root directories for the Sitespring team member interface and the project site interface
\Sitespring\webapps\intranet-app	Web application root for Sitespring's team member interface
\Sitespring\webapps\intranet-app\common	Common application files for the Sitespring team member interface, such as

	JavaScript, Cascading Style Sheets (CSS), and Flash global navigation
\Sitespring\webapps\intranet-app\dist	Additional application installers distributed with Sitespring: Macromedia Flash 5 and Sitespring Helper (Mac and Windows versions both are included)
\Sitespring\webapps\intranet-app\docs	Documentation for Macromedia Sitespring, including Using Sitespring, Setting Up Sitespring, and the Quick Reference Guide in Adobe Acrobat PDF format
\Sitespring\webapps\intranet-app\files	Shockwave Flash files for the Sitespring File Explorer
\Sitespring\webapps\intranet-app\help	Sitespring's online help documentation and tutorials, as well as the About Sitespring development credits
\Sitespring\webapps\intranet-app\images	Images used throughout the pages of the Sitespring team member interface
\Sitespring\webapps\intranet-app\WEB-INF	The WEB-INF directory for the Sitespring team member interface, which contains the application's compiled JSP class files, tag library definition files, and properties files, notably properties.xml and web.xml
\Sitespring\webapps\intranet-app\welcome	Shockwave Flash files for the Welcome to Sitespring movie that

	appears during login
\Sitespring\webapps\projectsite-app	Web application root for the startup of Sitespring's project site interface
\Sitespring\webapps\projectsite-app\WEB-INF	The WEB-INF directory for the startup of the Sitespring project site interface, which contains properties files, notably web.xml
\Sitespring\webapps\projectsites	The actual application root for Sitespring's project site interface, which contains resources shared among project site templates
\Sitespring\webapps\projectsites\css	Contains the CSS used by the project site login and error pages
\Sitespring\webapps\projectsites\error	Contains the error pages used for the project sites
\Sitespring\webapps\projectsites\images	Contains shared images used by the project site login and error pages
\Sitespring\webapps\projectsites\login	Contains the login and login error pages used by the project sites.
\Sitespring\webapps\projectsites\WEB-INF	The WEB-INF directory for the actual Sitespring project site interface, which contains the application's compiled JSP class files and properties files, notably web.xml and webapp.properties

You'll need to navigate this directory structure if you want to view Sitespring's log files or edit Sitespring's properties files.

#### (d) Sitespring Log Files

If you're running into errors or other problems with Sitespring, you might want to turn to the application's log files to find out what's going on. Sitespring has eight log files that output informational messages and errors during the startup, running, and shutdown of its components. These log files are described in Table 21.2.

Table 21.2 Sitespring's Application Log Files

Log File	Description
\\Sitespring\\logs\\sitespring.log	The event log for the JRun server instance named sitespring (in the default directory), which serves the team member intranet-app web application
\\Sitespring\\logs\\projectsite.log	The event log for the JRun server instance named projectsite, which serves the client user projectsite-app and projectsites web applications
\\Sitespring\\logs\\default-err.log	The System.err log file for the sitespring (default) JRun server instance, which logs errors from the team member application
\\Sitespring\\logs\\projectsite-err.log	The System.err log file for the projectsite JRun server instance, which logs errors from the client user application
\\Sitespring\\logs\\default-out.log	The System.out log file for the sitespring (default) JRun server instance, which logs messages from the team member application
\\Sitespring\\logs\\projectsite-out.log	The System.out log file for the projectsite JRun server instance, which logs messages from the

	client user application
\\Sitespring\\logs\\revision_handoff.log	The Sitespring revision_handoff.log file, which logs milestone revisions to files being versioned by Sitespring
\\Sitespring\\db\\data\\application.log	The Sitespring database log file, which logs database connections and transactions for the Sybase database; needs to be translated to view it as a plain text file, as we'll show you later in this chapter

One common reason to look into the log files is to find out why Sitespring did not start up or is producing errors. For example, if the Sitespring team member interface does not start, you might want to take a look at the sitespring.log file and search for any Java exceptions or error messages, such as the one shown in Figure 21.3. In this figure, you can see information messages from JRun and other components, as well as one JRun error message with a Java exception.

**\*\*\*INSERT FIGURE 21.3 21ISS03.TIF – DO NOT CROP\*\*\***

**Figure 21.3[em]JRun messages and errors in sitespring.log.**

Similarly, if Sitespring isn't sending out email messages, you could take a look at the default-out.log file to see if there are any send mail Java exceptions, such as the one shown in Figure 21.4. In addition to the startup and shutdown messages shown in this file, there are a series of send mail Java exceptions indicating there was a problem sending mail.

**\*\*\*INSERT FIGURE 21.4 21ISS04.TIF – DO NOT CROP\*\*\***

**Figure 21.4[em]Send mail Java exceptions in default-out.log.**

In Figure 21.5, you can see a series of informational messages and another Java exception in default-err.log.

**\*\*\*INSERT FIGURE 21.5 21ISS05.TIF – DO NOT CROP\*\*\***

**Figure 21.5[em]A Java exception in default-err.log.**

If you want to see a record of all revisions that are created by the Macromedia Sitespring Versioning service, you can examine the contents of the `revision_handoff.log` file. As shown in Figure 21.6, you can see the initial revisions for some files in the Online Services Directory project site.

**\*\*\*INSERT FIGURE 21.6 21ISS06.TIF – DO NOT CROP\*\*\***

**Figure 21.6[em]File revisions in `revision_handoff.log`.**

The log file for the Sitespring database, which is called `application.log`, can be translated and then viewed to see a record of all database transactions. We show you how to translate this log file later on in this chapter. For now, you can see the contents of a translated `application.log` file in Figure 21.7. This sample shows some records being inserted into a monitored file table amid a series of database connections and transactions.

**\*\*\*INSERT FIGURE 21.7 21ISS07.TIF – DO NOT CROP\*\*\***

**Figure 21.7[em]A translated database log file.**

Even if you don't understand the meaning of these error messages, they might be valuable ammunition for Macromedia Sitespring support personnel. So at the very least, check out the log files for any suspicious messages and then email to the support personnel either the entire log file or just the relevant parts.

**\*\*\*BEGIN TIP**

[ic]Tip

If you're trying to debug a problem and want to see just about everything that's going on, you can change the log file settings to the ALL level. From the Administration page, go to System Configuration, click the Edit icon, and then change Log Level to ALL under Logging Configuration. You'll see every SQL query issued by the Sitespring application to the Sybase database, as well as other messages. However, this can be very verbose! All this information might make it difficult to spot the key messages, and your log files will grow rapidly.

**END TIP\*\*\***

#### **(d) Sitespring Configuration Files**

When you install Sitespring or edit the system configuration from the Administration page, you enter some information about your environment and installation preferences through a graphical or

web user interface. This information then is saved to the system registry, the Sitespring configuration files, or the Sitespring database. For the most part, you can configure this information through the provided user interfaces. However, if you're trying to do any customization or integration, you might need to edit the configuration files shown in Table 21.3.

*Table 21.3[em]Key Sitespring Configuration Files*

<b>Configuration File</b>	<b>Description</b>
\Sitespring\JRun\lib\global.properties	Contains configuration information for the application server and is where the Connectivity (JDBC) is configured to the Sitespring database.
\Sitespring\JRun\servers\default\local.properties	Contains configuration information for the (default) JRun server and overrides any global.properties; the server port, application directory files are configured.
\Sitespring\JRun\servers\projectsite\local.properties	Contains configuration information for the project site JRun server and overrides any global.properties; the server port, application directory files are configured.
\Sitespring\webapps\intranet-app\WEB-INF\properties.xml	The properties.xml file in the intranet-app application and is used to configure custom projects and tasks in Sitespring.
\Sitespring\webapps\projectsites\WEB-INF\web.xml	The web.xml configuration file for the project site application; is used to configure the authentication mechanism for the sites and is where the web.xml.master file is used to configure BASIC authentication.

One reason to edit a configuration file would be to add custom properties for projects or tasks, as described in Chapter 5, "Working With Projects," and Chapter 9, "Working With Tasks." Another would be to change the project site authentication mechanism from forms-based to basic, as covered in Chapter 15, "Customizing Project Sites." If you're daring, you might even be tweaking some of the settings for custom page development as described in the remaining chapters of the book.

### **(c)The Sitespring Services**

Sitespring as a whole consists of two services, the Macromedia Sitespring service and the Macromedia Sitespring Versioning service, as shown in Figure 21.8.

**\*\*\*INSERT FIGURE 21.8 21ISS08.TIF – OPTIONAL CROP TO SHOW JUST THE SERVICES WINDOW\*\*\***

**Figure 21.8[em]The Services Administrative tool on Windows 2000 shows the Macromedia Sitespring service and the Macromedia Sitespring Versioning service.**

All services are configured to run a specified command with some optional command-line parameters when they are started. The Macromedia Sitespring service is configured to execute the following command by default:

C:\Program Files\Macromedia\Sitespring\bin\Sitespring.exe -s "Macromedia Sitespring"

The Macromedia Sitespring Versioning service is configured to execute the following by default:

C:\Program Files\Macromedia\Sitespring\bin\ArchiveService.exe

Although the Macromedia Sitespring service has no dependencies, the Macromedia Sitespring Versioning service is dependant on the Filter services group and the Server (LanmanServer) and Workstation (LanmanWorkstation) services.

By default, both services are set to start automatically upon server boot. However, you might need to stop and start the services occasionally when editing certain configuration settings or debugging application problems.

### **(d)Stopping and Starting Sitespring**

To stop the Macromedia Sitespring service:

**\*\*\*BEGIN NUMBERED LIST**

1. Open the Services administration tool. On Windows 2000, go to the Start menu and select Settings and then Control Panel. Open Administrative Tools, and then open Services.
2. Select the Macromedia Sitespring service.
3. Click the Stop icon on the Services toolbar, and the service should stop, as shown in Figure 21.9.

**\*\*\*END NUMBERED LIST**

**\*\*\*INSERT FIGURE 21.9 21ISS09.TIF – OPTIONAL CROP TO SHOW THE ENTIRE SERVICES WINDOW AND THE STATUS WINDOW\*\*\***

**Figure 21.9[em]Stopping the Macromedia Sitespring service.**

To start the Macromedia Sitespring service:

**\*\*\*BEGIN NUMBERED LIST**

1. Open the Services Administration tool. On Windows 2000, go to the Start menu and select Settings and then Control Panel. Open Administrative Tools, and then open Services.
2. Select the Macromedia Sitespring service.
3. Click the Play icon on the Services toolbar, and the service should start, as shown in Figure 21.10.

**\*\*\*END NUMBERED LIST**

**\*\*\*INSERT FIGURE 21.10 21ISS10.TIF – DO NOW CROP\*\*\***

**Figure 21.10[em]Starting the Macromedia Sitespring service.**

**(d)Stopping and Starting Sitespring Versioning**

To stop the Macromedia Sitespring Versioning service:

**\*\*\*BEGIN NUMBERED LIST**

1. Open the Services Administration tool. On Windows 2000, go to the Start menu and select Settings and then Control

Panel. Open Administrative Tools, and then open Services.

2. Select the Macromedia Sitespring Versioning service.
3. Click the Stop icon on the Services toolbar, and the service should stop.

**\*\*\*END NUMBERED LIST**

To start the Macromedia Sitespring Versioning service:

**\*\*\*BEGIN NUMBERED LIST**

1. Open the Services Administration tool. On Windows 2000, go to the Start menu and select Settings and then Control Panel. Open Administrative Tools, and then open Services.
2. Select the Macromedia Sitespring Versioning service.
3. Click the Play icon on the Services toolbar, and the service should start.

**\*\*\*END NUMBERED LIST**

### **(c) Embedded Products**

When Macromedia created Sitespring, they used Sybase Adaptive Server Anywhere for the application's database and built it on the Macromedia JRun application server. Both products are embedded within Sitespring and exist within the confines of the Sitespring installation directory and the Sitespring registry elements. This prevents Sitespring's versions of these applications from conflicting with other installations of these applications on the same machine.

### **(d) Embedded Sybase Database**

Sitespring's embedded relational database is Sybase Adaptive Server Anywhere 7.0.2. Although designed to require no direct administration or user interaction, you might want to investigate the structure and contents of this database if you're doing any customization or integration work.

All the Sybase database files are contained within the \Sitespring\db directory. The actual database file is under \Sitespring\db\data and is called application.db. The transaction log for this database is application.log. The database executable itself is under \Sitespring\db\win32 and is called dbsrv7.exe, although you should not need to manually start the database.

Likewise, although you can stop the database through the dbstop.exe command, you should not need to do so.

JRun connects to the database using the Sybase jConnect 5.2 JDBC driver. By default, it connects as DBUSER to jdbc:sybase:Tds:servername:2500. During the installation of Sitespring, this username/password, JDBC driver, and connect string are all configured in the \Sitespring\JRun\lib\global.properties file as follows:

```
jdbc.sitespringdb.driver=com.sybase.jdbc2.jdbc.SybDriver  
jdbc.sitespringdb.url=jdbc:sybase:Tds:localhost:2500  
jdbc.sitespringdb.description=Macromedia Sitespring  
jdbc.sitespringdb.display-name=Macromedia Sitespring  
jdbc.sitespringdb.pooling=true  
jdbc.sitespringdb.timeout=10  
jdbc.sitespringdb.interval=60  
jdbc.sitespringdb.param.user=DBUSER  
jdbc.sitespringdb.param.SOLINITSTRING=SET OPTION allow_nulls_by_default = ON  
jdbc.sitespringdb.param.password=frc6r9ztj6kr  
jdbc.sitespringdb.maxUse=35
```

**\*\*\*BEGIN NOTE**

[ic]Note

The password for DBUSER is created when Sitespring is installed and varies from installation to installation. If you're importing a database from another install, you'll need to update your global.properties file with the appropriate password to successfully access the database.

**END NOTE\*\*\***

Backups of this database and transaction log are made daily and placed into the \Sitespring\db\backup directory.

**(e)Querying the Database with Interactive SQL**

Within the \Sitespring\db\win32 directory is the Sybase Interactive SQL client, called dbisqlc.exe. When you run Interactive SQL, you specify parameters to connect to the database and then can interact with it by issuing SQL commands to browse and even modify the database contents. See Exercise 21.1 to learn how to connect to the Sitespring database, and Exercise 21.2 to learn how to issue SQL commands.

**Exercise 21.1[em]Connecting to the Sitespring Database**

To connect to the Sitespring database:

**???BEGIN STEPS**

1. Run \Sitespring\db\win32\dbisqlc.exe.
2. On the Login tab of the Connect to Sybase Adaptive Server Anywhere dialog box, type **DBUSER** for the user ID and then type the password from the global.properties file. In our example, we'll type **frc6r9ztj6kr**, as shown in Figure 21.11.
3. On the Database tab, enter the path to the database for Database file. You can use the Browse button to locate this file. In our example, we'll type **C:\Program Files\Macromedia\Sitespring\db\data\application.db**, as shown in Figure 21.12.
4. Click OK and the Interactive SQL application should launch and connect to the Sitespring database.

**\*\*\*END STEPS**

**\*\*\*INSERT FIGURE 21.11 21ISS11.TIF – OPTIONAL CROP TO SHOW ONLY THE CONNECT TO WINDOW\*\*\***

**Figure 21.11[em]Entering the credentials for DBUSER to connect to the Sitespring database.**

**\*\*\*INSERT FIGURE 21.12 21ISS12.TIF – OPTIONAL CROP TO SHOW ONLY THE CONNECT TO WINDOW\*\*\***

**Figure 21.12[em]Selecting the application.db Sitespring database file to which we're about to connect.**

**Exercise 21.2[em]Issuing SQL Commands**

Now that we're connected to the Sitespring database, we can issue commands in SQL to browse the contents of the database. The Interactive SQL application is split into three windows: Data, Statistics, and Command. We'll issue our SQL commands in the Command window and see our results in the Data window.

To query the Sitespring database:

**\*\*\*BEGIN NUMBERED LIST**

1. Go to the Command window in the Interactive SQL application that's connected to the Sitespring database.

2. Enter an SQL query. In our example, we'll type **select \* from MM\_Project** to get a list of all project records in the Sitespring database.
3. Click Execute and the results should be shown in the Data window, as illustrated in Figure 21.13. You can use the scroll bar in the Data window to view information in all the columns of the MM\_Project table.

**\*\*\*END NUMBERED LIST**

**\*\*\*INSERT FIGURE 21.13 21ISS13.TIF – DO NOT CROP\*\*\***

**Figure 21.13[em]Querying the Sitespring database for a list of projects through the Interactive SQL window.**

The range of information you retrieve is limited only by your knowledge of SQL and the database schema, which we'll cover later in this chapter.

As an example of another query, if you wanted to find all users who work for Sierra Software Development, you would run the following query in the Command window, as shown in Figure 21.14:

```
select * from MM_User where company_MM = 'Sierra Software Development';
```

**\*\*\*INSERT FIGURE 21.14 21ISS14.TIF – DO NOT CROP\*\*\***

**Figure 21.14[em]Querying the Sitespring database for all users who work for Sierra Software Development.**

### **Exercise 21.3[em] Modifying the Sitespring Database with SQL**

Your interaction with the database is not limited to read-only operations. You can also modify information in the tables or add new records.

To modify data in the Sitespring database:

**\*\*\*BEGIN STEPS**

1. Go to the Command window in the Interactive SQL application that's connected to the Sitespring database.
2. Enter an SQL query. In our example, we'll type the following SQL to update all Sierra Software Development employees with our new fax number:

```
update MM_User
set fax_MM = '530-555-9012'
where company_MM = 'Sierra Software Development';
```

3. Click Execute and the results should be shown in the Data window, as illustrated in Figure 21.15. You can use the scroll bars in the Data window to view information in all the columns of the MM\_User table.

**\*\*\*END STEPS**

**\*\*\*INSERT FIGURE 21.15 21ISS15.TIF – DO NOT CROP\*\*\***

**Figure 21.15[em]Modifying the Sitespring database by updating the fax number for all users who work for Sierra Software Development.**

**\*\*\*BEGIN TIP**

[ic]Tip

Want to learn more about SQL? You can take the SQLCourse.com tutorial at <http://SQLCourse.com>. Numerous other tutorials and references are also available from [www.1001tutorials.com/sql/index.shtml](http://www.1001tutorials.com/sql/index.shtml).

If you have Sybase SQL Anywhere Studio, the application's documentation has good SQL reference documentation. You can access this by going to the Start Menu, selecting Programs, selecting Sybase SQL Anywhere 7, and selecting SQL Anywhere documentation. When the Help application opens, select ASA Reference and open Chapter 9, "SQL Statements."

**END TIP\*\*\***

**\*\*\*BEGIN NOTE**

[ic]Note

In addition to directly issuing SQL commands to query and modify the Sitespring database, you can develop custom applications that do the same based on business logic you define. We show you how to do this using Java Server Pages (JSP) in Chapter 22, "Developing Custom Pages." However, you could also use languages such as Cold Fusion or Active Server Pages (ASP) to do the same.

**END NOTE\*\*\***

## (e) Accessing the Schema with Sybase Central

You've now seen how you can query and modify the contents of the Sitespring database. For this to be useful, however, you need to know the schema or structure of the database. How do you find this out? One solution is to download an evaluation copy of Sybase SQL Anywhere Studio, which contains the Adaptive Server Anywhere database and Sybase Central, which has utilities that enable you to browse and modify the database schema, issue SQL commands, and translate the database log file.

### \*\*\*BEGIN NOTE

[ic]Note

An evaluation copy of Sybase SQL Anywhere Studio is available on the CD that came with this book. You can download a trial version of Sybase SQL Anywhere Studio (or Sybase Adaptive Server Anywhere) from [www.sybase.com/detail?id=1016644](http://www.sybase.com/detail?id=1016644). More information on the product is available here at [www.sybase.com/products/mobilewireless/anywhere](http://www.sybase.com/products/mobilewireless/anywhere). Note that these links may change, but if you click the Downloads link, select SQL Anywhere Studio from the Products list, and click Go, you should be able to find a current download link.

### Exercise 21.4[em]Connecting to the Sitespring Database

To connect to the Sitespring database using Sybase Central:

#### \*\*\*BEGIN STEPS

1. Open Sybase Central 4.0. On Windows 2000, go to the Start menu, select Programs, Sybase SQL Anywhere 7, and then Sybase Central 4.0. This opens Sybase Central Java Edition.
2. From the Sybase Central Java Edition application, select Tools and then Connect.
3. In the New Connection pop-up window, select Adaptive Server Anywhere 7, and then click OK.
4. On the Identification tab of the Connect dialog box, type **DBUSER** for the user ID and the password from `global.properties`. In our example, we'll type **frc6r9ztj6kr**, as shown in Figure 21.16.
5. On the Database tab, click the Find button to search for databases on the network. If this locates your server, select the server name in the Find Servers results text box, and then click OK, as shown in Figure 21.17. The database name should be in the format of *Sitespring-servername*.

6. If you don't find the database in step 5, manually enter the path to the database file. You can use the Browse button to locate this file. In our example, we'll type **C:\Program Files\Macromedia\Sitespring\db\data\application.db**.
7. Click OK to connect to the database. If you connect successfully, you should see the name of your database in the format of *Sitespring-servername* appear in the left pane of Sybase Central under Adaptive Server Anywhere 7.

**\*\*\*END STEPS**

**\*\*\*INSERT FIGURE 21.16 21ISS16.TIF – DO NOT CROP\*\*\***

**Figure 21.16[em]Entering the credentials for DBUSER to connect to the Sitespring database.**

**\*\*\*INSERT FIGURE 21.17 21ISS17.TIF – DO NOT CROP\*\*\***

**Figure 21.17[em]Finding the Sitespring database that we're about to connect to on the network.**

### **Exercise 21.5[em]Browsing the Database Schema**

To browse the schema of the Sitespring database using Sybase Central:

**\*\*\*BEGIN STEPS**

1. From the Sybase Central Java Edition application, click the plus icon to expand *Sitespring-servername* under Adaptive Server Anywhere 7.
2. Click the plus icon to expand application (DBUSER).
3. Click the plus icon to expand Tables.
4. Click the plus icon to expand MM\_Client.
5. Click Columns to bring up a list of all the columns or fields in the MM\_Client table, as shown in Figure 21.18. Here we see that id\_MM is the primary key and, along with name\_MM, that it is required. The remaining columns are all optional, although Sitespring fills in some of the following values when a client organization is created: persistTimestamp\_MM, createDate\_MM, Comment\_MM, address\_MM, URL\_MM, phone\_MM, and status\_MM. For each column, we can see the type of value it takes and the limits on size.

6. Explore the other tables and columns in the Sitespring database to get a feel for how the schema is structured and for how information is stored in the application.

**\*\*\*END STEPS**

**\*\*\*INSERT FIGURE 21.18 21ISS18.TIF – DO NOT CROP\*\*\***

**Figure 21.18** *Examining the columns within the MM\_Client table in the Sitespring database.*

Some of the table names in the Sitespring database schema are intuitive, and some are a little cryptic. Table 21.4 lists all the tables in the schema and provides a short summary of their contents.

*Table 21.4* Tables in Sitespring's Database Schema

<b>Database Table</b>	<b>Content</b>
MM_Archive	Snapshots of project files
MM_ArchivePolicyConfig	Revision clean-up wizard configuration information
MM_AssignmentHistory	Task assignments and reassignments, including assignment comments
MM_Client	Client organizations
MM_ClientSite	Project sites
MM_ContactListItem	Contacts published on project sites
MM_ContentItem	Linked content for tasks
MM_DateRange	Date ranges for task due date settings
MM_DocumentList	Document lists published on project sites
MM_DocumentListCategory	Document list categories, both system-supplied and custom
MM_DocumentListItem	Folders and files published in document lists on project

	sites
MM_DocumentListItemApprovalHistory	Approval tracking for folders and files published in document lists on project sites
MM_EventItem	Log of application events in Sitespring
MM_FilePatternAction	File extensions to be excluded from versioning
MM_GlobalSetting	Some global configuration settings for Sitespring
MM_License	License information
MM_ModificationHistory	Log of when objects in Sitespring were modified
MM_ModuleVisibility	The visibility of project site modules
MM_MonitoredFile	Revision information on files monitored by Sitespring
MM_MonitoredTree	Shared folders monitored by Sitespring
MM_OfflineArchive	Sitespring's offline archive.
MM_Priority	Project and task priority settings with sort values
MM_Project	Sitespring projects
MM_Root	Folders used as roots in the File Explorer
MM_SavedSearch	Reports that have been saved
MM_SchemaVersion	Version of the Sitespring database schema
MM_Sequence	Sequence numbers for objects in Sitespring
MM_Status	Status values for projects and tasks, both system-supplied and custom

MM_Task	Sitespring tasks
MM_TaskToContentItem	Maps tasks to linked content
MM_ThreadItem	Posts to discussion topics
MM_ThreadTopic	Discussion topics
MM_User	Team and client users
MM_UserPreference	User preferences and notification settings
MM_UserToClient	Mappings of client users to client organizations
MM_UserToClientSite	Client users granted access to a project site
MM_UserToProject	Mappings of team members to project teams

**(e) Translating the Database Log File**

The database transaction log file logs all connections and transactions in the Sybase Adaptive Server Anywhere database. It is located in \Sitespring\db\data and is called application.log.

If you are experiencing difficulties with the Sitespring database (either from the Sitespring application pages or any custom JSP pages you've developed, as described in Chapter 22), or if you're just plain curious, you might want to take a look at this file to see what's going on. To view the application.log file, you need to translate it into a human-readable text format. Sybase Central has a tool that helps us to do the translation.

To translate the application.log file:

**\*\*\*BEGIN NUMBERED LIST**

1. Stop the Macromedia Sitespring service, as described earlier in this chapter.
2. From the Sybase Central Java Edition application, click Tools, select Adaptive Server Anywhere 7, and then select Translate Log, as shown in Figure 21.19.
3. In the Translate an Adaptive Server Anywhere Transaction Log window, type the path to the application.log file or select Browse to find it. In our example, we'll type **C:\Program**

**Files\Macromedia\Sitespring\db\data\application.log.**  
Click Next.

4. Type the path and filename for the new file you want to create with the translated log's contents. In our example, we'll type **C:\Program Files\Macromedia\Sitespring\db\data\application.txt.** Click Finish.
5. If there were no problems, you should get a message saying the file was successfully translated. You then can open this file in a text editor, as shown previously in Figure 21.7.

**\*\*\*END NUMBERED LIST**

**\*\*\*INSERT FIGURE 21.19 21ISS19.TIF – DO NOT CROP\*\*\***

**Figure 21.19** Opening the log translator from Sybase Central Java Edition.

#### **(d) Embedded JRun Application Server**

Sitespring's embedded application server is Macromedia JRun 3.02. Just like the database, the application server was designed to require no direct administration or user interaction. However, you might want to investigate files in the JRun directory structure if you're doing any customization or integration work.

All the JRun application server files are contained within the \Sitespring\JRun directory. If you've worked with JRun before, some of these directories should be familiar to you as the Sitespring installation is really just a partial install of JRun that's been slightly customized. We've already described the contents of some of these directories and files in Tables 21.1 through 21.3. Table 21.5 shows how the default JRun directory structure differs from the Sitespring embedded JRun directory structure.

*Table 21.5* A Standard JRun Installation Compared to the Sitespring Embedded JRun Installation

<b>Directory</b>	<b>Present in JRun Enterprise?</b>	<b>Present in Sitespring's Embedded JRun?</b>	<b>Notes on Differences</b>
\JRun\bin	Yes	Yes	Different names are used for the server executables. Sitespring JRun's ntConsoleJava.exe is 1

			the standard JRun dontdiejava.exe.
\JRun\connectors	Yes	Yes	Sitespring's JRun has limited set of connect that are used only for
\JRun\docs	Yes	Yes	Sitespring's JRun does have any of the standa JRun product documenta only license informati
\JRun\lib	Yes	Yes	Sitespring's JRun has limited set of Java li and property files.
\JRun\logs	Yes	No	Sitespring's JRun has different log filename lacks the admin logs.
\JRun\pointbase	Yes	No	Sitespring's JRun does have the PointBase ser database.
\JRun\samples	Yes	No	Sitespring's JRun does ship with any sample applications.
\JRun\servers	Yes	Yes	Sitespring's JRun does have the admin server, a modified default ser and has an additional project site server.
\JRun\servers\admin	Yes	No	Sitespring's JRun does have the JRun Manageme Console (JMC) administration console
\JRun\servers\default	Yes	Yes	Sitespring's JRun has modified default serve serve the team member interface.
\JRun\servers\lib	Yes	Yes	Sitespring's JRun has application-specific libraries.
\JRun\servers\projects ite	No	Yes	Sitespring's JRun has server for Sitespring' client user interface

			project sites.
\JRun\servlets	Yes	No	Sitespring's JRun does have the servlets directory.
\JRun\uninst	Yes	No	Sitespring's JRun does have the uninstall or directory.

Sitespring's embedded JRun is basically a bare-bones version of JRun with just enough components to serve the Sitespring applications. There is no JRun Management Console to administer the servers through a web-based graphical user interface (GUI), for example. All configuration and management must be done through the property files.

Sitespring's embedded JRun is also preconfigured to run the Sitespring applications. As such, you'll notice many edits to the JRun property files and some major differences in the behavior of JRun's default server. For example, the JSP handler was changed from JSPServlet to JSPRuntime. This change enables Macromedia to ship all the Sitespring JSP pages as precompiled class files, and it prevents the execution of any new uncompiled JSP pages.

### **(c) Summary**

So how did you like your tour under the hood of Sitespring? You've learned quite a bit about how Sitespring is structured, both at the file system level and at the database level. You've learned how to navigate the installation directory, interpret the log files, stop and start the services, query and modify the database contents, and view and modify the database schema. Now that we've laid down this technical foundation, it's time to develop your own custom JSP pages in the next chapter. Wipe the grease off your hands and get ready to program!

**\*\*\*END CHAPTER**