

CHAPTER 5

Configuring the Server(s)

Introduction

In Chapter 1, “How Web Publishing Works,” I recommended that you rent a web server when you are getting started with web publishing. If you really want the behind-the-scenes stuff to be taken care of by experts, you can take things one step further and rent a web server that specifically supports FileMaker hosting.

These specialized types of hosting companies are referred to as “FileMaker Hosting Providers.” Because they are not as common as typical web hosting providers, they can be a bit more expensive. However, using a FileMaker Hosting Provider has a couple of big advantages:

- ▶ You don’t have to buy the FileMaker Server (FMS) software.
- ▶ You don’t have to worry about administering the server machine.
- ▶ Their uptime and performance will probably be better than anything you could provide with your own machine.

This is a great option for people who just want to create files, upload them, and forget about it. However, if you are more hands-on and want to get under the hood, you probably ought to pony up for FMS and maintain your own machine (or machines, as we’ll see shortly).

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- ▶ Overview of Machine Configuration Options
- ▶ Installing and Configuring FileMaker Server
- ▶ Testing Your Installation
- ▶ Hosting Your File
- ▶ PHP Site Assistant

NOTE

If you do rent a web server, be sure to talk to your provider about whether or not you will be sharing disk space with its other customers. Depending on the sensitivity or your data, you might want to consider paying for a dedicated server.

Overview of Machine Configuration Options

There are three main components to consider when working with FileMaker Server as a website back end:

- ▶ **Database Server**—Hosts the FileMaker files.
- ▶ **Web Server**—Handles the browser requests.
- ▶ **Web Publishing Engine (WPE)**—Acts as the translator between the Web Server and the Database Server.

These three components can be installed on one, two, or three machines, as follows:

- ▶ **Single Machine**—Database Server, Web Server, and WPE on a single machine
- ▶ **Two Machines**—Database Server on one machine and Web Server and WPE on another machine
- ▶ **Two Machines (Alternative)**—Database Server and WPE on one machine and the Web Server on another machine
- ▶ **Three Machines**—Database Server on one machine, WPE on a second machine, and Web Server on a third machine

There are a number of considerations when deciding on a machine configuration:

- ▶ Single Machine allows for very fast communication between the three components, but puts a heavy load on the processor. Also, it means that you have a single point of failure. With a multiple machine configuration, you can reboot your web server without affecting clients connecting to the database with FMP.
- ▶ Two Machines spreads out the processor load and separates the website load from the FileMaker Pro client connections. If you have a lot of FileMaker Pro client activity, and a lot of web activity, this might be a good option. However, the communication between the WPE and FMS could be a bottleneck if the connection speed is lacking.
- ▶ Two Machines (Alternative) moves the WPE to the FMS machine, which means that web requests to the database could impact your FMP clients more so than the regular Two Machines configuration.

- ▶ Three Machines spreads out the processor load the most, but a slow connection between any of the machines can cause performance problems. Also, there is the obvious expense of the three machines.

Only you can decide which machine configuration is best for you, but here are some thoughts that might help:

- ▶ If you are not sure which option is best for you, go with the easiest and least expensive. You can always ramp up if you find that performance or stability is lacking.
- ▶ For development purposes, I am a big fan of the Single Machine configuration. I just install everything on my laptop and I am good to go, even without a network connection.

Installing and Configuring FileMaker Server

This installation process is pretty straightforward—you just insert the disk, launch the installer, and follow the instructions. However, there are a couple of options depending on which machine configuration you are planning to use.

NOTE

If you have a previous version of FMS installed, there are a few things that you should do prior to installation:

1. Uninstall any previous version of FMS.
2. On your web server machine, revert your `httpd.conf` file to its default state.
3. Restart your machine (or machines).

After you read and agree to the software license agreement, you will be asked to decide between a single or multiple machine configuration (see Figure 5.1).

If you select Single Machine and click Next, you will then be asked to enter your name, organization, and your license key. Then, you click the Install button and sit back. The installation can take a few minutes—there are more than 6,000 files that need to be created on your hard drive.

If you opt for a Multiple Machines install, you will be presented with an additional screen asking whether this particular installation is the Master machine, or a Worker machine (see Figure 5.2). The master machine is the one on which your FileMaker files will be hosted, and might or might not be running the WPE. The worker machine is the one running the WPE, the web server, or both.

NOTE

If you are planning a multiple machine installation, I recommend doing the installs on the worker machine or machines first, and the master machine (the Database Server) last.

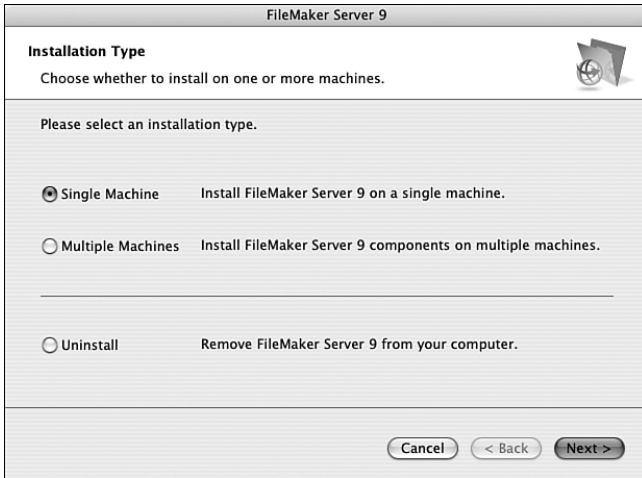


FIGURE 5.1 The FileMaker Server installer prompts you to specify the number of machines for the installation.

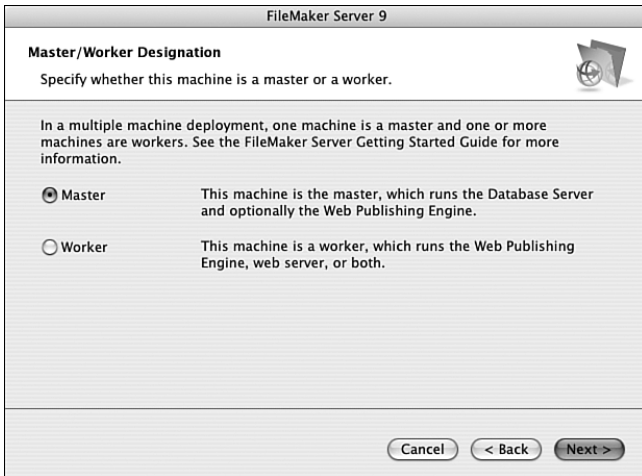


FIGURE 5.2 For a multiple machine installation, you are asked to specify whether this is the master machine or a worker machine. The master machine is the one that will actually host the database files.

If you select Master and click Next, you are prompted to enter your name, organization, and your license key. If you select Worker and click Next, the installer does not prompt you for any information and just proceeds with the installation.

After the FMS install is complete (either the Single Machine or Master Machine), the installer asks you whether you want to deploy FileMaker Server. You can opt to continue, which will launch the Deployment Assistant, or you can quit to leave the installer.

Click Continue to launch the Deployment Assistant. The server prelaunch page opens in a browser (see Figure 5.3). After a minute or so, the page updates and tells you that the Admin Console is starting. Be patient while this process completes. It can take several minutes.



FIGURE 5.3 The Admin Console Start Page appears automatically after the installation of the Database Server.

A file named `admin_console_init_webstart.jnlp` will be downloaded to your default download directory. It is a Java Web Start application that kicks off the initial launch of the Admin Console and the Deployment Assistant. In another minute or so, you will be presented with the first page of the five-page Deployment Assistant (see Figure 5.4) and walked through the following steps.

NOTE

Some browser configurations can prevent the `jnlp` file from launching automatically after download. If nothing seems to happen, you can just manually launch the `jnlp` file by double-clicking it.

- ▶ **Page 1**—Specify a username and password that will be used to open the Admin Console.
- ▶ **Page 2**—Specify a name and other optional information about this FMS installation. The server name that you choose is what will appear in the Open Remote dialog box for FileMaker Pro users.
- ▶ **Page 3**—Specify whether you want to allow clients to connect to your FileMaker database via ODBC. This is only available with FileMaker Server Advanced.
- ▶ **Page 4**—Specify whether you want to enable web publishing. You should select Yes on this page.

- ▶ **Page 4, part 2**—Specify which web technologies you want to enable. For now, you just need to enable PHP. Under the PHP option, you need to choose whether to use FileMaker Server’s version or not. You will probably want to use FileMaker’s version, unless you have your own customized version of PHP installed. (Note that Instant Web Publishing is only available with FileMaker Server Advanced.)
- ▶ **Page 4, part 3**—Select a web server. In most cases, there will only be one web server option. If there is more than one, specify your selection.
- ▶ **Page 5**—A summary of your deployment. Click Finish to close the Deployment Assistant. You will be asked to stand by while the deployment is executed.

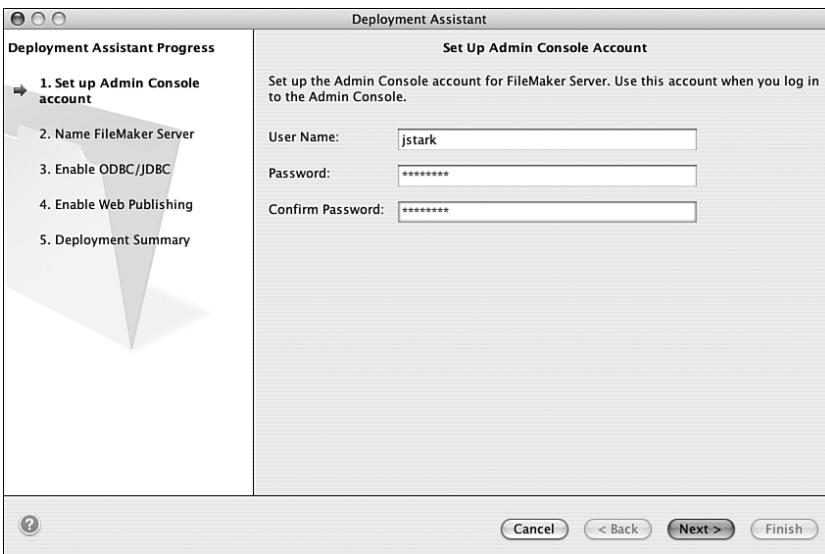


FIGURE 5.4 This is the first page of the Deployment Assistant that launches after your initial install of the Database Server.

When the deployment process completes, you will see the FileMaker Server Admin Console Welcome dialog box (see Figure 5.5). Click the OK button to dismiss the dialog box.

You will be presented with the Overview page of the FileMaker Server Admin Console (see Figure 5.6). The overview page gives you a quick view into the status of the server. There should be three green circles in the center area—one each next to the Web Server, the Web Publishing Engine, and the Database Server.

NOTE

Note that in the lower-right area of the screen is a link to the Deployment Assistant, where you can modify your deployment options should you change your mind in the future.



FIGURE 5.5 The Admin Console Welcome dialog box allows you to register your server or open the technology tests page. You can easily access these options from the Admin Console later, if you want.

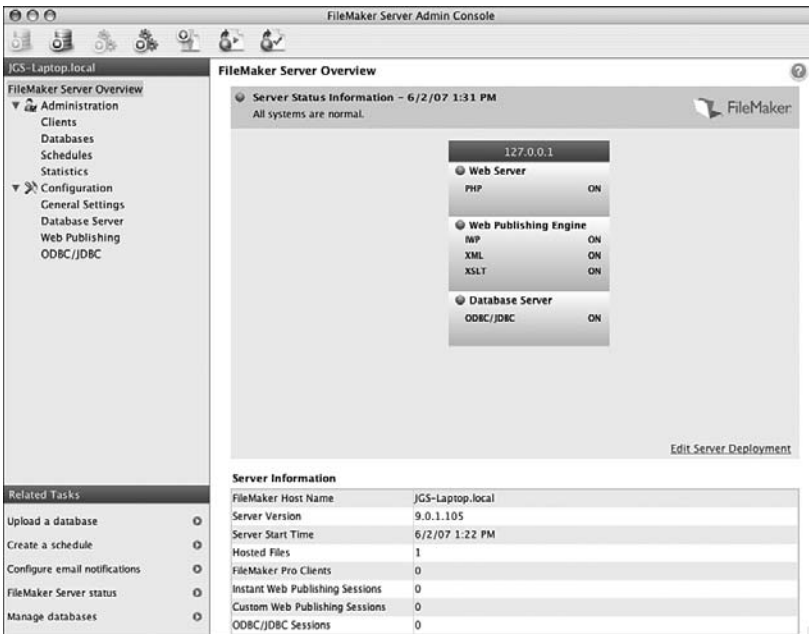


FIGURE 5.6 The Admin Console Overview page gives you a quick view into the status of the server.

NOTE

If you are familiar with previous versions of FMS, you are in for a number of big—and pleasant—surprises with FMS 9, particularly with regard to the new Admin Console:

- ▶ All aspects of FMS can be administered from a single interface (the Server Admin Tool and the Web Publishing Admin Console have been combined).

- ▶ The interface is identical on both Mac and Windows.
- ▶ The server can be administered from any machine with a network connection—no prior installations necessary.
- ▶ You can upload FileMaker files to the server through the Admin Console.
- ▶ FileMaker scripts can be scheduled to run in the background.
- ▶ Backup schedules are automatically created by default.
- ▶ Backup files are scanned to ensure that they are not corrupt.
- ▶ You can set up email notifications for server warnings and errors.

There are an enormous number of configuration options in the Admin Console, but, in most cases, the default configuration should serve you just fine. Still, there are a few things you should be familiar with if you are administering the FMS machine.

Administration: Clients

This page allows you to disconnect or send a message to an individual client or all clients of the server. The tabs at the lower portion of the page alternately provide information about which databases the selected client has open, or details about the selected client (see Figure 5.7).

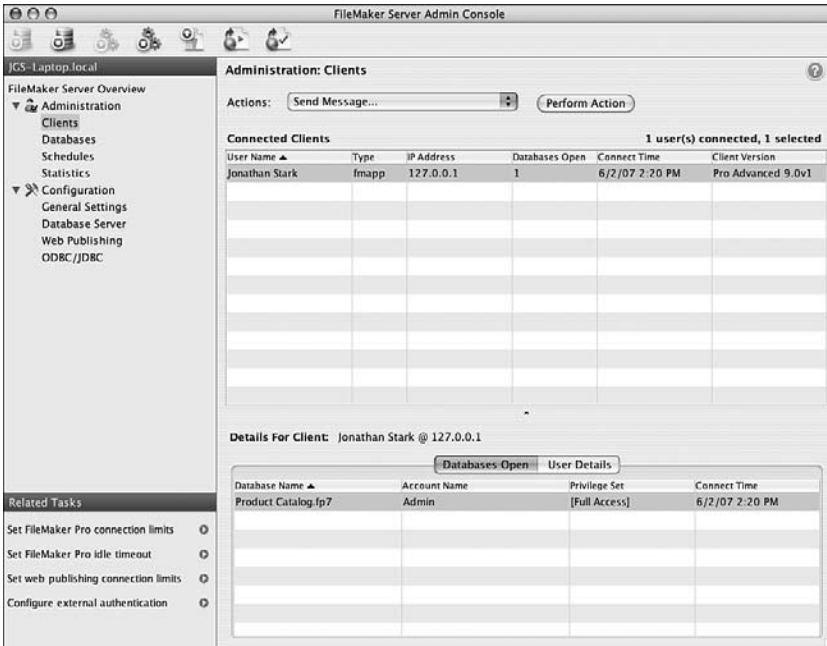


FIGURE 5.7 The Administration: Clients page of the Admin Console allows you to see who is connected to what. You can then send messages to, or disconnect one or all clients, from this page.

Administration: Databases

This page displays a list of databases hosted on your server. Using the Actions menu, you can opt to Open, Close, Pause, Resume, Upload, or Remove one or all databases. You can also send a message to the FileMaker Pro clients of one or all databases (see Figure 5.8).

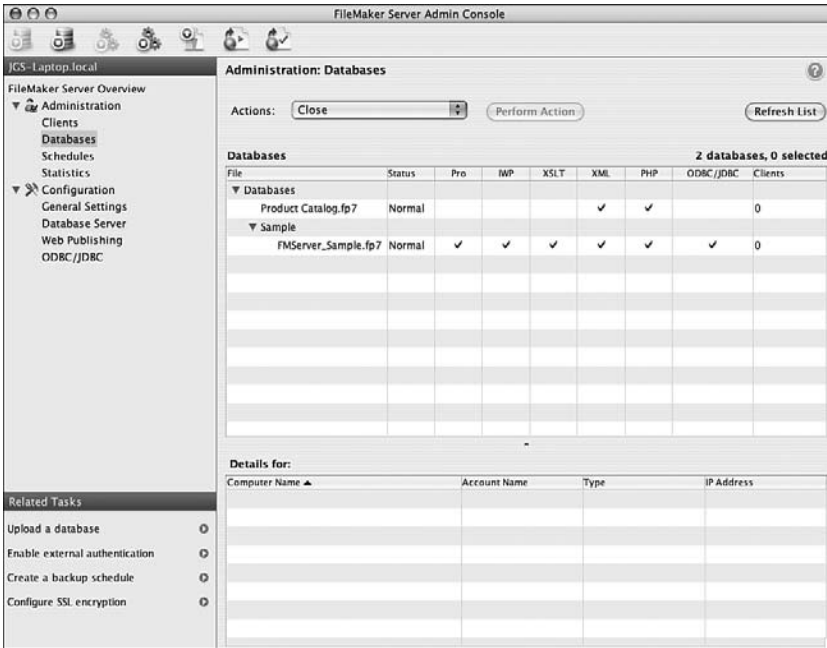


FIGURE 5.8 The Administration: Databases page of the Admin Console displays which databases are on the server, their status, what types of connections are allowed, and which clients are connected to each file, if any.

NOTE

In previous versions of FileMaker Server, it was possible to manually copy a file to the server that did not have the fmapp extended privilege enabled, meaning that you could effectively host a file that you couldn't access with FileMaker Pro. When using the Upload feature of FMS 9, the file is now checked for this issue. If the fmapp extended privilege is missing from all privilege sets, it is automatically assigned to the Full Access privilege set. An additional improvement over previous versions of FMS is that the file system permissions on the uploaded file are now set appropriately. Previously, this was a manual operation on the Mac platform.

Administration: Schedules

This page allows you to specify automated tasks. There are three types of scheduled actions supported:

- ▶ Back Up Databases
- ▶ Run a Script (executes a shell script, batch file, or FileMaker script)
- ▶ Send a Message (sends a message to connected FMP users)

By default, three backup schedules are created when you install FMS—Daily, Hourly, and Weekly—but only Daily is enabled (see Figure 5.9).

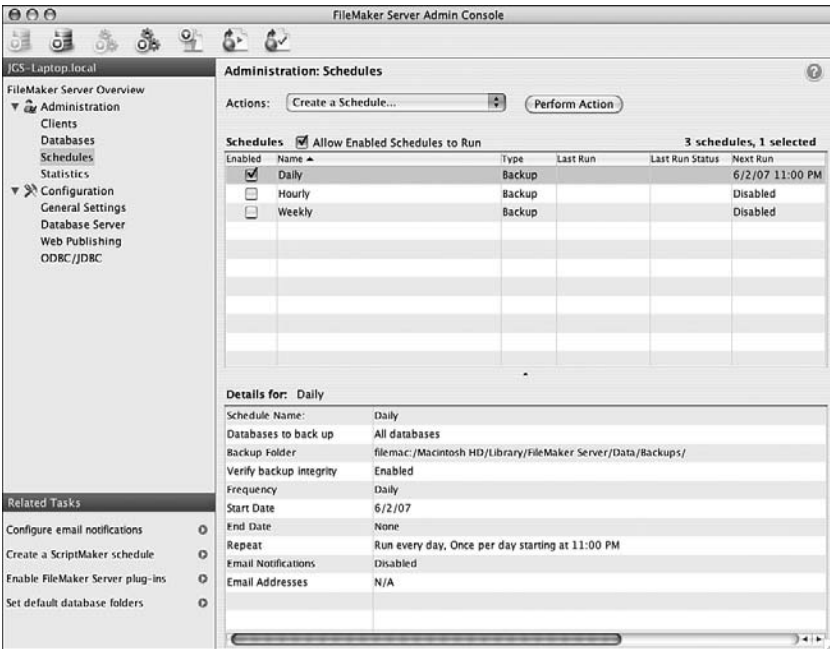


FIGURE 5.9 The Administration: Schedules page of the Admin Console shows you what automated tasks have been scheduled, what type they are, whether they are enabled, and when they are going to run next, among other things.

NOTE

The ability to run a FileMaker script is a new—and welcome—feature. It allows you to select a script from one of the host files to run at a specified time. Writing FileMaker scripts is not a topic covered in this book, but if you are already familiar with the concept, this is a great feature. (Note that only web-compatible script steps are supported.)

Testing Your Installation

After you are satisfied with your installation and configuration, you can test FileMaker Server as follows:

1. Select the Open Test Page option from the Server menu of the Admin Console. A browser window should open to the FileMaker Server Technology Test page. There are up to four active links on the test page, depending on whether you have FileMaker Server or FileMaker Server Advanced installed. In this case, we want to test FileMaker Pro and PHP Custom Web Publishing.
2. If you have multiple versions of FileMaker Pro installed, make sure only FMP 9 is running.
3. Click the Test FileMaker Pro link. The `FMServer_Sample.fp7` file should open in FMP 9.
4. Click the Test PHP Custom Web Publishing link. A new browser window should open displaying a list of records from the `FMServer_Sample.fp7` database. There will also be a green circle on the page indicating that the test was successful. If the test failed, the circle would be red.

If either of the tests fail, navigate to the Administration: Databases screen and confirm that the `FMServer_Sample.fp7` is open. If it is open, stop and restart the database server. If your test still fails, restart the machine and try again. If that still doesn't work, call me at home and I'll fix it. Uh...just kidding.

Hosting Your File

Now we are ready to upload the `Product Catalog.fp7` file to the Database Server.

1. Navigate to the Administration: Databases screen in the Admin Console.
2. Select Upload from the Actions menu and click the Perform Action button.
3. Follow the instructions in the Upload Database Assistant to select the `Product Catalog.fp7` file and upload it to the server (see Figures 5.10 through 5.14).

After this process is completed, you should see the `Product Catalog.fp7` file in the list of databases.

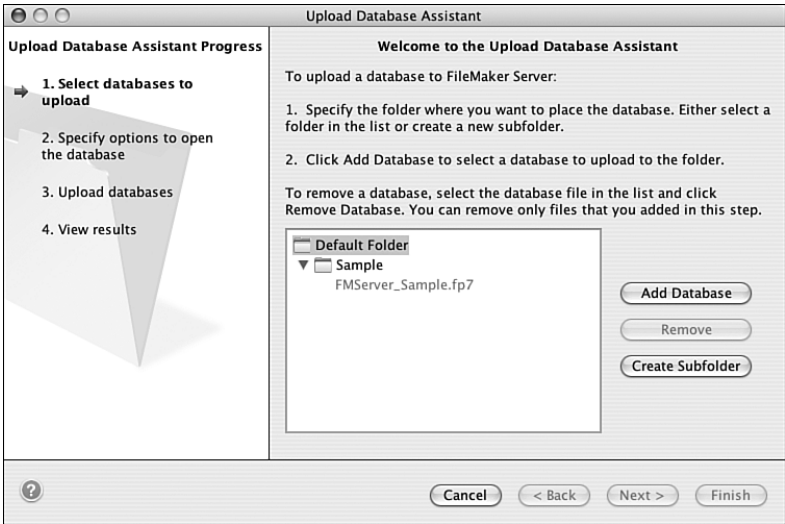


FIGURE 5.10 After launching the Upload Assistant, click the Add Database button.

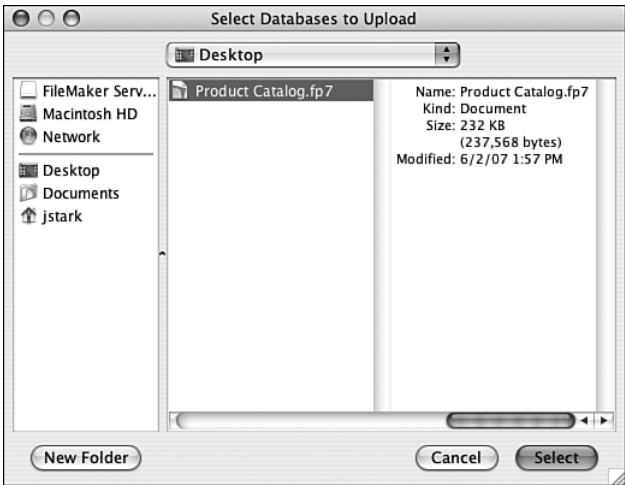


FIGURE 5.11 You will be asked to select a database to upload.

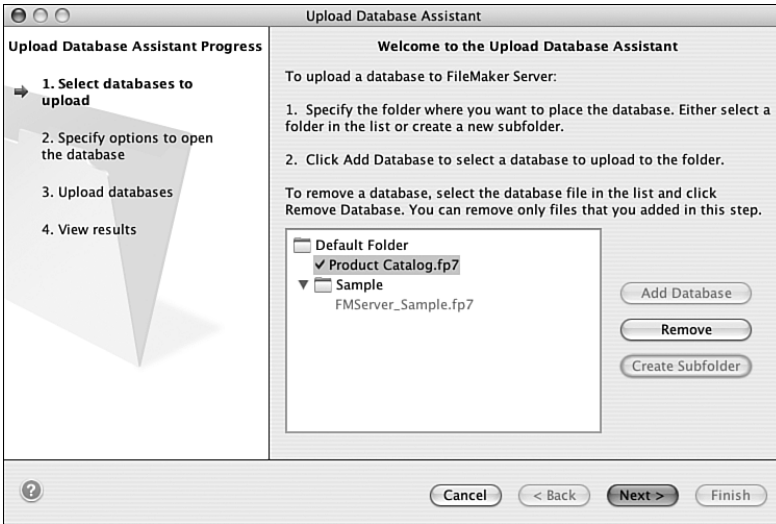


FIGURE 5.12 After the database is selected, it will appear in the list. Click the Next button to upload the file.

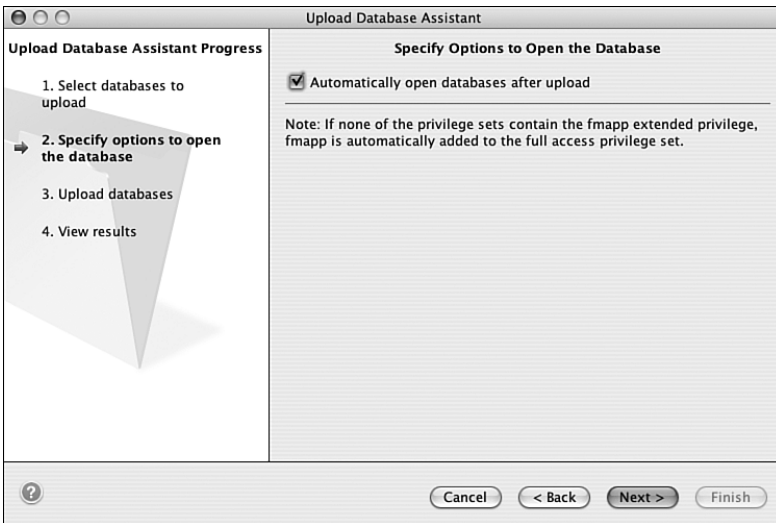


FIGURE 5.13 You can opt to open the file after upload, or not. Note that the fmapp extended privilege will be added to the Full Access privilege set if it is not enabled for any privilege sets.

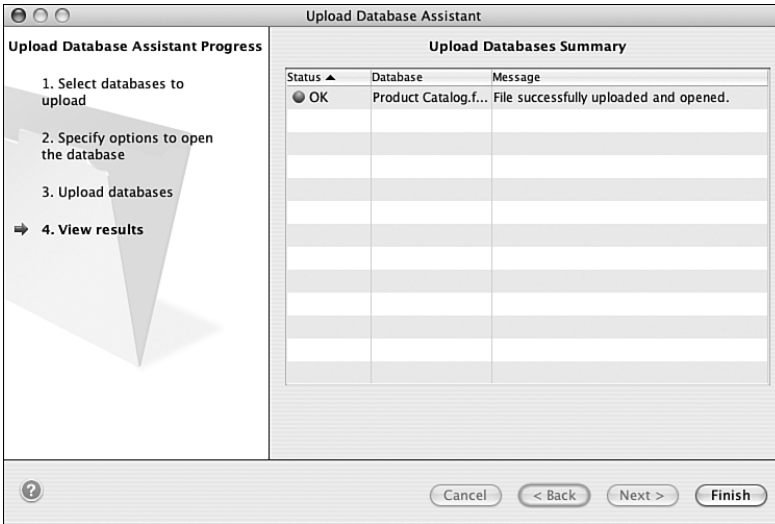


FIGURE 5.14 Success! The Product Catalog file was uploaded and is showing an OK status in the Upload Databases Summary dialog box.

PHP Site Assistant

New to FileMaker Server 9 is a snazzy little tool called the PHP Site Assistant (PHPSA). The PHPSA walks you through a wizard-type interface and ultimately outputs basic PHP pages that allow you to interact with your FileMaker database.

These pages are normal text documents that you can manually customize to your needs. Even after you are comfortable coding PHP from scratch (which we get into in the next section), the PHPSA is a powerful resource that can get you up and running in a pinch, give your “from scratch” site a head start, or just give you some good ideas.

Launching the PHP Site Assistant

The PHPSA can be found on the master machine of your FMS installation. To launch the Site Assistant, open the Admin Console and select Server, Open Start Page from the Server menu. A browser should open up to the Admin Console Start Page. In the lower-right quadrant of the page is a link to the PHP Site Assistant and XSLT Site Assistant Tools (see Figure 5.15). Click the link to open the Web Publishing Tools page (see Figure 5.16). After the page loads, click the Start PHP Site Assistant button. A file called `phpsa_webstart.jnlp` should download to your download directory. If the Site Assistant doesn’t launch automatically, double-click the `.jnlp` file to launch it.

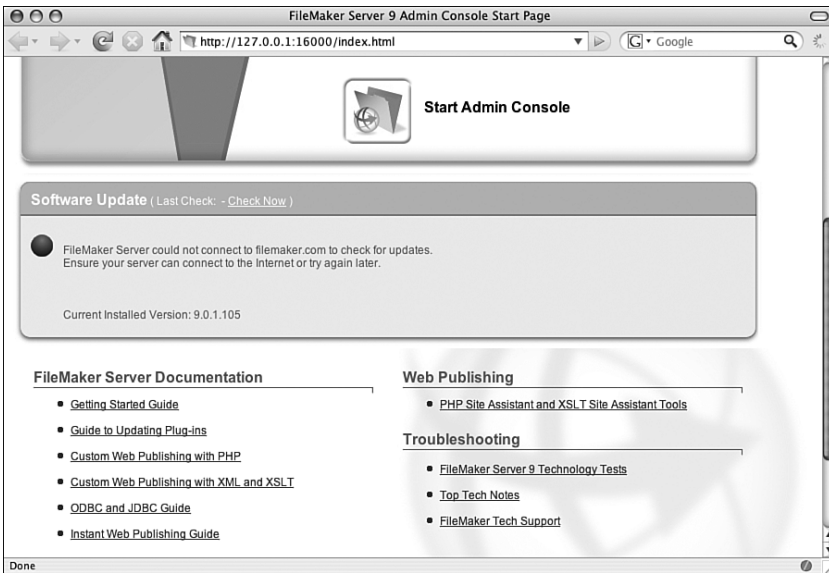


FIGURE 5.15 You can launch the Web Publishing Tools page from the FileMaker Server Start Page.



FIGURE 5.16 Click the Start PHP Site Assistant link on the Web Publishing Tools page to download and launch the PHPSA.

Building a Search Site

When the PHPSA first launches, you are presented with an overview page that outlines the seven steps to creating your website. Click the Create a New Site link in

the lower-right corner to proceed. You are prompted to specify a name for your new project. This name will eventually be used as the name of the export folder for the site.

On the following page, you are asked to connect to a FileMaker Server machine, to select a file that is hosted there, and specify an authentication method (see Figure 5.17). If you have been following along at home, the Product Catalog file will be available. Select it by clicking once. Then select the Store Database Account Name and Password in Site option and click the Open Database button. You are asked to provide a valid account name and password for the Product Catalog file. Be sure to use an account that has the PHP extended privilege enabled. Click the Choose a Layout Group link in the lower-right corner to continue.

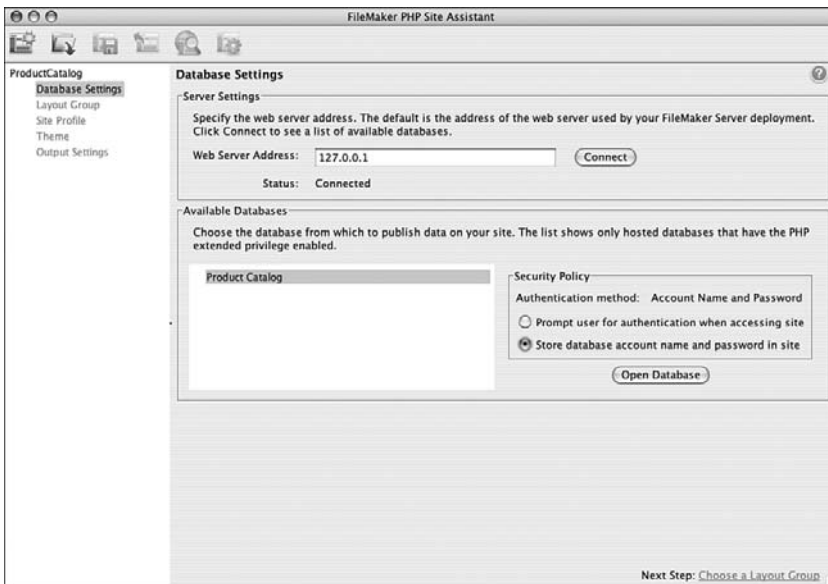


FIGURE 5.17 The Database Settings page allows you to establish a connection to a file on the database host.

On the Layout Group page, you will see a list of table occurrences (TOs) from the Product Catalog file. Clicking the disclosure arrow next to the table occurrence name will reveal all layouts that are based on the selected TO that are accessible via PHP (see Figure 5.18). For this example, select the Product TO and click the Choose a Site Profile link in the lower-right corner to continue.

The Site Profile page allows you to pick a flow for your site from a list of typical website paradigms. I encourage you to experiment with all of these so you will be familiar with the capabilities of the tool, but for now, select Search Page with Record List and click the Apply button. By doing so, you are telling the PHPSA that you want a three-page site: a home page, a search page, and a record list page. Click the Configure Home Page link in the lower-right corner to begin configuring your pages.

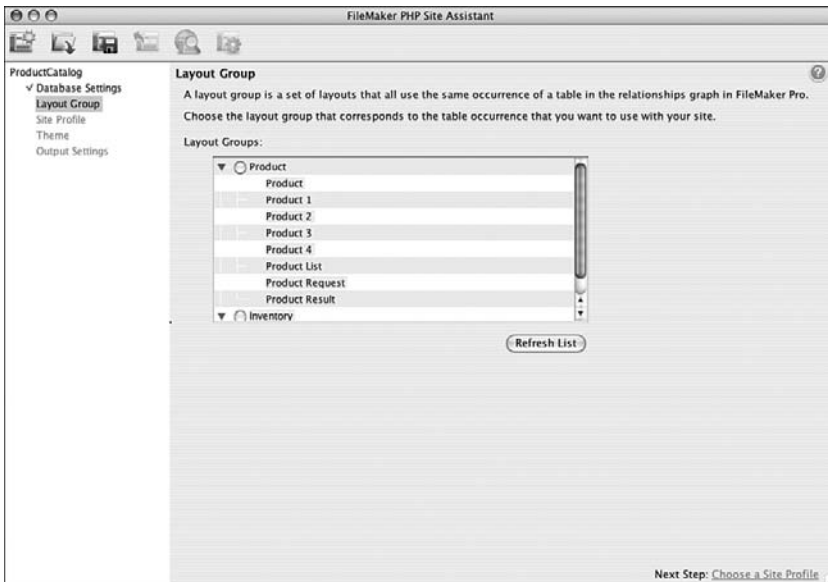


FIGURE 5.18 The Layout Group page allows you to select from table occurrences (TOs) in the selected file. Doing so will establish the context for the Site Profile pages to come.

The Home Page does not have a lot of options. It's really just a splash page for the user. You can give it a title and description, which will both be displayed to users when they first visit the site. Click the [Configure Search Page](#) link to continue.

The Search Page configuration is a bit more complex. First, specify a title for the page. Then, select a layout from the Layout pop-up menu. The layout that you select will determine the fields that appear in the Fields list below. Using the buttons above the Fields list, you can include, exclude, or reorganize the fields in the list (see Figure 5.19). When you are satisfied with your selections, click the [Configure Record List Page](#) link to continue.

On the Record List Page, you are selecting the layout and fields that should appear on the search result layout. You don't have to select the same layout or fields that you selected on the Search Page. The fields on the Record List Page are going to be laid out left to right—fields at the top of the Fields list will be leftmost on the result page. An additional option on this page is that you can specify the default sort order of the found records, and the default maximum number of records to display per page (see Figure 5.20). Click the [Choose a Theme](#) link to continue.

The Theme page simply gives you a list of preconfigured styles from which to choose. Select whichever you like and click the [Specify Output Settings](#) link to continue.

On the Output Settings page, you can opt to preview the site, or output the files to a directory on your hard drive. If you preview the site and decide that you want to go back and change some things, you can jump back to any step in the process with the navigation in the left sidebar.



FIGURE 5.19 The Search Page allows you to select a layout and one or more fields from the layout to include on the search page of the site.



FIGURE 5.20 The Record List Page looks just like the Search Page, with the addition of the Specify Default Sort Order button, and the Maximum Number of Rows to Display per Page setting.

If you want to output the files, browse to and select a location on your hard drive, and then click the Generate Site button. You will be notified that the site was successfully generated, and asked whether you want to save the PHPSA project file.

If you want to come back and edit this site later via the PHPSA interface, then save the project. If you are going to edit the generated PHP files manually with a text editor, there is no real need to save the project.

Reviewing the site in a browser reveals just how cool the PHPSA is (see Figures 5.21, 5.22, and 5.23). Note that the Search Page allows you to specify the type of search in each search field, as well as an AND or OR search. Also note that the Record List Page supports sorting with clickable column headers, and it has First, Last, Next, and Previous links for paging through long sets of data.

In literally less than 5 minutes, you can have a useful, if utilitarian, site up and running. If nothing else, you can learn from reading the generated code. The PHPSA is new, so it remains to be seen how—and how frequently—it will be used. That being said, this is no toy. FileMaker did a very good job with this, and I would not be a bit surprised if the majority of FileMaker/PHP developers used it to build their starter files for a solution.

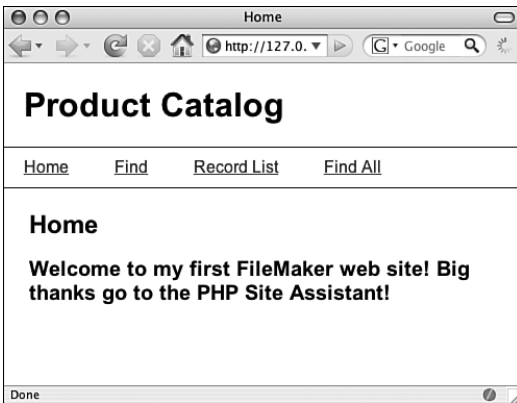


FIGURE 5.21 The Home page displays the title and description specified in the PHPSA, and has top-level navigation links to the other pages on the site.

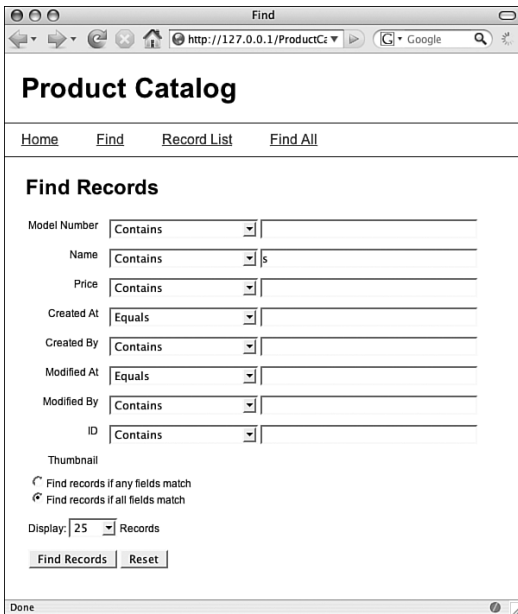


FIGURE 5.22 The Find Records page allows you to specify search criteria in one or more fields, each with its own operator (begins with, ends with, contains, and so on). You can also indicate that you want to find records that match ANY or ALL of the criteria, and you can override the default number of records to display.

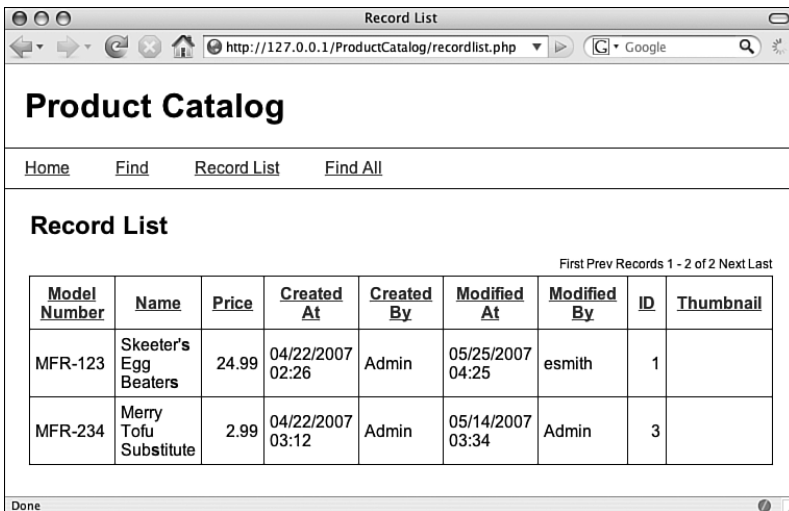


FIGURE 5.23 The Record List Page supports sorting with clickable column headers, and it has First, Last, Next, and Previous links for paging through long sets of data.

Summary

In this chapter, you learned how to install, deploy, and configure FileMaker Server on one or more machines. You also were introduced to the powerful PHP Site Assistant that can help you with your FileMaker .php coding. With those things out of the way, and the Product Catalog database hosted, we are ready to get into the thick of things. In the next section, we begin using PHP to talk to the Product Catalog in a variety of useful ways.