FileMaker® Server 8

Administrator's Guide

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Getting started

Welcome to the FileMaker® Server application for Windows and Mac OS from FileMaker, Inc. FileMaker Server gives you enhanced database hosting capabilities on your network when used with the FileMaker Pro database management application.

Note If you use FileMaker Server 8 with other FileMaker products, those other FileMaker products must be version 7 or 8.

Using this manual

This *Administrator's Guide* provides instructions for installing FileMaker Server, migrating FileMaker Server from the previous version, preparing database files for hosting, and describes features for maintaining FileMaker databases. You may need to refer to FileMaker Server Help for information on more advanced product features.

This guide assumes you're familiar with general database concepts as well as the basics of FileMaker Pro. (If you're not, refer to the *FileMaker Pro User's Guide* for more information.)

This guide uses "FileMaker Pro" to refer to both FileMaker Pro and FileMaker Pro Advanced, unless describing specific FileMaker Pro Advanced features.

Online Help

FileMaker Server Help provides detailed step-by-step instructions on FileMaker Server features. You can open Help from the Help menu in the FileMaker Server Admin application.

Using FileMaker Server documentation

The following manuals are included:

■ *FileMaker Server Administrator's Guide* (this manual): contains key concepts and basic procedures

■ *FileMaker Guide to Updating Plug-ins*: describes how FileMaker Server Auto Update can download the most current plug-in to FileMaker Pro database client computers

The following manuals only apply to FileMaker Server Advanced licensed customers:

■ *FileMaker Server Advanced Web Publishing Installation Guide*: describes how to install and register the Web Publishing Engine and associated tools

■ *FileMaker Server Advanced Custom Web Publishing Guide*: describes how to develop custom web publishing solutions using XML or XSLT on FileMaker Server Advanced

■ *FileMaker Instant Web Publishing Guide*: describes how to make FileMaker Pro databases accessible to web browser users over an intranet or the Internet

■ *Installing FileMaker ODBC and JDBC Client Drivers*: describes how to install the drivers needed to access a FileMaker data source via ODBC and JDBC

■ *FileMaker ODBC and JDBC Developer's Guide*: describes concepts and details to help you share FileMaker data with other applications using ODBC and JDBC

The following manuals are available at www.filemaker.com/downloads:

- *Converting FileMaker Databases from Previous Versions*: contains information about converting databases from previous versions to FileMaker Pro 7 format

- *FileMaker Security Guide*: describes security concerns to keep in mind when using FileMaker products

Where to find PDF documentation

Most PDF manuals are located in the folder where you installed FileMaker Server. If you performed the default installation of FileMaker Server in the default folder location, the PDF manuals are located here:

Windows: \Program Files\FileMaker\FileMaker Server\English Extras\Electronic Documentation

Mac OS: [hard disk]/Applications/FileMaker Server 8/English Extras/Electronic Documentation

Note PDF manuals for FileMaker Server Advanced are located in the folder where you installed FileMaker Server Advanced.

To view the PDF files, you need a PDF reader. In Mac OS, you can use either the built-in Preview application or Adobe® Reader®. Windows users need Adobe Reader. If you do not have Adobe Reader, you can download it from the Adobe web site at www.adobe.com.

Important You can download PDFs of FileMaker documentation (and any updates) by choosing Help menu > Downloads and Updates (Mac OS) or accessing the "FileMaker web resources" topics in FileMaker Server Help (Windows).

All of the PDF files use the tagged Adobe Portable Document format (PDF). Tagged PDF files work with assistive technology such as the screen readers JAWS for Windows and Window-Eyes. For more information about tagged PDF files, see the Adobe web site at www.adobe.com.

FileMaker Server web resources

For resources such as white papers and technical articles, see www.filemaker.com/server.

Registration and customer support

Please take the time to register your product during installation, through the FileMaker web site at www.filemaker.com/register, or by choosing Help menu > Register Now in FileMaker Server Admin (Mac OS), or opening FileMaker Server Help and using the registration link within the "Register now" topic (Windows).

For information about technical support and customer service, see:

www.filemaker.com (North American customers)
www.filemaker.com/intl (customers outside North America)

or choose Help menu > FileMaker on the Web (Mac OS), or the "FileMaker web resources" topics in FileMaker Server Help (Windows). At the web site, you will find the service options available to North American customers, as well as links to FileMaker worldwide sites, answers to frequently asked questions, and access to the TechInfo Knowledge Base. If you do not have access to the web, please refer to the FileMaker Service Directory included in the software box. North America customers can also call (800) 965-9090 to learn about the service options available.

About the license key

FileMaker software comes with a unique, 35-character-string license key. Do not lose this license key; it cannot be replaced. We recommend that you keep the license key in a safe place in case the software ever needs to be reinstalled.

You can find license keys in your volume license agreement, or in one of these documents in your product box:

- *Service Directory, License Keys, and Proof of Purchase*
- *License Key Information*

Important You must enter the license key during installation or the software will not install.

The license key ensures adherence to the single user license agreement, which generally allows for use of one (1) copy of the Software on a single computer at a time (refer to your Software License). If the license key is invalid or if another copy of the application installed with that same license key is running on the network, the FileMaker Server application displays an error message and does not start.

To install FileMaker Server on multiple computers, you must have a unique license key for each installation, or obtain a volume license. You must license one copy of FileMaker Server for each computer.

Updating the FileMaker Server license

If you want to upgrade from a trial version of FileMaker Server, or from FileMaker Server to FileMaker Server Advanced, you must update your FileMaker Server license key.

To update the FileMaker Server license:

1. In FileMaker Server Admin, connect to the FileMaker Server that you want to update:

- Windows: In the Console Root, click the FileMaker Server node and choose Action menu > Connect to FileMaker Server. Then click the server you just connected to and choose Action menu > Update FileMaker Server License.

- Mac OS: Choose Server menu > Connect to FileMaker Server, select the server, then click Connect.

2. In the Update FileMaker Server License dialog box (Windows) or the Update FileMaker License area of the Summary view (Mac OS), enter the information required, then click Update (Windows) or Update License (Mac OS).

Introducing FileMaker Server

FileMaker Server is a dedicated database server that opens FileMaker Pro files and makes them available to clients on your network. FileMaker Server uses advanced client-server technology to take care of much of the background work associated with managing files, thus enhancing performance for clients accessing those files.

Clients include:

- FileMaker 7 and FileMaker 8 users
- FileMaker Server 8 Web Publishing Engine clients
- FileMaker ODBC (open database connectivity) and JDBC (Java database connectivity) clients

Your copy of FileMaker Server supports one of the following client configurations:

- *FileMaker Server:*
  - up to 250 FileMaker Pro clients
  - up to 125 hosted databases

- *FileMaker Server Advanced:*
  - up to 250 FileMaker Pro clients
  - up to 125 hosted databases
  - up to a total of 100 Custom Web Publishing and Instant Web Publishing sessions
  - up to a total of 50 ODBC and JDBC clients

- *FileMaker Server Option Pack:*
  - adds Custom Web Publishing, Instant Web Publishing, and ODBC and JDBC client support to FileMaker Server, to the limits described for FileMaker Server Advanced.

How does FileMaker Server work?

FileMaker Server has two primary components: an administration application called FileMaker Server Admin, and the services (Windows) or daemons (Mac OS) that comprise FileMaker Server.

FileMaker Server

The FileMaker Server application is a tool to use with FileMaker Pro in a network environment to:

- Enhance database client performance.
- Increase the number of FileMaker Pro clients who can connect to a file hosted by FileMaker Server.
- Increase the number of files that can be hosted.

When you start FileMaker Server, it automatically opens and hosts FileMaker Pro files that have the appropriate extended privileges enabled and are located in the Databases folder:

Windows: Program Files\FileMaker\FileMaker Server\Data\Databases\

Mac OS: [hard disk]/Library/FileMaker Server/Data/Databases/

FileMaker Server also opens databases in the first level of subfolders, and, optionally, an additional folder that you specify. This folder structure lets you easily set up the database files that you want FileMaker Server to host on the network.

You can publish files hosted by FileMaker Server Advanced on the Internet or on a company's intranet. For more information about web publishing, see the *FileMaker Instant Web Publishing Guide* or the *FileMaker Server Advanced Custom Web Publishing Guide*.

Keep in mind the following points about the different uses of FileMaker Server and FileMaker Pro:

■ Use FileMaker Server to open and host FileMaker Pro files that you want to make available to FileMaker Pro clients on your network.

■ Use FileMaker Pro to create database files and to enable the extended privileges necessary for sharing with FileMaker Server. Then host the database files on FileMaker Server. Use FileMaker Pro to modify the structure of existing hosted databases (for example, to set up accounts and privileges for each hosted file).

The FileMaker Server Admin application

FileMaker Server Admin is an application in the Mac OS, and a console in Windows. It lets you easily configure and administer FileMaker Server, work with and monitor hosted databases and clients, and track statistical information.
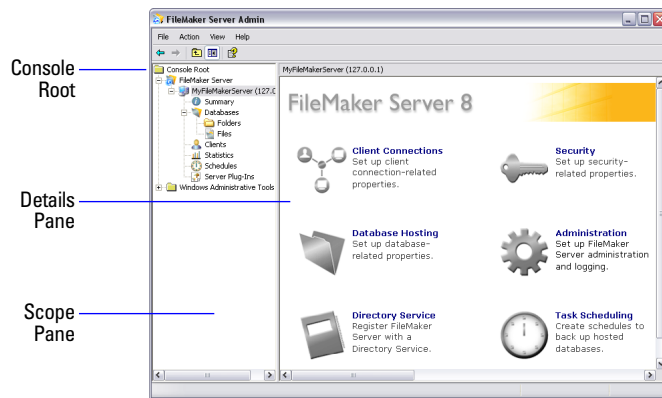
FileMaker Server Admin (Windows)
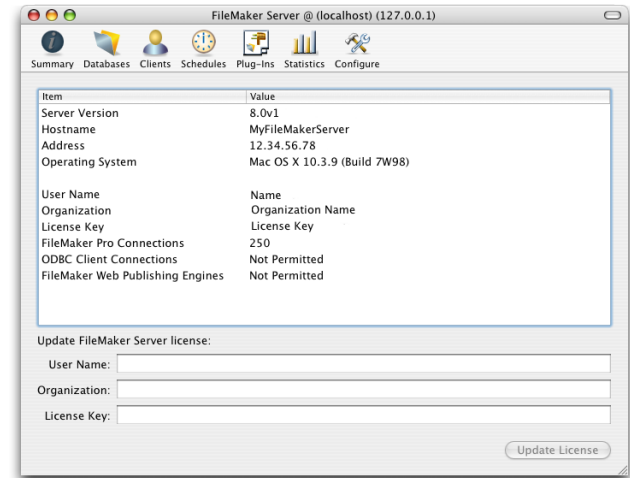
FileMaker Server Admin (Mac OS)

FileMaker Server Admin can be run on the same computer where FileMaker Server is running (locally). Or, if FileMaker Server has been configured to allow remote administration, FileMaker Server Admin can be installed and run on a Windows or Mac OS networked computer in order to administer one or more FileMaker Servers installed on other Windows or Mac OS computers in the same network.

When administering FileMaker Server, you can:

■ Configure FileMaker Server application properties.

■ Open—or host—a FileMaker Pro database file, making it available to clients on the network.

■ View information about the files being hosted, like the number of clients accessing each database.

■ Send messages to connected clients.

■ Close a hosted FileMaker Pro database, making it unavailable to clients.

- Disconnect a selected client from all hosted databases.

- Pause or resume hosted databases.

- Create scheduled tasks to back up hosted databases.

- View system events and event logs.

- Start or stop FileMaker Server.

Using FileMaker Server in your network

FileMaker Server works with the following networking technologies:

- **Multiple interface cards:** FileMaker Server works with your network operating system's ability to utilize multiple network interface cards (NICs). You can use multiple NICs and IP address aliases to provide your clients better access to hosted databases.

- **LDAP:** You can use a LDAP (Lightweight Directory Access Protocol) directory service to centrally manage your hosted databases by registering FileMaker Server with your directory service.

- **Domain controllers:** You can use a domain controller to centrally manage group accounts that determine client access privileges to hosted databases.

- **Encryption:** FileMaker Server can be configured for encrypting client data for secure data transfers between the client and hosted databases. FileMaker Server uses the Secure Sockets Layer (SSL) of your network protocol to encrypt and decrypt the data.

New features

In addition to providing reliability and performance improvements, FileMaker Server 8 supports both FileMaker 7 and FileMaker 8 clients.

Note FileMaker Server 8 is required for full support of all new FileMaker Pro 8 features, including complex finds and new calculation functions.

For information on this feature	See
Migration tools to help you upgrade from FileMaker Server 7 to FileMaker Server 8	Chapter 2, "Migrating FileMaker Server from the previous version"
The Mac OS event log fields are now tab-delimited, and there are two new fields: event ID and level of severity (Error, Warning, or Information)	"Logging FileMaker Server events" on page 38
As FileMaker Server opens files that were not closed properly or have not been opened in a FileMaker 8 product, FileMaker Server performs a consistency check on each file and logs the result of the check in the event log	"Step 4. Verify databases are available to FileMaker clients" on page 28
The sample database (FMServer_Sample.fp7) has extended privileges enabled for use with Instant Web Publishing and ODBC/JDBC	"Verifying your installation" on page 22
Improved functionality in the Client Connections assistant for configuring FileMaker Server Advanced	*FileMaker Server Advanced Custom Web Publishing Guide*
Improved web publishing support in FileMaker Server Advanced	*FileMaker Server Advanced Custom Web Publishing Guide*
Improved ODBC and JDBC applications support in FileMaker Server Advanced	*FileMaker ODBC and JDBC Developer's Guide*

Chapter 2
Migrating FileMaker Server from the previous version

If you are new to FileMaker Server, skip this chapter and proceed directly to chapter 3, "Installing FileMaker Server."

FileMaker Server 8 provides two tools, Back Up Settings and Restore Settings, to help you move your preferences and schedules from a default installation of FileMaker Server 7 to a FileMaker Server 8 installation on the same computer using the same configuration.

If you have a license for FileMaker Server 8 Advanced, there are separate Back Up Settings and Restore Settings tools to help you save and transfer your Web Publishing Engine settings. For more information, see the *FileMaker Server Advanced Web Publishing Installation Guide*.

Important If you have a license for FileMaker Server 7 Advanced and intend to upgrade to FileMaker Server 8 Advanced, plan to do the installations for FileMaker Server 8 and FileMaker Server 8 Advanced in the same session.

Read this first

The steps listed below provide an overview of the migration process. See the remaining sections for more information about each step.

It is important to do the migration steps in the order they are presented. If you omit steps or don't follow the sequence, FileMaker Server may not work properly or you may have to reconfigure your FileMaker Server settings manually.

1. Stop the FileMaker Server 7 service (Windows) or daemon (Mac OS) and FileMaker Server 7 Helper service (Windows) or daemon (Mac OS).

2. Make a copy of any database files, script files, and plug-ins you used with FileMaker Server 7.

3. Save your FileMaker Server 7 settings using the Back Up Settings tool.

4. Uninstall FileMaker Server 7.

5. Install FileMaker Server 8.

6. Move your backed up FileMaker Server 7 settings to FileMaker Server 8 using the Restore Settings tool.

7. Move any database files, script files, and plug-ins you used with FileMaker Server 7 to the proper folders within the FileMaker Server 8 folder structure.

8. Confirm that migration was successful.

Note If the FileMaker Server Web Publishing Engine is installed on the same computer as FileMaker Server, run the Web Publishing Engine migration tools.

Step 1. Stop FileMaker Server

You must first stop the FileMaker Server service (Windows) or daemon (Mac OS) and the FileMaker Server Helper service (Windows) or daemon (Mac OS), then quit FileMaker Server Admin.

See "Stopping FileMaker Server (Windows)" on page 46 or "Stopping FileMaker Server (Mac OS)" on page 47.

Step 2. Make a copy of databases, scripts, and plug-ins

You must make a copy of any database files, script files, and plug-ins you used with FileMaker Server 7. After you run the Restore Settings tool, you will have to move these files to the new locations within the FileMaker Server 8 folder structure.

In a default FileMaker Server 7 installation, database files, script files, and plug-ins are stored in the following folders:

Database files

Windows: \Program Files\FileMaker\FileMaker Server 7\Data\ Databases

Mac OS: [hard disk]/Library/FileMaker Server 7/Data/Databases/

Server plug-ins

Windows: \Program Files\FileMaker\FileMaker Server 7\Extensions\ Plugins\

Mac OS: [hard disk]/Library/FileMaker Server 7/Extensions/Plugins/

Plug-ins to be updated automatically on client machines

Windows: \Program Files\FileMaker\FileMaker Server 7\Data\ Databases\AutoUpdate\

Mac OS: [hard disk]/Library/FileMaker Server 7/Data/Databases/ AutoUpdate/

Command files (Windows) or shell scripts (Mac OS)

Windows: \Program Files\FileMaker\FileMaker Server 7\Data\ Scripts\

Mac OS: [hard disk]/Library/FileMaker Server 7/Data/Scripts/

Step 3. Save your settings

If you want to save your FileMaker Server 7 preferences and schedules, you must use the Back Up Settings tool before you uninstall FileMaker Server 7.

Note To run the Back Up Settings tool you must use a login account with administrative privileges.

1. Insert the FileMaker Server 8 CD into the CD or DVD drive.

2. Double-click the Back Up Settings icon.

Back Up Settings

3. Mac OS: Enter your Mac OS authentication passphrase and click OK.

4. Click OK to quit the Back Up Settings tool.

Step 4. Uninstall FileMaker Server 7

Note After you have saved your FileMaker Server 7 settings you can uninstall FileMaker Server 7.

Important

▪ Before removing FileMaker Server from your computer, be sure to stop the FileMaker Server 7 Helper and FileMaker Server 7 services (Windows) or daemons (Mac OS), and exit FileMaker Server Admin. See "Step 1. Stop FileMaker Server" on page 13.

▪ If you didn't back up your settings in step 3, the uninstallation process will delete them, and you won't be able to use the Restore Settings tool.

Uninstall FileMaker Server 7 (Windows)

To remove FileMaker Server 7 from a computer:

1. Start Windows.

2. Choose the Start button > Control Panel > Add or Remove Programs.

3. Select FileMaker Server 7 from the list, and click Remove.

You may see a message that some files or folders could not be deleted. You will have to move those files or folders to the new location after restoring your settings (preferences and schedules).

Uninstall FileMaker Server 7 (Mac OS)

Note The uninstaller for FileMaker Server 7 is provided on the FileMaker Server 8 CD.

To remove FileMaker Server 7 from a computer:

1. Insert the FileMaker Server 8 CD into the CD or DVD drive.

2. Double-click the FileMaker Server 7 Uninstaller icon.

FileMaker Server 7
Uninstaller

3. Enter your Mac OS authentication passphrase and follow the on-screen instructions.

4. Click Uninstall.

You may see a message that some files or folders could not be deleted. You will have to move those files or folders to the proper location after restoring your settings (preferences and schedules).

5. Click OK, then Quit.

Step 5. Install FileMaker Server 8

Note To install FileMaker Server you must use a login account with administrative privileges.

See "Installing FileMaker Server (Windows)" on page 19 or "Installing FileMaker Server (Mac OS)" on page 20.

Step 6. Restore your settings

After you have saved your FileMaker Server 7 settings and installed FileMaker Server 8, you can use the Restore Settings tool to move your FileMaker Server 7 preferences and schedules to FileMaker Server 8.

Note To run the Restore Settings tool you must use a login account with administrative privileges.

1. If you selected Automatic in the Startup Configuration panel in the Installer, you should first stop the FileMaker Server services (Windows) or daemons (Mac OS).

See "Stopping FileMaker Server (Windows)" on page 46 or "Stopping FileMaker Server (Mac OS)" on page 47.

2. Insert the FileMaker Server CD into the CD or DVD drive.

3. Double-click the Restore Settings icon.

Restore Settings

4. Mac OS: Enter your Mac OS authentication passphrase.

5. Click OK to quit the Restore Settings tool.

6. Restart the FileMaker Server services (Windows) or daemons (Mac OS).

Step 7. Move files to the proper location

After you have restored your FileMaker Server 7 settings, you must move any database files, script files, and plug-ins you used with FileMaker Server 7 to the proper folders within the FileMaker Server 8 folder structure.

See "Step 2. Place database files in the proper location" on page 26, "Default folders for plug-in files" on page 49, and "Default folders for script files" on page 56.

Step 8. Complete your migration

After you have moved any database files, script files, and plug-ins you used with FileMaker Server 7 to the proper location, confirm that the software is working successfully.

1. Start FileMaker Server Admin and start the FileMaker Server 8 services (Windows) or daemons (Mac OS) if you stopped them prior to using the Restore Settings tool.

See "Starting FileMaker Server (Windows)" on page 45 or "Starting FileMaker Server (Mac OS)" on page 46.

2. Verify that your databases are open. See "Verifying your installation" on page 22. It may take several minutes to open a large file.

Note As FileMaker Server opens files that were not closed properly or have not been opened in a FileMaker 8 product, FileMaker Server performs a consistency check on these files and logs the result of the check in the event log.

3. Verify that your preferences and schedules are correct, especially the file and folder paths.

For FileMaker Server Advanced users

If the FileMaker Server Web Publishing Engine is installed on the same computer as FileMaker Server, it is important to run the Web Publishing Engine Back Up Settings and Restore Settings tools.

For more information, see the *FileMaker Server Advanced Web Publishing Installation Guide*.

Chapter 3
Installing FileMaker Server

This chapter provides step-by-step instructions for installing FileMaker Server, FileMaker Server Admin, and associated files on a computer running Windows or Mac OS.

Important If you are upgrading from FileMaker Server 7, first read chapter 2, "Migrating FileMaker Server from the previous version."

If you're installing FileMaker Server Advanced software, installation instructions for the Web Publishing Engine and ODBC and JDBC support are described in the following manuals:

- *FileMaker Server Advanced Web Publishing Installation Guide*
- *Installing FileMaker ODBC and JDBC Client Drivers*

Hardware and software requirements

FileMaker Server should be run on a dedicated computer reserved for use as a database server. When FileMaker Server is hosting many clients or a large number of database files, it uses a high level of processor, hard disk, and network capacity. Other processor-intensive applications (for example, web server or disk backup software) or heavy network traffic on the same computer will cause FileMaker Server to run more slowly and degrade the performance of FileMaker Pro on client computers.

Notes

- Avoid installing FileMaker Server on a computer that is a user's primary workstation or network file server.
- Do not enable the operating system (OS) file sharing feature on the computer running FileMaker Server, or use OS file sharing to share FileMaker Pro files.

- You cannot run two different versions of FileMaker Server on the same computer at the same time.
- You must disable Access Control Lists in order to install the product. After installing, do not use ACL file permissions to control access to any FileMaker file. For more information, see the documentation that came with your operating system software.

Windows requirements

Minimum requirements for 1-50 clients

- Intel-compatible PC with a Pentium III 1GHz or Xeon processor
- 256 MB of installed RAM (1 GB or more recommended)
- Windows Server 2003 Standard Edition (with Service Pack 1),Windows 2000 Server (with Service Pack 4), or Windows XP Professional SP 2 operating system
- hard disk with at least 1 GB of available disk space. Be sure to allow additional space for the database files you intend to host, which must be located on the same disk as the FileMaker Server application.
- login account with administrative privileges for installing FileMaker Server
- CD or DVD drive

Minimum requirements for more than 50 clients

- Intel-compatible PC with a Pentium 4 or Xeon processor

- 512 MB of installed RAM (1 GB or more recommended)

- Windows Server 2003 Standard Edition (with Service Pack 1) or Windows 2000 Server (with Service Pack 4) operating system

- hard disk with at least 1 GB of available disk space. Be sure to allow additional space for the database files you intend to host, which must be located on the same disk as the FileMaker Server application.

- login account with administrative privileges for installing FileMaker Server

- CD or DVD drive

Networking requirements (Windows)

To share files among users on a network, you need to have the following additional software and hardware installed on the host computer running FileMaker Server:

- Windows compatible network card

- the software driver for your network card

- TCP/IP network protocol

Note Because some DHCP servers cycle IP addresses, FileMaker recommends using a static IP address.

Mac OS requirements

Minimum requirements for 1-50 clients

- Power Mac G4 500 MHz

- 256 MB of installed RAM (1 GB or more recommended)

- Mac OS X (10.3.9 or 10.4), or Mac OS X Server (10.3.9 or 10.4)

- hard disk with at least 1 GB of available disk space. Be sure to allow additional space for the database files you intend to host, which must be located on the same disk as the FileMaker Server application.

- login account with administrative privileges for installing FileMaker Server

- CD or DVD drive

Minimum requirements for more than 50 clients

- Power Mac G4 1 GHz

- 512 MB of installed RAM (1 GB or more recommended)

- Mac OS X Server (10.3.9 or 10.4)

- hard disk with at least 1 GB of available disk space. Be sure to allow additional space for the database files you intend to host, which must be located on the same disk as the FileMaker Server application.

- login account with administrative privileges for installing FileMaker Server

- CD or DVD drive

Networking requirements (Mac OS)

- TCP/IP network protocol

Note Because some DHCP servers cycle IP addresses, FileMaker recommends using a static IP address.

Important note about supported operating systems

At the time this book was written, FileMaker, Inc. tested FileMaker Server with the Windows and Mac OS operating systems listed above. These are the minimal requirements; the software may also work with later versions certified by FileMaker.

About FileMaker Server Advanced and web publishing support

You can install the Web Publishing Engine and its associated software components on the same computer as FileMaker Server, or on one or two separate host computers, depending on your needs. Web publishing requires more server resources and may also require the use of more powerful computers, especially when all of the software components are installed on a single computer. For more information, see the *FileMaker Server Advanced Web Publishing Installation Guide*.

Installing FileMaker Server (Windows)

Note If you have FileMaker Server 7, you must uninstall it before you can install FileMaker Server 8. See "Uninstall FileMaker Server 7 (Windows)" on page 15.

If you are upgrading from the FileMaker Server 8 Trial, see "Updating the FileMaker Server license" on page 9.

This installation procedure describes how to install the FileMaker Server application and associated files. FileMaker Server Admin is also installed with this procedure.

By default, the Setup program creates a folder named Program Files\FileMaker\FileMaker Server. FileMaker recommends you install to the default folder.

To install FileMaker Server:

1. Insert the FileMaker Server CD into the CD or DVD drive.

2. Double-click setup.exe.

Setup

3. Choose the installation language. Click OK.

You see the Welcome screen of the FileMaker Server Setup Wizard.

4. Click Next and follow the on-screen instructions.

5. Select an option for FileMaker Server start-up, then click Next and follow the on-screen instructions.

Select	If
Automatic	You want FileMaker Server to start whenever Windows starts.
Manual	You want FileMaker Server to start only after you start the FileMaker Server service in the Services console.

Note The FileMaker Server Helper service is set to automatically start whether you choose Automatic or Manual. The Helper is needed to start the Server service from FileMaker Server Admin when FileMaker Server is not set to start automatically.

6. When installation completes, you see a Product Registration panel. You can register online, or by letter or fax.

After installation, you must either restart the computer or start the FileMaker Server service manually the first time. For more information, see "Starting FileMaker Server (Windows)" on page 45. Thereafter, FileMaker Server will start when you restart the computer.

Installing FileMaker Server Admin only (Windows)

This installation procedure describes how to custom install the FileMaker Server Admin application and supporting files. You should use this procedure only to install FileMaker Server Admin on a networked computer. The FileMaker Server application is not installed.

To install FileMaker Server Admin only:

1. Insert the FileMaker Server CD into the CD or DVD drive of the computer you intend to use for remote administration.

2. Double-click setup.exe.

Setup

3. Choose the installation language. Click OK.

You see the Welcome screen of the FileMaker Server Setup Wizard.

4. Click Next and follow the on-screen instructions.

5. In the Setup Type panel, click Custom, then click Next.

6. Click FileMaker Server Admin, then click Next.

7. When installation completes, you see a Product Registration panel. You can register online, or by letter or fax.

Uninstalling FileMaker Server (Windows)

To remove FileMaker Server from a computer:

1. Start Windows.

2. Stop the FileMaker Server services and exit FileMaker Server Admin.

For more information, see "Stopping FileMaker Server (Windows)" on page 46.

3. Choose the Start button > Control Panel > Add or Remove Programs.

4. Select FileMaker Server from the list, and click Remove.

Your database files, script files, and plug-ins are not deleted.

Installing FileMaker Server (Mac OS)

Note If you have FileMaker Server 7, you must uninstall it before you can install FileMaker Server 8. See "Uninstall FileMaker Server 7 (Mac OS)" on page 15.

If you are upgrading from the FileMaker Server 8 Trial, see "Updating the FileMaker Server license" on page 9.

This installation procedure describes how to install the FileMaker Server application and associated files. FileMaker Server Admin is also installed with this procedure.

The installer creates two folders, one named FileMaker Server in the [hard disk]/Library folder and one named FileMaker Server 8 in the [hard disk]/Applications folder. See "FileMaker Server folders in Mac OS" on page 52 for more information on these folders.

Important FileMaker Server must be installed locally on Mac OS. You cannot install FileMaker Server over a network.

To install FileMaker Server:

1. Insert the FileMaker Server CD into the CD or DVD drive.

You see the CD window. If you see only the disc icon, double-click the icon to open its window.

2. Double-click the FileMaker Server 8 installer icon.

FileMaker Server 8

3. Enter your Mac OS authentication passphrase and follow the on-screen instructions.

You see the FileMaker Server installer dialog box.

4. Click Install.

5. Choose the startup configuration. Click OK.

Select	If
Automatic	You want FileMaker Server to start whenever Mac OS starts.
Manual	You want FileMaker Server to start only after you start the FileMaker Server daemon using FileMaker Server Admin.

Note The FileMaker Server Helper daemon is set to automatically start whether you choose Automatic or Manual. The Helper is needed to start the Server daemon from FileMaker Server Admin when FileMaker Server is not set to start automatically.

6. Follow the on-screen instructions.

7. When installation completes, you see a Product Registration panel. You can register online, or by letter or fax.

After installation, you must either restart the computer or start the FileMaker Server service manually the first time. For more information, see "Starting FileMaker Server (Mac OS)" on page 46. Thereafter, FileMaker Server will start when you restart the computer.

Installing FileMaker Server Admin only (Mac OS)

This installation procedure describes how to custom install the FileMaker Server Admin application and supporting files. You should use this procedure only to install FileMaker Server Admin on a networked computer. The FileMaker Server application is not installed.

The installer creates a folder called FileMaker Server 8 in the [hard disk]/Applications folder.

To install FileMaker Server Admin only:

1. Insert the FileMaker Server CD into the CD or DVD drive.

You see the CD window. If you see only the disc icon, double-click the icon to open its window.

2. Double-click the FileMaker Server 8 installer icon.

FileMaker Server 8

3. Choose Custom Install from the pop-up menu.

4. Click Install and follow the on-screen instructions.

5. When installation completes, you see a Product Registration panel. You can register online, or by letter or fax.

Uninstalling FileMaker Server (Mac OS)

Note Before removing FileMaker Server from your computer, be sure to stop the FileMaker Server Helper and FileMaker Server daemons, and quit FileMaker Server Admin.

To remove FileMaker Server from a computer:

1. Insert the FileMaker Server CD into the CD or DVD drive.

You see the CD window. If you see only the disc icon, double-click the icon to open its window.

2. Double-click the FileMaker Server 8 installer icon.

FileMaker Server 8

3. Enter your Mac OS authentication passphrase and follow the on-screen instructions.

You see the FileMaker Server installer dialog box.

4. Choose Uninstall from the pop-up menu.

5. Click Uninstall.

Your database files, script files, and plug-ins are not deleted.

6. Click Quit.

Configuring the firewall to allow FileMaker ports

When running FileMaker Server in an environment that uses a firewall, be sure to configure the firewall to allow the ports used by FileMaker. Restart your computer after configuring the firewall.

Port number	Used by
5003	FileMaker Pro and FileMaker Server for hosting files
50003	FileMaker Server service (Windows) or daemon (Mac OS)
50006	FileMaker Server Helper service (Windows) or daemon (Mac OS)

Windows: When FileMaker Server Admin is started when the firewall is on, an alert is displayed. Click Unblock to launch FileMaker Server Admin.

Port usage and remote administration

The best method for remote administration outside the administrator's physical network is to keep your firewall in place and use a secure mechanism to connect to your network, such as a virtual private network (VPN) or secure dial-in. Use the FileMaker Server Admin tool to administer FileMaker Server on a remote computer once you are securely connected to your network.

Important FileMaker does not recommend using the remote administration feature to administer FileMaker Server if you cannot use a VPN or remote dial-in to access your network securely.

Verifying your installation

Before you configure FileMaker Server you should verify that:

▪ your copy has been installed and is working correctly

▪ the sample database (FMServer_Sample.fp7) is usable from a client computer

FileMaker Server installs a pre-configured sample database as part of a typical installation. The database FMServer_Sample.fp7 is located in the Sample folder within the default Databases folder (/FileMaker Server/Data/Databases/Sample/FMServer_Sample.fp7). It is opened automatically when FileMaker Server is launched. You can close and remove this database after you have verified that FileMaker Server is functioning correctly.

To verify that FileMaker Server is functioning correctly:

1. Start FileMaker Server. Depending on the option you chose on installation, FileMaker Server either launches automatically or must be launched manually. See "Starting FileMaker Server (Windows)" on page 45, or "Starting FileMaker Server (Mac OS)" on page 46, for more information.

2. Start the FileMaker Server Admin application.

▪ Windows: Choose the Start button > Programs > FileMaker Server Admin.

▪ Mac OS: Double-click the FileMaker Server Admin icon in the Applications/FileMaker Server 8/ folder.

3. Windows: Select FileMaker Server in the Console Root and choose Action menu > Connect to FileMaker Server.

Mac OS: Choose Server menu > Connect to FileMaker Server.

4. From the pop-up menu at the top of the Connect to FileMaker Server dialog box, choose Local Servers, Favorite Servers, or Servers Listed by LDAP.

If you are using FileMaker Server Admin on the same computer that is running FileMaker Server, you can choose (localhost) in the Favorite Servers view.

For a remote Server, add the IP address to Favorite Servers. You can select a Server from the Local Servers list and click Add to Favorites to add it to the Favorite Servers list.

In the Servers Listed by LDAP list, you see the FileMaker Servers that have the Register FileMaker Server with a directory service property enabled.

5. Select the FileMaker Server you want to administer, then click Connect.

6. Type a user name and password, if you are prompted to enter them.

7. Select the Databases node (Windows) or click the Databases button (Mac OS).

8. The FMServer_Sample.fp7 database should be listed as Normal in the Status column.
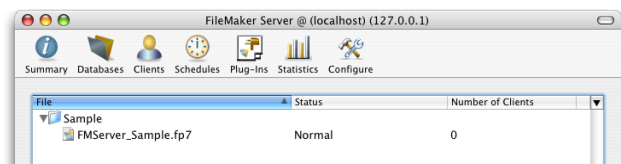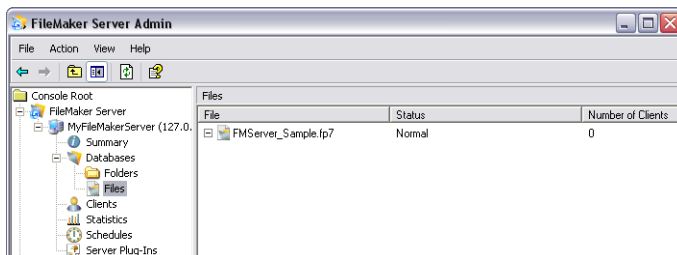
To verify that the database is usable from a client computer:

1. Launch FileMaker Pro or FileMaker Pro Advanced.

2. Choose File menu > Open Remote.

3. Select Local Hosts from the View menu, and choose your server from the list. The name of the sample database should appear in the column on the right.

4. If your server is not on your local network, you can enter the network file path directly in the Open Remote dialog box by typing `fmnet:/hostIPAddress/FMServer_Sample.fp7`, where *hostIPAddress* is the IP address of your server.

5. If you can open the sample database, your copy of FileMaker Server is installed correctly.

Close the sample database, and quit FileMaker Pro.

If you cannot open the sample database, review the previous steps and see the troubleshooting topics in FileMaker Server Help for more suggestions.

Chapter 4
Hosting databases

Read this first

Before you can share FileMaker Pro database files, it's important to prepare your files for hosting. The steps listed below provide an overview of the process. See the remaining sections for more information about each step.

1. Edit the accounts and privileges sets that clients will use for shared access.

2. Put the FileMaker Pro database files in the proper location.

3. For files that will be shared from Mac OS, change the files to belong to the `fmsadmin` group. To edit databases shared from Mac OS, files should also have group read and write access enabled.

4. Verify that your files are listed as opened (status is Normal) in the FileMaker Server Admin Databases view, and verify that they are available to FileMaker clients.

Converting databases to the current format

You must convert databases created in FileMaker Pro 6 and earlier to FileMaker Pro 7 format. FileMaker Pro 7 and FileMaker Pro 8 share the same file format. For information about converting databases to FileMaker Pro 7 format, see *Converting FileMaker Databases from Previous Versions*, available as a PDF file from www.filemaker.com/downloads.

Step 1. Edit accounts and privilege sets

In FileMaker Pro, edit the accounts and privilege sets that clients will use for shared access to each database. Choose File menu > Define > Accounts & Privileges.

Enable the appropriate extended privileges for particular privilege sets. Every account assigned to a privilege set with extended privileges will be able to access the database through the protocol associated with an extended privilege (for example, Access via FileMaker Network).
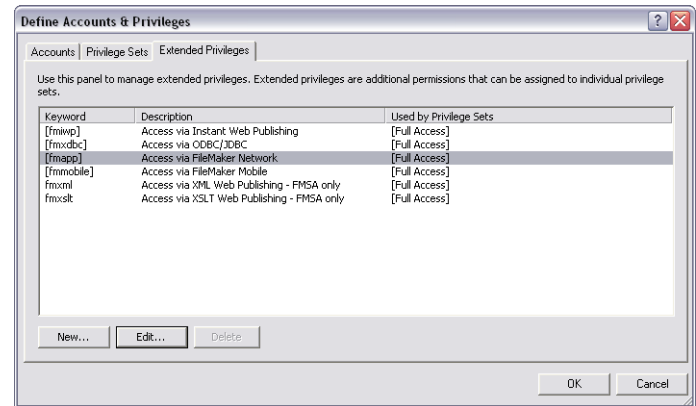
FileMaker Pro Define Accounts & Privileges dialog box, Extended Privileges tab

For more information on accounts, privilege sets, and extended privileges, see the *FileMaker Pro User's Guide*.

Enable the privilege to Disconnect user from FileMaker Server when idle to disconnect idle users from FileMaker Server for each account (or keep them connected), as necessary.
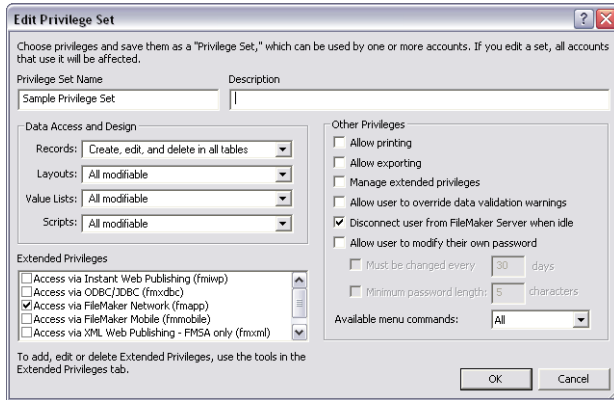
FileMaker Pro Edit Privilege Set dialog box

For more information on setting the length of time a user must be idle before being disconnected, see "Setting the maximum time allowed for idle FileMaker Pro clients" on page 33.

If your organization uses a server to centrally manage authentication for users and groups, FileMaker Server can use that server as an authenticator to manage database access if you have defined External Server account types in the database. For more information on authenticating via an external server for FileMaker Pro accounts, see FileMaker Pro Help and www.filemaker.com/server.

Step 2. Place database files in the proper location

Place the FileMaker Pro files that you want FileMaker Server to open in the folders:

Windows: Program Files\FileMaker\FileMaker Server\Data\Databases\

Mac OS: [hard disk]/Library/FileMaker Server/Data/Databases/

Notes

■ FileMaker Server will also automatically open files located in the first level of subfolders within these folders.

■ FileMaker Server folder names no longer include the version number, except the Mac OS folder named FileMaker Server 8 in the [hard disk]/Applications folder.

You can also place the files in an additional database folder. For more information, see "Specifying an additional database folder" on page 36.

Up to 125 FileMaker Pro database files can be automatically opened when FileMaker Server starts up.

Mac OS: FileMaker recommends adding the .fp7 filename extension to all hosted databases. Although this extension is not necessary for databases used on the Mac OS, the .fp7 extension is necessary for databases used on Windows.

For information on placing script files in the proper folders, see "Default folders for script files" on page 56. For information on placing plug-ins in the proper folders, see "Default folders for plug-in files" on page 49.

Step 3. Change group ownership for files (Mac OS)

FileMaker Server and all database files, plug-ins, and scripts must be configured with the correct privileges and permissions to function properly in Mac OS.

By default, only the user account that installed FileMaker Server in Mac OS can manually operate FileMaker Server from the command line, add files to or remove files from the FileMaker Server folder, and access any of the FileMaker Pro databases stored within the FileMaker Server default databases and database backup folders. All users, however, can access the FileMaker Server Admin application.

Other user accounts and database files can be manually added to the fmsadmin group using the Mac OS NetInfo Manager or Terminal application. This task must be performed by a user with administrative privileges.

For more information on Mac OS permissions, see "About file system permissions" on page 52.

Changing file permissions for database files hosted by FileMaker Server

In Mac OS, all database files hosted by FileMaker Server must belong to the fmsadmin group and have read and write access enabled.

To change the group and permissions for a database:

1. Move the database files to the folder [hard disk]/Library/FileMaker Server/Data/Databases/ or the optional additional database folder.

2. In the Finder, select the first database file, and choose File menu > Get Info.

3. Expand the Ownership & Permissions area of the Get Info dialog box, and the Details area, if necessary.

4. If necessary, click the lock icon to unlock the permissions pop-up menus, and enter your account's password at the prompt.

5. For Group, select fmsadmin.

6. For group Access, select Read & Write.

7. Close the Get Info dialog box.

8. Repeat steps 2–7 for each database in the folder.

Adding a user to the fmsadmin group using the NetInfo Manager application

Note If you're using Mac OS X Server, you can use the Workgroup Manager administration tool to add users to the fmsadmin group.

To add an existing user of the system to the fmsadmin group after installation, do the following:

1. Launch the NetInfo Manager application ([hard disk]/ Applications/Utilities/NetInfo Manager).

2. Select groups in the second column (labeled "/").

3. Select fmsadmin in the groups column.

4. Select users in the properties pane, located in the bottom half of the NetInfo Manager window.

5. Click the lock button at the bottom of the window and enter an administrative password.

6. Choose Directory menu > Insert Value.

7. Enter the login account name of the user you are adding.

8. To save changes, choose Domain menu > Save Changes.

9. Click Update this copy to confirm your changes.

10. Choose NetInfo Manager menu > Quit NetInfo Manager.

Important Caution should be taken when making changes with NetInfo Manager. See the Apple support web site for more information about Mac OS permissions.

Step 4. Verify databases are available to FileMaker clients

To verify that databases were opened when FileMaker Server started and are available to FileMaker clients, check that:

■ the status of files listed in the Databases view is Normal

■ you can open remote files in FileMaker Pro

To check the status of files listed in the Databases view:

1. Connect to a server. See "Connecting to FileMaker Server using FileMaker Server Admin" on page 48 for more information.

2. In FileMaker Server Admin, select the Databases node (Windows) or click the Databases button (Mac OS).

When FileMaker Server starts, it automatically opens and hosts all FileMaker Pro databases located in the default database folder and in an additional database folder, if specified. Those databases should be listed as Normal in the Status column.

If you added files to the default database folder after startup, those files are listed as Closed and you must open them manually.

3. If the status of a database is Closed, select the database, then choose Action menu > Open (Windows) or Action menu > Databases > Open Database (Mac OS).
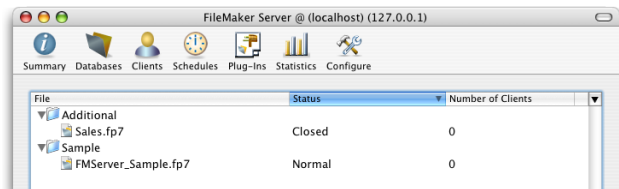
It may take several minutes to open a large file. As FileMaker Server opens files that were not closed properly or have not been opened in a FileMaker 8 product, FileMaker Server performs a consistency check on each file and logs the result of the check in the event log.

You can also open a database at the command prompt (Windows) or Terminal (Mac OS). See "Using the command line to automate tasks" on page 54 for more information.

Tip If a folder containing databases is closed, double-click the folder. If databases are not visible, it may be necessary to refresh the Databases view. Select the Databases node (Windows) or click the Databases button (Mac OS), then choose Action menu > Refresh (Windows) or Action menu > Databases > Refresh View (Mac OS).

To verify that a database is usable from a client computer:

1. Launch FileMaker Pro or FileMaker Pro Advanced.

2. Choose File menu > Open Remote.

3. Select Local Hosts from the View menu, and choose your server from the list. The name of the database should appear in the column on the right.

If the database is not listed, review the preceding hosting steps.

Administering hosted databases

After you are connected to FileMaker Server, you can view information about hosted databases by selecting Databases in the Console Root (Windows) or by selecting the Databases button (Mac OS). From the list of databases, you can select one file or one folder for the following administrative tasks:

- view database details
- open and close selected databases
- pause and resume selected databases
- send messages to clients accessing hosted databases
- disconnect clients from hosted databases

Tip With no database or folder selected, some commands operate on all databases.

For more information, see "The FileMaker Server Admin application" on page 11.

Viewing hosted databases

The Databases view shows database folders and files located on the FileMaker Server computer. Each folder can be opened to view a list of database files in each folder.

You can view a list of the database files hosted by FileMaker Server, regardless of which folder in which they are located, by selecting Databases > Files in the Console Root (Windows) or Action menu > Databases > Hide Folders (Mac OS).

You can view detailed information about hosted files and the clients that are currently connected to them. For each hosted database, you see:

- the name of the file
- the number of clients connected to it
- file status

From the list, you can select one or all clients in order to:

- send messages to clients
- disconnect clients

Mac OS: You can sort information in columns by clicking the column heading that includes a triangle in the heading.

Listing current clients

You can list FileMaker Pro and FileMaker Pro Advanced clients connected to the hosted database files by selecting Console Root > Clients (Windows) or the Clients button (Mac OS).

The Clients list shows detailed information about the clients that are currently connected to hosted databases.

For each client, you can display:

- client account names
- client computer names
- client network addresses
- timestamp (date and time) of when the connection began
- number of files the client is currently connected to

Sending messages to FileMaker Pro clients

You can send a message to all FileMaker Pro clients by choosing Action menu > Send Message to All (Windows) or Action menu > Clients > Send Message to All Clients (Mac OS). If you select a single client from the Clients view, the message is sent only to that client.

Another way of sending messages to clients is by scheduling a Send Message task. For more information, see chapter 7, "Scheduling administrative tasks."

Disconnecting clients

Disconnect a client from a hosted database by selecting Action menu > Disconnect All Clients (Windows) or Action menu > Clients > Disconnect All Clients from Server (Mac OS). If you select a client from the Clients view, only the selected client is disconnected.

You can send the client a message in addition to the standard FileMaker Pro message (the default).

The selected client sees a notification dialog box with your message requesting that the client disconnect from the server.

When the set time elapses, FileMaker Server disconnects the client and the client's name disappears from the Clients view.

Closing hosted files

Close a database and disconnect any clients accessing it by choosing Action menu > Close (Windows) or Action menu > Databases > Close Database (Mac OS).

You can send the client a message in addition to the standard FileMaker Pro message (the default).

Clients see a notification dialog box with your message requesting that they close their connection to a file. When the set time elapses, FileMaker Server disconnects any remaining clients and closes the file or files in the folder.

Closing many databases, a large database file, or a file with many connected clients may take several minutes.

Tip You can close files from the command prompt (Windows) or the Terminal (Mac OS). See "Using the command line to automate tasks" on page 54 for more information.

Enabling Auto Update for plug-ins

If the database solutions you will host on FileMaker Server use plug-ins, you can enable the Auto Update plug-in preference in each FileMaker Pro client to automatically install or update required or outdated plug-ins.

To automatically update a plug-in or support file, the required file must be installed on FileMaker Server and the Auto Update feature must be enabled in FileMaker Pro and on FileMaker Server. See "Allowing FileMaker Pro clients to download updates automatically" on page 33 and the *FileMaker Guide to Updating Plug-ins*.

Plug-ins installed on FileMaker Server (Mac OS) must also be owned by the group `fmsadmin` and have group read and executable permissions. For more information, see "Using FileMaker Server in Mac OS" on page 52.

Chapter 5
Configuring FileMaker Server

Use the FileMaker Server Admin application to configure FileMaker Server for optimal performance. Windows users can also use the configuration assistants to set up server properties. Use the Properties dialog box (Windows) or Configure view (Mac OS) for access to the complete set of configuration settings.

Note This chapter provides an overview of the configuration settings that are available. For detailed step-by-step procedures about configuring FileMaker Server, see FileMaker Server Help.

Using the configuration assistants (Windows)

In Windows, FileMaker Server provides configuration assistants to help you set up server properties. You can use the associated Properties dialog box to change settings, if needed. The configuration assistants are Client Connections, Security, Database Hosting, Administration, Directory Service, and Task Scheduling.

To access the configuration assistants:

1. Choose the Start button > Programs > FileMaker Server Admin.

You see the FileMaker Server Administration console.

2. Connect to the server you want to work with.

3. Click one of the icons in the Details Pane to start an assistant or select host, then choose Action menu > Assistants.

Configuring client connections

In FileMaker Server Admin, connect to the server you want to work with.

Windows: Configure client properties in the Client Connections assistant or select a server and then choose Action menu > Properties > Clients tab.
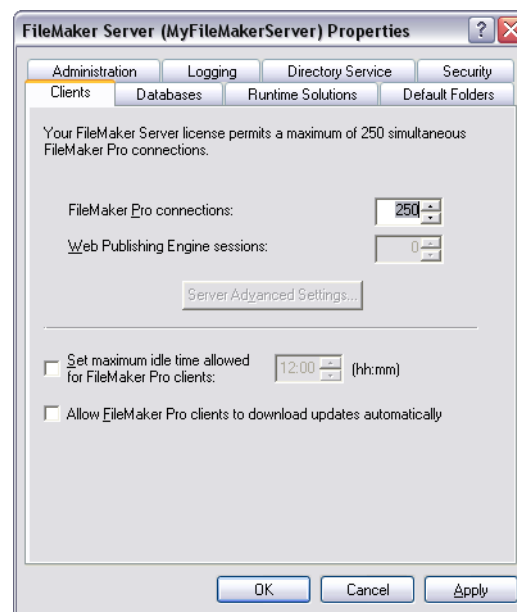
FileMaker Server Properties dialog box, Clients tab

Mac OS: To configure client properties, choose View menu > Configure, then click the Clients tab.
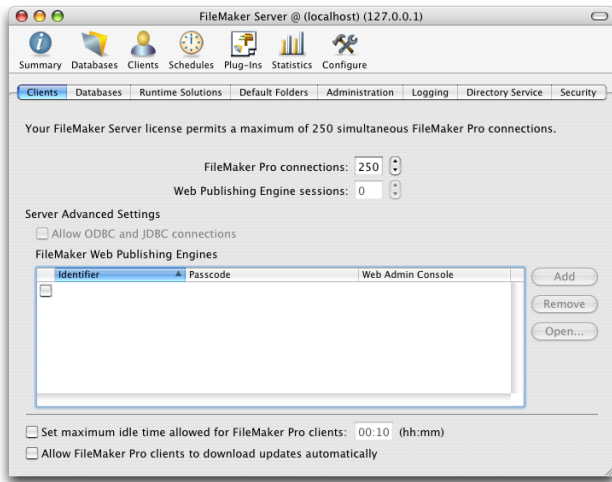
FileMaker Server Configure view, Clients tab

Setting the maximum number of clients

You can specify the maximum number of FileMaker Pro clients that can be simultaneously connected to FileMaker Server.

Note The memory requirements of FileMaker Server and FileMaker Server Advanced are directly related to the number of clients and open files. If you specify large values for these, you should also increase the amount of RAM reserved for the database cache. See "Changing the amount of memory used by FileMaker Server" on page 34 for more details.

Setting the maximum number of FileMaker Server Advanced clients

If you own FileMaker Server Advanced, you can enable ODBC and JDBC data source connections and FileMaker Web Publishing Engine sessions. The Web Publishing Engine sessions option and the Server Advanced Settings options are only available with FileMaker Server Advanced.

Setting the number of combined FileMaker Pro and ODBC/JDBC connections

If you have FileMaker Server Advanced, you can specify the number of simultaneous FileMaker Pro and ODBC/JDBC clients allowed to access FileMaker Server.
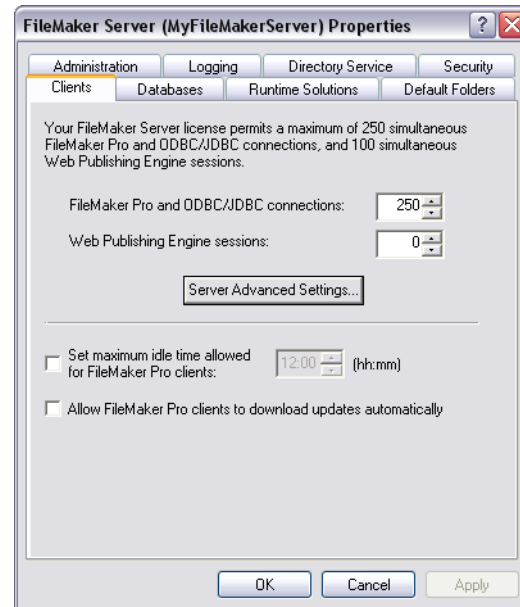
FileMaker Server Advanced Properties dialog box, Clients tab

Setting the number of Web Publishing Engine sessions

If you have FileMaker Server Advanced, you can specify the maximum number of simultaneous web browser sessions connecting through the FileMaker Server Web Publishing Engine.

Tip If you monitor client usage over time and notice you rarely have more than a certain number of each type of client active at one time, set these options to allow only a few more than that number for best performance on your server.

Enabling ODBC and JDBC connections

You can use FileMaker Server Advanced to host a FileMaker database file as a data source, sharing your data with other applications using ODBC and JDBC.

For information on installing drivers, see *Installing FileMaker ODBC and JDBC Client Drivers*.

For information on configuring FileMaker Server Advanced for ODBC and JDBC, see the *FileMaker ODBC and JDBC Developer's Guide*.

Enabling the xDBC plug-in

The xDBC plug-in is installed with the rest of the product, but you must enable the plug-in before you can share data with other applications using ODBC and JDBC.

See FileMaker Server Help for more information.

Registering the Web Publishing Engine

You can allow a Web Publishing Engine access to hosted databases by registering it with FileMaker Server. The Web Publishing Engine server is registered in FileMaker Server by an identifier text string and a passcode.

For information about installing and configuring the Web Publishing Engine, see the *FileMaker Server Advanced Web Publishing Installation Guide*.

Setting the maximum time allowed for idle FileMaker Pro clients

You can specify the length of time that FileMaker Pro clients can be idle in any database hosted by FileMaker Server before they are disconnected. Because clients who are disconnected have to reopen the file, you should make sure the idle time is long enough to avoid frequent disconnections.

Note In FileMaker Pro, you can enable a privilege to disconnect a client connected to FileMaker Server when the client is idle. When this privilege is enabled, FileMaker Pro disconnects the client from FileMaker Server. For more information about privileges, see the *FileMaker Pro User's Guide*.

Allowing FileMaker Pro clients to download updates automatically

You can store plug-in files on the FileMaker Server computer and allow FileMaker Pro clients to download these files automatically when they open database files hosted by FileMaker Server. Examples of files you can download automatically are plug-in license files, sometimes required by FileMaker Pro databases.

When a FileMaker Pro file is hosted by FileMaker Server, any plug-ins required by the file must exist on each client computer used to open the database. By allowing plug-in updates to be downloaded automatically, you ensure that all clients have access to plug-ins required by a database the first time they attempt to open it. In addition, when plug-ins are changed by database developers, you can store new versions on the FileMaker Server computer, so you don't have to update plug-ins on client computers.

For automatic file downloading to work correctly, you must place current plug-in files in the following folders:

Windows: Program Files\FileMaker\FileMaker Server\Data\Databases\AutoUpdate\

Mac OS: [hard disk]/Library/FileMaker Server/Data/Databases/AutoUpdate/

In addition, enable the Auto Update plug-in in FileMaker Pro preferences before attempting to open hosted files that require plug-ins.

Note FileMaker Pro can check the version of plug-in files required by a hosted database and update plug-ins if the current version is not located on the client computer. For more information about downloading plug-ins automatically, see the *FileMaker Server Guide to Updating Plug-ins*.

Setting database properties

Windows: Change database properties in the Database Hosting assistant or select host and then choose Action menu > Properties > Databases tab.
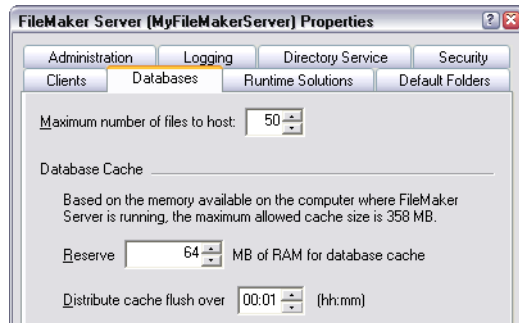
Mac OS: To change database properties, choose View menu > Configure, then click the Databases tab.
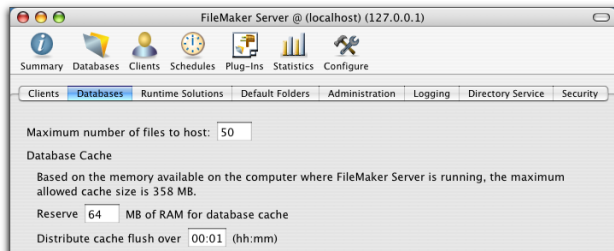
Setting the maximum number of files

You can specify the maximum number of database files FileMaker Server can host at one time. If you consistently monitor database usage, you can set the maximum number of files for best performance on your server. For information on performance and optimizing memory settings, see Help.

Changing the amount of memory used by FileMaker Server

Use Reserve *n* MB of RAM for database cache to specify a cache size for FileMaker Server. Increasing the RAM reserved for the database cache can speed up overall performance for a correctly designed database, especially if your server hosts large files or a large number of clients or files.

For information on performance and optimizing memory properties, see Help.

Setting the cache flushing distribution interval

In FileMaker Server, the cache is constantly being flushed. The cache flushing routine scans the cache, looking for pages that have changed. FileMaker Server inspects up to 1/60th of the cache and writes any changed pages it discovers to the disk. The process repeats continuously, writing 1/60 of the cache to disk every second, even during scheduled backups.

For example, in a 64MB cache, FileMaker Server will inspect up to 1/60th of the cache, or a little more than a megabyte, and flush all of the changed records it finds. It will then wait a second and begin again, inspecting up to 1/60th of the cache, looking for changed records. This method of flushing the cache distributes writing to the hard disk over the span of a minute.

By default, the cache flush mechanism will attempt to scan the entire cache in a minute. In most cases this means all cached changes on the server will be no more than one minute old, although database size and hard disk speed can affect these results.

To change this behavior and spread the cache flushing over a longer period of time, select Distribute cache flush over (hh:mm). Unsaved changes in FileMaker Server will be no older than the interval you specify. FileMaker Server reduces the amount of data to inspect every second to a smaller value, down to 128k per second.

This property determines how much cache is flushed each second. Before deciding to change this property the administrator must balance cache size against the risk of data loss in the event of a computer failure. Locations that require maximum performance and are less concerned about the potential for lost data can use a longer cache flush distribution interval, while locations that want maximum data integrity should use a smaller cache flush distribution interval.

For example, if the value is set to 10 minutes with a 64MB cache, the engine will inspect 1/600th of the cache each second, or about 110K of cache, (less than the minimum, so the engine will actually inspect 128K of cache) and write only the changed data to disk. However, if this interval is set to 10 minutes with a 500 MB cache, it will only inspect 853K as opposed to the default value of 1/60th of the cache, or 8.5 MB. Used this way, the server can distribute its disk writing over time, and therefore allow the server CPU a higher priority to service client requests, as it will take much less time to inspect 853K compared to 8.5MB.

Opening runtime solutions automatically

Runtime solutions are database files created in FileMaker Pro Advanced that are typically used with a dedicated, "bound" copy of the FileMaker Pro application. If you host runtime database solutions created by FileMaker Pro Advanced, you can enable FileMaker Server to automatically open runtime solutions when FileMaker Server starts, provided runtime solutions are stored in one of the designated locations. See "Starting FileMaker Server (Windows)" on page 45 for more information.

If the runtime solutions do not have .fp7 filename extensions, you must register their filename extensions in FileMaker Server.

Windows: Configure runtime solution properties in the Database Hosting assistant or select host and then choose Action menu > Properties > Runtime Solutions tab.
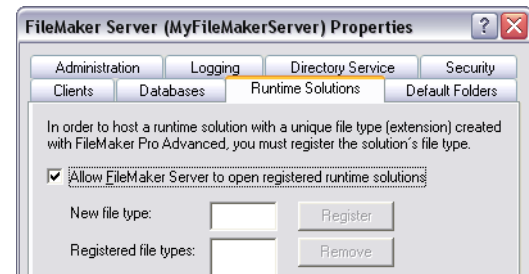
Mac OS: To configure runtime solution properties, choose View menu > Configure, then click the Runtime Solutions tab.
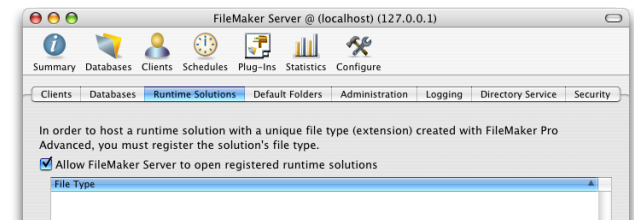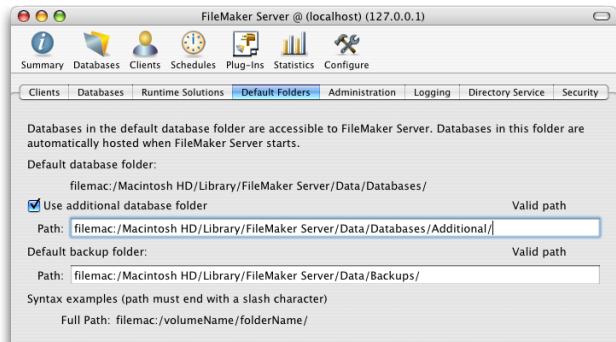
Specifying additional database and default backup folders

Windows: Change default folder properties in Action menu > Properties > Default Folders tab.
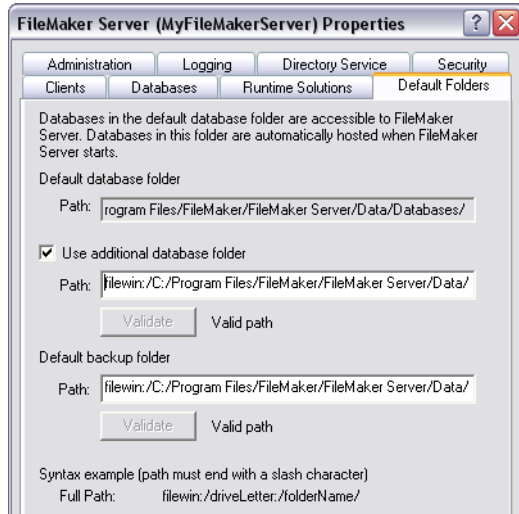
Mac OS: To change default folder properties, choose View menu > Configure, then click the Default Folders tab.

On startup, FileMaker Server looks in the default database folder as well as an optionally specified additional database folder for databases to host. In each of these locations, FileMaker Server will only open files at the root level and in folders one level down.

Specifying an additional database folder

Specify the path to an additional folder for hosting databases.

Specifying the default backup folder

Specify the path to a folder to be used by FileMaker Server when a Back Up Database scheduled task runs. See "Scheduling administrative tasks" on page 55 for more information.

Important Do not put the default backup folder in the same folder as the databases to be hosted, or in a subfolder within that folder, because any databases in that folder are automatically opened when FileMaker Server starts.

Setting administrative properties

Windows: Configure administrative properties in the Administration assistant or select host and then choose Action menu > Properties > Administration tab.
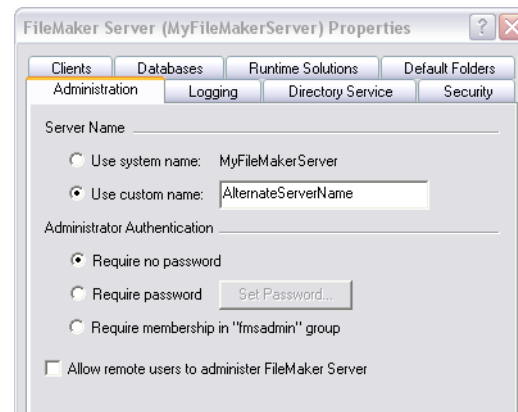
Mac OS: To configure administrative properties, choose View menu > Configure, then click the Administration tab.
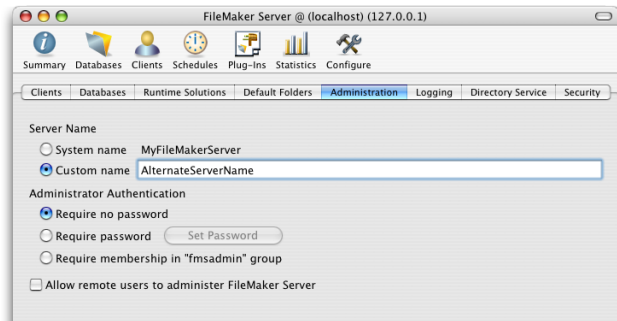
Specifying a custom server name

For the computer running FileMaker Server, you can specify a server name that's different from the name registered by the operating system.When you define a custom name, FileMaker Pro clients see this new name when they open the Open Remote File dialog box. The custom name is also displayed when connecting using FileMaker Server Admin.

Authenticating the administrator

FileMaker Server Admin can be protected by requiring:

■ a password for access

■ the administrator be a member of an administrative group account called `fmsadmin` on the system where FileMaker Server is running

Note Unless Allow remote users to administer FileMaker Server is enabled, the settings apply only to local users on the system running FileMaker Server.

Important If you require a password or authentication for security reasons, also remember to restrict access to the server computer. Do not put the computer in an unsecured room.

Enabling remote administration

Using the FileMaker Server Admin application, you can remotely control, or administer, FileMaker Server from a different computer than the one on which FileMaker Server is installed and hosting databases. Select Allow remote users to administer FileMaker Server to enable remote administration.

Important You enable remote administration only with the FileMaker Server Admin application installed on the same computer as FileMaker Server. You can disable remote administration from a remote computer.

After you enable remote administration, you can use FileMaker Server Admin on a remote computer to configure FileMaker Server properties, view a list of hosted databases, view the clients using them, and monitor performance statistics. You can also send messages to clients, disconnect clients, and open or close hosted databases remotely.

Recording usage statistics and setting log file size limits

Windows: Configure log file properties in the Administration assistant or select host and then choose Action menu > Properties > Logging tab.
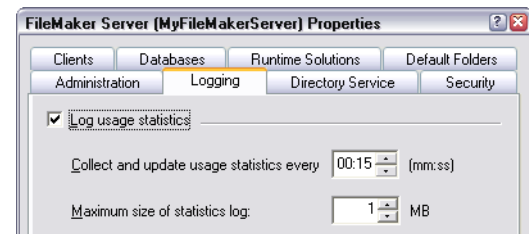
Mac OS: To configure log file properties, choose View menu > Configure, then click the Logging tab.
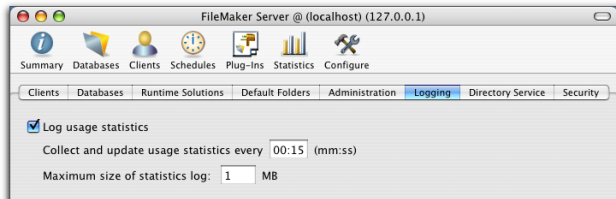
Controlling the collection of usage statistics

Use Collect and update usage statistics every n (mm:ss) to set the statistics collection interval. FileMaker Server writes this information to a log file.

When you enable statistical logging for FileMaker Server, a log file is created in the FileMaker Server/Data/Logs/ folder.

Operating system	Statistics log name	View log in
Windows	Stats.log	▪ Performance Logs and Alerts (Windows 2000 Server)
		▪ System Monitor (Windows Server 2003)
Mac OS	Stats.log	▪ The Console application
		▪ Any application that can read tab-delimited data

You can view these statistics by opening the Stats.log file in any application that can read tab-delimited data (FileMaker Pro, a spreadsheet, or a text editor) or the Console application (Mac OS). You can also view real-time usage statistics in the Statistics view of FileMaker Server Admin.

Note The Console application on the Mac OS allows you to view a .log file while also displaying updates to that file.

For information on the types of statistics that are collected in the statistics log, see "Viewing usage statistics for FileMaker Server" on page 50.

Managing log files

When Stats.log reaches its maximum size, FileMaker Server renames it Stats-old.log and creates a new Stats.log.

Displaying statistics

In Windows, you can chart real-time statistics for various aspects of FileMaker Server performance. See "Monitoring server performance (Windows)" on page 50.

Logging FileMaker Server events

Events that occur while FileMaker Server is running are logged and timestamped. Typical events that are logged include FileMaker Server starting and stopping, database files opening and closing, clients logging in and out, scheduled tasks running, and changes to FileMaker Server properties.

In Windows, events are logged in the Windows Application Log. For more information, see "Viewing activities in the Event Viewer (Windows)" on page 51. In the Mac OS, events are logged in the tab-delimited Event.log file that is created in the FileMaker Server/Data/Logs/ folder. When this file reaches 40 MB, it is renamed Event-old.log and a new Event.log file is created. For more information, see "Viewing activities in the Event.log (Mac OS)" on page 51.

Configuring the Event Viewer (Windows)

You can configure the Event Viewer log files to overwrite event information, because the default setting is to stop recording events when the log files become full. If you have many databases open with many users accessing them, and if you flush the cache often, the log files could fill up quickly and the information in the log files could quickly become out of date.

You can configure the Event Viewer log files by selecting the log file in the Console Root and choosing Action menu > Properties.

You can increase the Maximum Log Size setting from the default 512 KB, depending on how much FileMaker Server activity you anticipate on your server computer. You can also select Overwrite Events as Needed to continue logging events after the log file is full.

Configuring a directory service

Windows: Change properties in the Directory Service assistant or select host and then choose Action menu > Properties > Directory Service tab.
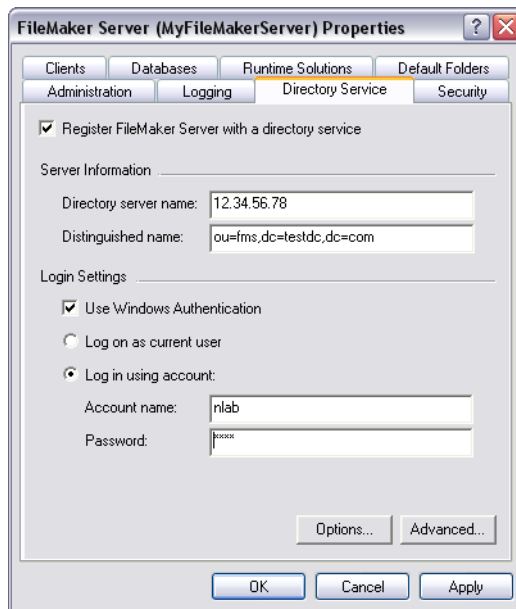
Mac OS: To change properties, choose View menu > Configure, then click the Directory Service tab.
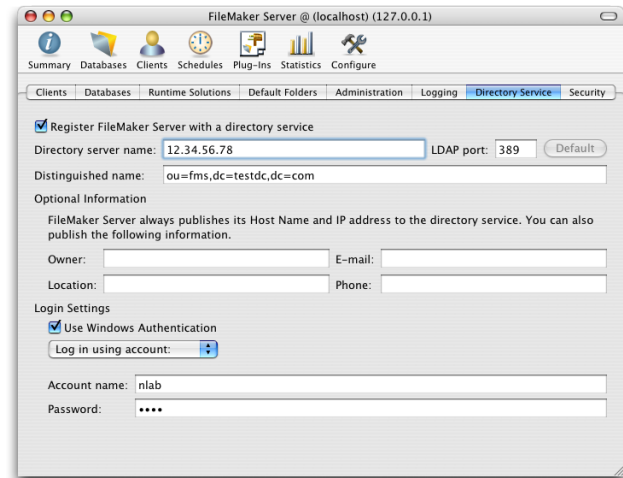
If your organization uses a Lightweight Directory Access Protocol (LDAP)-compliant directory service, such as Microsoft Active Directory, Netscape Directory, OpenLDAP, or Open Directory (Mac OS X10.4), you can centrally manage your hosted databases by registering FileMaker Server with your directory service.

When FileMaker Server is registered with an LDAP-compliant directory service, its server name and IP address are published to the directory service. The FileMaker Server administrator's contact information can also be published.

Registering FileMaker Server with a directory service

Your system administrator should be able to give you the information you need to complete the required directory service settings.

■ Specifying the login settings

Choose from the following options for user authentication.

Choose	To
Use Windows Authentication	Use the account name and password of a Windows domain to access Microsoft Active Directory
Log on as current user	Log on using the current Windows account, if Use Windows Authentication is selected.
Log on anonymously	Log on without specifying an account name and password. (This option is not available if Use Windows Authentication is selected.)
Log on using account	Log on using the account name and password you specify

See "Authenticating client log in" on page 41 for more information.

■ Publishing your contact information to your directory service

As the FileMaker Server administrator, you can publish your name, location, phone number, and email address to your directory service. This is useful if the directory service administrator needs to contact you (for example, if hosted databases are unavailable for client access).

Windows: Click the Options button to access these fields.

■ Changing the port number

The port number setting indicates the type of the port required by your directory service. Some LDAP-compliant directory services use a port number other than the default, 389.

Windows: Click the Advanced button to change the LDAP port number.

Setting FileMaker Server security

Use the Security tab to configure client authentication, filter the display of database files, and enable secure connections to FileMaker Server.

Windows: Configure FileMaker Server security with the Security assistant or select host and then choose Action menu > Properties > Security tab.
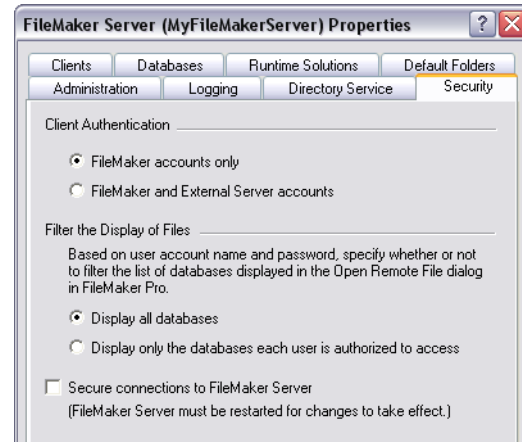
Mac OS: To configure FileMaker Server security, choose View menu > Configure, then click the Security tab.

Defining groups for use with security features (Windows)

If you are serving files that use External Server accounts, in order to use administrator authentication, client authentication, or to filter the display of database files for local or domain users, you must:

1. Define a group on the local system or domain controller. See Windows Help for more information on defining groups.

Important For administrator authentication, this account must be named fmsadmin.

2. Assign to this group the user accounts that will use external server authentication.

Authenticating client log in

Client access to hosted databases is determined by accounts defined in FileMaker Pro. You can choose how FileMaker Pro clients are authenticated when they connect to databases hosted by FileMaker Server.

If you choose FileMaker accounts only, the clients' access privileges are determined by the accounts defined in the hosted databases.

If you choose FileMaker and External Server Accounts, the clients' access privileges are determined by the accounts defined in the hosted databases and by accounts that are set up on the same computer as FileMaker Server (locally) or on an authentication server such as Mac OS X Server or a Windows Domain server. This allows you to use your existing authentication server to control access to databases without having to manage an independent list of accounts in each hosted database file. See "Creating accounts that authenticate via an external server" in FileMaker Pro Help and www.filemaker.com/server for more information.

Windows: If you choose FileMaker and External Server Accounts, records of all logon attempts are logged in the Windows Security Log. For more information about the Security Log, see your Windows documentation.

To prevent clients from viewing or modifying data, scripts, and layouts in FileMaker Pro, create a privilege set in each of the hosted files in FileMaker Pro. See "Protecting databases with accounts and privilege sets" in FileMaker Pro Help for more information.

Filtering the display of files

You can limit the list of FileMaker Server-hosted databases displayed in FileMaker Pro to only those databases that each client can access. If you choose Display only the databases each user is authorized to access, the list of databases displayed is determined by the client's access privileges to each hosted database. If you choose Display all databases, all FileMaker Server hosted databases are displayed to the client.

Note This setting only affects the display of databases hosted by FileMaker Server. Databases hosted peer-to-peer using FileMaker Pro are not affected.

Securing connections to FileMaker Server

To protect sensitive data, you can encrypt data passed between FileMaker Server and clients. If Secure connections to FileMaker Server is enabled, all FileMaker Server client connections use the Secure Sockets Layer, except ODBC and JDBC connections. For more information about data security, see the *FileMaker Security Guide*.

Important Secure connections are slower because of data encryption. Data transfer rates are affected by the number of clients and the amount of data transferred.

Note Restart FileMaker Server if the secure connections property is changed.

Protecting files with accounts and privileges

It is important to use the access privileges in FileMaker Pro when files are shared on a network. Using FileMaker Pro, you can restrict what users see and do in a database file by defining accounts and privilege sets. *Accounts* authenticate clients who are attempting to open a protected file. *Privilege sets* specify a level of access to the database file, limiting what clients can do with the layouts and fields they can see.

Important Protect shared FileMaker Pro files by using FileMaker Pro accounts and privilege sets. Although the shared FileMaker Pro files can reside on a file server, which may have its own security scheme, any files available to FileMaker Pro clients bypass network and file server protection. For more information about protecting files, see the *FileMaker Pro User's Guide* or FileMaker Pro Help.

Restoring FileMaker Server default settings

To restore all default settings, uninstall and reinstall FileMaker Server. For more information, see chapter 3, "Installing FileMaker Server."

How FileMaker Server behaves during system sleep or abnormal shutdown

Windows supports Power Conservation mode, which can cause the server computer to sleep (hibernate or enter Standby mode). This suspends access to hosted databases.

Mac OS computers can suspend operation when they enter an energy-saving system sleep state.

FileMaker Inc. recommends that you disable sleep mode on computers running FileMaker Server.

To prevent your system from sleeping:

■ Windows: Clear Enable hibernation in the Power options control panel on the computer running FileMaker Server.

■ Mac OS: Disable system sleep in the Energy Saver pane by setting the slider control to Never in the Put the computer to sleep when it is inactive for area.

If sleep is enabled on the computer running FileMaker Server, it's important to understand how FileMaker Server reacts, if the computer enters sleep mode:

■ If there are no clients connected to hosted files when the operating system notifies FileMaker Server that it is going to sleep, FileMaker Server flushes the cache to disk and leaves hosted databases open. Because the cache is saved to disk before the computer sleeps, hosted databases experience no data loss and are opened when the operating system wakes up.

Note Database backups or scripts scheduled in FileMaker Server do not run while the operating system is sleeping.

■ If there are clients connected to FileMaker Server when the operating system notifies FileMaker Server that it is going to sleep, FileMaker Server responds to the operating system, instructing that it should not sleep while FileMaker Server is running.

If the operating system shuts down unexpectedly while clients are connected and before the cache can be written to disk (for example, because the battery is critically low, the computer is overheating, or a user turns off the server computer in an emergency), FileMaker Server attempts to recover the state of hosted files when it restarts. As it opens the files in the default database folder and the additional database folder, FileMaker Server performs a consistency check on each file. If a file is found to be corrupt, FileMaker Server logs a corruption event in the Application Log (Windows) or Event.log (Mac OS).

Whenever FileMaker Server restarts after sleep or a forced shutdown, you should always check the Application Log (Windows) or Event.log (Mac OS) for database corruption notifications. For more information about viewing the events, see "Viewing activities in the Event Viewer (Windows)" or "Viewing activities in the Event.log (Mac OS)" on page 51.

Also, check your scheduled tasks to ensure that important backups or scripts were not scheduled to run while the operating system was asleep or off. These tasks will not run until the next scheduled time when FileMaker Server is running and the operating system is awake.

Chapter 6
Administering FileMaker Server

This chapter provides information about starting and stopping FileMaker Server, monitoring FileMaker Server events, statistics and performance, enabling plug-ins, and using FileMaker Server in Mac OS.

Starting FileMaker Server (Windows)

FileMaker Server running in Windows has two primary components: an administration application called FileMaker Server Admin, and the services that comprise FileMaker Server.

If you didn't choose to start FileMaker Server automatically during Windows startup or if you stopped FileMaker Server, you can start it again manually.

To start the FileMaker Server service locally:

1. Choose the Start button > Programs > FileMaker Server Admin.

2. Expand the Windows Administrative Tools node in the Console Root.

3. Select Services (Local).

4. Select FileMaker Server 8 in the Details Pane.

5. Choose Action menu > Start.

Starting the FileMaker Server service also starts the FileMaker Server Helper service.

To start the FileMaker Server service on a remote computer:

1. Choose the Start button > Programs > FileMaker Server Admin.

2. Choose Action menu > Connect to FileMaker Server.

3. In the Connect to FileMaker Server dialog box, enter the IP address for the remote server for Address at the bottom of the dialog box, or select Favorite Servers from the menu at the top of the dialog box.

Note You must have previously saved the server's IP address as a Favorite Server.

4. Select the Server you want to connect to.

If you don't see the server you want, the FileMaker Server Helper Service may not be running. The FileMaker Server Helper service must be running on the remote computer and the Allow remote users to administer FileMaker Server preference must be enabled.

5. Click Connect.

You see the following message:

"FileMaker Server [server name] [IP address] is not running. Would you like to start FileMaker Server and then connect?"

6. Click Yes.

The FileMaker Server Helper service must be running for an administrator to connect to FileMaker Server. If it is not running, you see a message that you can't connect.

FileMaker Server opens the FileMaker Pro files for access by FileMaker Pro clients on the network. For information about starting the FileMaker Server service from the command prompt, see "Using the command line to automate tasks" on page 54.

Notes

- You can make a shortcut for FileMaker Server Admin, but not for the FileMaker Server application.

- Typically, FileMaker Server is automatically started when the computer is started. This can be specified during installation or with the Service Property dialog box.

Stopping FileMaker Server (Windows)

Stopping the FileMaker Server service disconnects all FileMaker Pro clients, closes all database files hosted by FileMaker Server, and disconnects all instances of FileMaker Server Admin. This process works only on a connected server and may take several minutes.

To stop the FileMaker Server service locally:

1. Choose the Start button > Programs > FileMaker Server Admin.

2. Expand the Windows Administrative Tools node in the Console Root.

3. Select Services (Local).

4. Select FileMaker Server 8 in the Details Pane.

5. Choose Action menu > Stop.

You see a message informing you that Windows is attempting to stop FileMaker Server on the local computer.

To stop the FileMaker Server service on a remote computer:

1. Choose the Start button > Programs > FileMaker Server Admin.

2. Connect to the FileMaker Server that you want to stop.

3. Choose Action menu > Stop FileMaker Server.

4. You see a message asking for confirmation that you want to stop FileMaker Server.

5. Click Yes.

If you have large files or files with many connected clients, the stopping process may take several minutes. If you encounter problems, try disconnecting clients. For more information see "Disconnecting clients" on page 30. Also try closing hosted files. For more information see "Closing hosted files" on page 30.

Notes

- Quitting FileMaker Server Admin does not stop the FileMaker Server service.

- Stopping the FileMaker Server service does not stop the FileMaker Server Helper service.

- Clients are requested to close the files hosted by FileMaker Server.

Starting FileMaker Server (Mac OS)

FileMaker Server running in the Mac OS has two primary components: an administration application called FileMaker Server Admin, and the daemons (UNIX processes with no interface) that comprise FileMaker Server.

To start the FileMaker Server daemon locally:

1. In FileMaker Server Admin, choose Server menu > Local FileMaker Server Administration.

2. Click the lock.

3. At the prompt, enter an OS-level user name and password.

The account must have administrative privileges.

4. Click Start FileMaker Server Processes.

Both the FileMaker Server and FileMaker Server Helper daemons start.

To start the FileMaker Server daemon on a remote computer:

Note The FileMaker Server Helper daemon must be running on the remote computer and the Allow remote users to administer FileMaker Server preference must be enabled.

1. In FileMaker Server Admin, choose Server menu > Connect to FileMaker Server.

2. Select the Server you want to connect to.

3. In the Connect to FileMaker Server dialog box, with no item selected in the Favorite Servers list, click Add to Favorites.

4. Double-click FileMaker Server in the list, then type the hostname.

5. Double-click Address/Hostname, then type the IP address.

6. Click Connect.

You see the following message:

"FileMaker Server [server name] [IP address] is not running. Would you like to start FileMaker Server and then connect?"

7. Click Yes.

FileMaker Server opens the FileMaker Pro files for access by FileMaker Pro clients on the network. For information about starting the FileMaker Server service from the command prompt, see "Using the command line to automate tasks" on page 54.

Notes

■ Mac OS: You can use the Activity Monitor application to see if FileMaker Server or FileMaker Server Helper is running. Use `fms` as the process filter. See Mac OS Help for more information.

■ You can make an alias for FileMaker Server Admin, but not for the FileMaker Server application.

■ Typically, FileMaker Server is automatically started when the computer is started. This can be specified during installation or with the Local FileMaker Server Administration dialog box.

Stopping FileMaker Server (Mac OS)

Stopping the FileMaker Server daemon disconnects all FileMaker Pro clients, closes all database files hosted by FileMaker Server, and disconnects all instances of FileMaker Server Admin. This process works only on a connected server and may take several minutes.

To stop the FileMaker Server and FileMaker Server Helper daemons locally:

1. In FileMaker Server Admin, choose Server menu > Local FileMaker Server Administration.

2. Click the lock.

3. At the prompt, enter an OS-level user name and password.

Note The account must have administrative privileges.

4. Click Stop FileMaker Server Processes.

5. Both the FileMaker Server and FileMaker Server Helper daemons stop.

To stop the FileMaker Server daemon (locally or on a remote computer):

1. Connect to the FileMaker Server you intend to stop using FileMaker Server Admin.

2. In FileMaker Server Admin, choose Server menu > Stop FileMaker Server.

You see a message asking for confirmation that you want to stop FileMaker Server.

3. Click Yes.

If you have large files or files with any connected clients, the stopping process may take several minutes. If you encounter problems, try disconnecting clients. For more information see "Disconnecting clients" on page 30. Also try closing hosted files. For more information see "Closing hosted files" on page 30.

Notes

- Quitting FileMaker Server Admin does not stop the FileMaker Server daemon.

- Stopping the FileMaker Server daemon does not stop the FileMaker Server Helper daemon.

- Clients are requested to close the files hosted by FileMaker Server.

Overview of starting and stopping FileMaker Server using FileMaker Server Admin

	Mac OS X	Windows
Start FileMaker Server	**Locally:** ■ Server menu > Local FileMaker Server Administration > Start FileMaker Server Processes button Starts fmserver and Helper daemons ■ Server menu > Connect to FileMaker Server This starts the fmserver daemon if the Helper daemon is already running	**Locally:** ■ Services (Local) node Starts fmserver and Helper services ■ Action menu > Connect to FileMaker Server This starts the fmserver service if the Helper service is already running
	On a remote computer: ■ Server menu > Connect to FileMaker Server Starts fmserver daemon if the Helper daemon is running remotely and the Allow remote users to administer FileMaker Server preference is enabled	**On a remote computer:** ■ Action menu > Connect to FileMaker Server Starts fmserver service if the Helper service is running remotely and the Allow remote users to administer FileMaker Server preference is enabled

	Mac OS X	Windows
Stop FileMaker Server	**Locally:** ■ Server menu > Local FileMaker Server Administration > Stop FileMaker Server Processes button Stops the fmserver and Helper daemons	**Locally:** ■ Services (Local) node Select the fmserver service to stop only the fmserver service. Select the Helper service to stop both services.
	On a remote computer: ■ Server menu > Stop FileMaker Server. Click Yes. Stops only the fmserver daemon on the server to which you are connected through FileMaker Server Admin	**On a remote computer:** ■ Action menu > Stop FileMaker Server Stops only the fmserver service on the server to which you are connected through FileMaker Server Admin

Connecting to FileMaker Server using FileMaker Server Admin

After you have started FileMaker Server, you can connect to it locally or remotely using FileMaker Server Admin.

To connect to FileMaker Server:

1. Start FileMaker Server Admin.

Windows: Choose the Start button > Programs > FileMaker Server Admin.

Mac OS: Double-click the FileMaker Server Admin icon in the Applications/FileMaker Server 8/ folder.

2. Windows: Select FileMaker Server in the Console Root and choose Action menu > Connect to FileMaker Server.

Mac OS: Choose Server menu > Connect to FileMaker Server.

3. From the pop-up menu at the top of the Connect to FileMaker Server dialog box, choose Local Servers, Favorite Servers, or Servers Listed by LDAP.

If you are using FileMaker Server Admin on the same computer that is running FileMaker Server, you can choose (localhost) in the Favorite Servers view.

For a remote Server, add the IP address to Favorite Servers. You can select a Server from the Local Servers list and click Add to Favorites to add it to the Favorite Servers list.

In the Servers Listed by LDAP list, you see FileMaker Servers that have the Register FileMaker Server with a directory service property enabled.

4. Select the FileMaker Server you want to administer, then click Connect.

5. Type a user name and password, if you are prompted to enter it.

You are now ready to administer FileMaker Server using FileMaker Server Admin. See "Administering hosted databases" on page 29.

Default folders for plug-in files

Before starting FileMaker Server, be sure your plug-ins are in the proper folders.

Server plug-ins

Windows: Program Files\FileMaker\FileMaker Server\Extensions\Plugins\

Mac OS: [hard disk]/Library/FileMaker Server/Extensions/Plugins/

Plug-ins to be updated automatically on client machines

Windows: Program Files\FileMaker\FileMaker Server\Data\Databases\AutoUpdate\

Mac OS: [hard disk]/Library/FileMaker Server/Data/Databases/AutoUpdate/

For information on placing database files in the proper folders, see "Step 2. Place database files in the proper location" on page 26. For information on placing script files in the proper folders, see "Default folders for script files" on page 56.

Enabling database plug-ins

You can enable FileMaker Server to use plug-ins with hosted databases. When plug-ins are used by hosted databases, field calculations can be performed on the computer running FileMaker Server. You copy plug-ins required by the hosted databases to the FileMaker Server Extensions folder. Then, you can list and administer server plug-ins with Server Plug-ins (Windows) or View menu > Plug-ins (Mac OS). See FileMaker Server Help for more information.

For information about creating plug-ins, see "Developing third-party plug-ins" in the *FileMaker Pro Advanced Development Guide*.

Preparing Mac OS plug-in files for conversion to .tar format

Before being converted to the .tar format by FileMaker Server, Mac OS plug-in files with resource forks must be processed by software that will preserve the resource fork information.

See FileMaker Server Help for more information.

Note For information about automatically updating plug-ins on client machines, see "Allowing FileMaker Pro clients to download updates automatically" on page 33.

Viewing usage statistics for FileMaker Server

You can display usage statistics, such as how FileMaker Server is performing and how many clients are logged into FileMaker Server.

To display FileMaker Server usage statistics, select Statistics in the Console Root (Windows) or View menu > Statistics (Mac OS).

You see the Statistics list.

Type	Current	Average	Low	Peak
Network KB/sec	1	0	0	1
FileMaker Pro Clients	1	1	0	1
Files	4	4	0	4
Disk KB/sec	340	6	0	340
Cache Unsaved %	0	0	0	0
Cache Hit %	97	99	0	100

The following statistics are listed:

Statistic	Description
Network (Kbytes/sec)	Amount of data being transferred across the network.
FileMaker Pro Clients	Number of connected FileMaker Pro clients. Use this information to help configure the maximum number of simultaneously connected clients.
Files	Number of open databases. Use this information to configure the Maximum number of files to host option.
Disk (Kbytes/sec)	Amount of data being written to disk.
Cache Unsaved %	Percentage of cache that is currently unsaved. This should be a relatively low number, such as 0 or 5, so you won't lose data if you experience a system crash. If the number is consistently high, consider decreasing the cache flush interval.
Cache Hit %	Percentage of times that FileMaker Server retrieved data from the cache (RAM) rather than from the hard disk. Reading data from RAM is much more efficient than reading it from the hard disk, so this value should be a high number, like 90 or 95. If it isn't, you might need to allocate more memory to the FileMaker Server database cache.

When enabled, FileMaker Server updates the Statistics list every 15 seconds or less but no more than once a second. Although this reduces the overhead required to calculate the statistics, it means the statistics are approximations of how FileMaker Server is using resources.

For information about where usage statistics are stored, see "Recording usage statistics and setting log file size limits" on page 37.

Monitoring server performance (Windows)

To monitor usage statistics on the FileMaker Server computer, expand the Windows Administrative Tools node in the Console Root and select System Monitor.

Using the Windows System Monitor, you can chart real-time statistics for various aspects of FileMaker Server performance and display the statistics in graph, histogram, or report format. Click the + toolbar button to configure the statistics you want to chart.

You can customize the display by selecting the FileMaker Server computer, choosing FileMaker Server as the Performance Object, and selecting the Counters. The counters are the statistics described in "Viewing usage statistics for FileMaker Server" on page 50.

Note Network KB/sec, Disk KB/sec, Cache Hit %, and Cache Unsaved % give you the most information about how your system is performing.

Name of the server you are monitoring

Choose FileMaker Server

Select FileMaker Server usage statistics counters to add to your chart

Click to add a selected counter to your chart

Statistics are charted in real-time here

FileMaker Server usage statistics counters
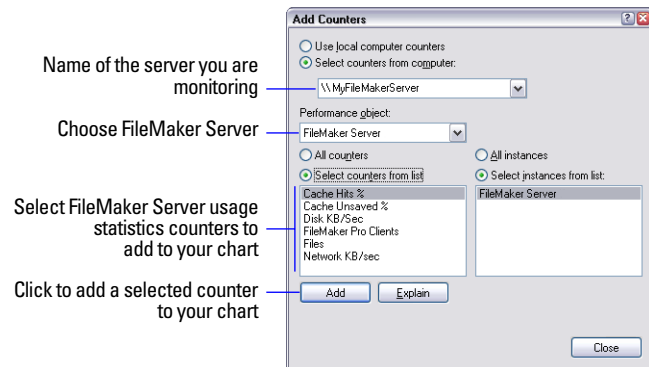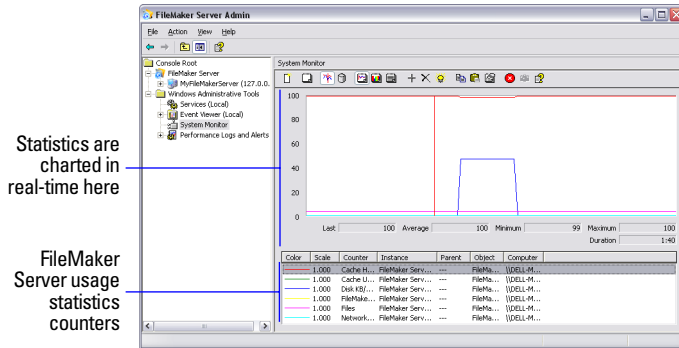
Using reported events to track activities

FileMaker Server uses the Windows Event Viewer (Windows) or Event.log (Mac OS) to help you keep track of activities on the server. These log files contain time-stamped information on:

■ FileMaker Server starting and stopping

■ database files opened and closed by FileMaker Server

■ consistency checks performed on files that were not closed properly or have not been opened in a FileMaker 8 product

■ clients that connect to and disconnect from FileMaker Server, as well as the files they access

■ clients that are disconnected by FileMaker Server

■ new, completed, upcoming, and currently running schedules

■ pre-defined errors and conditions that FileMaker Server detects in your configuration

■ current properties settings when FileMaker Server starts up, as well as settings that are changed during a FileMaker Server session

Viewing activities in the Event Viewer (Windows)

To view information about FileMaker Server activities, expand the Windows Admin Tools node in the Console Root and select Event Viewer (local). Then, open the Event Viewer to select the Application, Security, System, and FileMaker Server logs.

You see a list of FileMaker Server events. Double-click an event to display details about it.

To save the log file contents in a text file, choose Action menu > Export List to save information displayed in the Event Viewer as a tab-delimited text file (.TXT) and then import the information into a FileMaker Pro database for further analysis.

For more information about the error conditions reported in the event log, see topics on event log messages and troubleshooting in Help.

Viewing activities in the Event.log (Mac OS)

The Event.log file is created in the FileMaker Server application folder. You can use any application capable of opening plain text files or the Mac OS Console application to view or print it.

You can have the log file open in the Mac OS Console application when FileMaker Server is running. Events are logged continuously, with the most recent log entry at the bottom of the Console application window. Event.log is created when FileMaker Server starts, only if there is no existing Event.log. Activities are added to Event.log until it reaches the maximum size, at which point it is renamed Event-old.log, and a new Event.log is created.

The maximum size of the Event.log on Mac OS is 40 MB. For more information, see "Logging FileMaker Server events" on page 38.

For more information about the error conditions reported in the event log, see topics about event log messages and troubleshooting in Help.

Using FileMaker Server in Mac OS

FileMaker Server and all database files, plug-ins, and scripts must be configured with the correct privileges and permissions to function properly in Mac OS.

Mac OS is a UNIX-based operating system. When FileMaker Server runs in Mac OS, it does not run as a single executable file. Instead, FileMaker Server runs as two background processes, or *daemons*. These daemons run with restricted privileges, which limit their access to the file systems.

When you install FileMaker Server in Mac OS:

- a user named fmserver and a group named fmsadmin are created

- all databases hosted by FileMaker Server must belong to the fmsadmin group and have read and write access enabled to allow clients with the correct privileges to edit the databases

- the user account installing FileMaker Server is automatically added to the fmsadmin group

- the FileMaker Server executes as this user/group, with restricted privileges

Because FileMaker Server is a server application, it should not run with administrator or root level privileges, but with the minimum permissions levels necessary to perform its tasks.

About the FileMaker Server daemons

When installed, FileMaker Server creates the daemons fmserver_helperd and fmserverd. These are owned by the user fmserver and the group fmsadmin. The permissions for the two daemons include Set User ID, also know as the SUID bit.

The daemons are started with the user id of fmserver and group id of fmsadmin.When these daemons are executed by the system or by a user, these permissions allow the user or system to switch from the current user id to the fmserver id. This will happen automatically, provided the user is in the fmsadmin group, or is root. Otherwise, the system will return an error indicating that the user doesn't have permission to execute the file.

About file system permissions

The fmserver_helperd and fmserverd daemons can only read and write to the folders to which their privileges give them access.

FileMaker Server is primarily installed in the [hard disk]/Library/ folder, since it is normally run automatically by the system as a background application. FileMaker consolidates the necessary files for FileMaker Server in /Library/FileMaker Server/, with the exception of the FileMaker Server Admin application and administration documentation.

The /Library/FileMaker Server folder is owned by the fmserver user id and the fmsadmin group id. This means that the FileMaker Server daemons can read and write to this folder. It also means that users that belong to the fmsadmin group can write to this folder.

FileMaker Server folders in Mac OS

Folder	Purpose	Notes
/Library/FileMaker Server/ Data/Databases/	Primary database folder	This folder and subfolders must be owned by the fmsadmin group.
		It is important that any databases placed in the Databases folder or subfolders are group readable and writable.
/Library/FileMaker Server/ Data/Backups/	Default backup folder	This folder and subfolders must be readable, writable, and executable by the fmsadmin group

Folder	Purpose	Notes
/Library/FileMaker Server/ Data/Logs/	Output folder for Event.log and Stats.log	Server administrators must be members of the group fmsadmin to be able to read and delete log files.
/Library/FileMaker Server/ Data/Scripts/	Location for shell and other script files	The administrator can place any shell or other script files that are to be executed as scheduled script tasks in this folder. It is important that any script files placed in this folder or subfolders are owned by the fmsadmin group and are group readable and executable.
/Library/FileMaker Server/ Extensions/Plugins/	Location for plug-ins hosted by FileMaker Server	It is important that any plug-ins placed in the Plugins folder or subfolders are owned by the fmsadmin group and are group readable and executable.
Library/FileMaker Server/ Data/Databases/AutoUpdate/	Location for plug-ins to be updated using the AutoUpdate Plugins feature. For more information see the PDF document, *FileMaker Guide to Updating Plug-ins*.	It is important that any plug-ins placed in the AutoUpdate folder or subfolders are owned by the fmsadmin group and are group readable and executable.

Keep these points in mind:

■ Any Mac OS subfolders containing databases, backups, script files, or plug-ins must also be readable and executable by the fmsadmin group. Some plug-ins or scripts that use preferences or folders of additional files may require write permission to those files or folders.

■ If the administrator changes the default backup location, or specifies a different backup location, the folder must be writable by the group fmsadmin, or backups will fail.

■ Your shell script is executed with the fmserver user id and fmsadmin group id. Therefore, you cannot call some privileged commands from your scripts. For example, your script will not have access to delete the /etc folder. It is recommended that you enable some form of logging for your script to be able to troubleshoot possible permissions issues. Refer to the Apple web site for information on creating log files in Mac OS.

Changing script and plug-in file permissions

To change the group and permissions for scripts and plug-ins, do the following:

1. Launch the Terminal application ([hard disk]/Applications/Utilities/Terminal).

2. Change directories to the directory where the file or folder resides.

```
cd <filepath>
```

3. Change the owner of the item to fmserver, if necessary.

```
chown fmserver <filename>
```

or

```
chown -R fmserver <folder>
```

4. Change the group of the item to fmsadmin, if necessary.

```
chgrp fmsadmin <filename>
```

or

```
chgrp -R fmsadmin <folder>
```

5. Set permissions to:

```
chmod 660 <filename>
```

or

```
chmod -R 770 <folder>
```

6. Enable the group read and executable bits by entering the following at the command line:

```
chmod g+rx <filepath>
```

or

```
chmod g+wrx <filepath>
```

The `g+rx` is necessary because scripts and plug-ins must have the group read and executable bits enabled. Use the `g+wrx` form to permit write permission as well. Some plug-ins or scripts that use preferences or folders of additional files may require write permission to those files or folders.

See FileMaker Server Help and Mac OS Help for more information, including the man (online UNIX manual) pages for `chgrp(1)`, `chmod(1)`, `sudo(8)`. For example, type `man chgrp` at the Terminal prompt.

Using the command line to automate tasks

You can administer FileMaker Server using the command `fmsadmin` at the command prompt (Windows) or the Terminal application (Mac OS) for tasks such as opening and closing databases, enabling and disabling plug-ins, enabling and disabling schedules, and performing scheduled tasks.

Note FileMaker Server commands can optionally include the user name and password. If a command is used interactively, the name and password are visible and can be viewed by others. If a command must include a name and password in a script or batch file, ensure that only the password owner can view the script or batch file.

The following table lists a summary of `fmsadmin` commands. For detailed command syntax, see Help.

fmsadmin commands	Description
Backup	Back up databases
Close	Close databases
Delete	Delete a schedule
Disable	Disable plug-ins or scheduled tasks
Disconnect	Disconnect a client
Enable	Enable plug-ins or scheduled tasks
Help	Get Help pages for fmsadmin commands
List	List files, clients, plug-ins, or schedules
Open	Open databases
Pause	Temporarily stop database access
Reload	Reload configuration properties
Resume	Make databases available
Run	Run a schedule
Send	Send a message
Status	Get status of clients or files
Stop	Shut down the server

Chapter 7
Scheduling administrative tasks

You can use the FileMaker Server Task Scheduling assistant (Windows) or Schedules (Mac OS) to define three kinds of tasks and set the times that they execute. You can:

- schedule database backups
- run script files
- send messages to clients of hosted databases

A new scheduled task is enabled by default, which means the task will run at its scheduled time after you close the Schedules window. For more information about enabling and disabling scheduled tasks, see page 58.

You can define up to 50 schedules in FileMaker Server. If you set up schedules that overlap, FileMaker Server starts the first task and holds the next task in a queue. When the first task has completed, the next task will begin.

You can perform many actions related to scheduled tasks from the command line interface in Windows or Mac OS. For more information, see "Using the command line to automate tasks" on page 54. You can also use utilities such as the Scheduled Task Wizard (Windows OS) or cron (Mac OS command line interface) for running automated tasks similar to those provided by FileMaker Server.

Note See Help for step-by-step procedures concerning defining and managing scheduled tasks.

Scheduling database backups

You can:

- back up all hosted open databases
- back up hosted databases that are in a selected folder

Database backups are saved in the default backup folder or in a folder that you specify. To set the default backup folder, choose Properties menu > Default Folders (Windows) or Configure menu > Default Folders (Mac OS).

During backups, FileMaker Server copies the database while it is active and users continue to make modifications. When the copy is complete, the database is paused to synchronize backup files with the current database and then the database is resumed.

The destination disk that stores your hosted files and backups must have plenty of free space. If the hard disk runs out of space while a file is being modified or if a database file reaches the 8 Terabytes size limit, the file will be compressed.

If the hard disk runs out of space during a backup, the backup stops, the backup file is deleted, and FileMaker Server logs an error in the Application log (Windows) or Event.log (Mac OS). You should check the schedules list for error conditions, which are reported in the Last Run column. To avoid running out of disk space when backing up files, choose tape or a different hard disk as your backup destination.

Running script files

You can use a script to automate administrative tasks performed by FileMaker Server. For more information, see FileMaker Server Help.

Default folders for script files

Before starting FileMaker Server, be sure your command files (Windows) or shell scripts (Mac OS) are in the proper folders.

Windows: Program Files\FileMaker\FileMaker Server\Data\Scripts\

Mac OS: [hard disk]/Library/FileMaker Server/Data/Scripts/

For more information, see "FileMaker Server folders in Mac OS" on page 52.

Modifying file permissions for shell scripts (Mac OS)

Your shell script is executed with the `fmserver` user id and `fmsadmin` group id. Therefore, you cannot call some privileged commands from your scripts. For example, your script will not have access to the `/etc` folder.

It is recommended that you enable some form of logging in order for your script to be able to troubleshoot possible permissions issues. Refer to the Apple web site for information on creating log files in Mac OS.

Sending messages to clients of hosted databases

You can:

■ Send a message to all clients who are currently connected to hosted databases

■ Send a message to clients of all open databases in a selected folder

Viewing scheduled tasks in the Schedules view (Windows)

After you create scheduled tasks, they appear in the schedules list. The list shows you a summary of each defined schedule, including the last time the task ran and the next time it will run.

To display the schedules list, select the Schedules node in the Console Root.

Click buttons on the toolbar to administer scheduled tasks
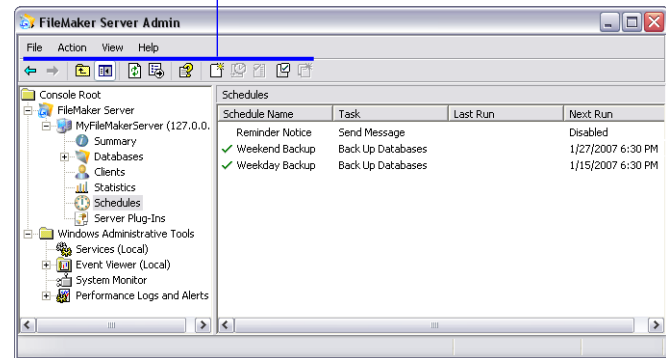
You can use this view of your scheduled tasks to change, duplicate, enable, disable, and run tasks manually.

Viewing scheduled tasks in the Schedules view (Mac OS)

After you create a scheduled task, it appears in the Schedules view.

To display the Schedules view, choose Schedules.

Click a column heading to sort the list by that column

Drag the border to change the column width

Click a checkbox to disable or enable a scheduled task
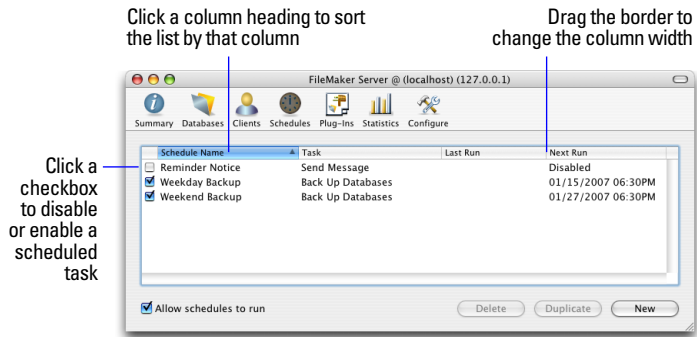
The list shows you a summary of each defined schedule, including the task it performs, the last time it ran, and the next time it will run.

You can use this view of your scheduled tasks to change, duplicate, enable, disable, and run schedules manually.

Running scheduled tasks manually

Select schedules in the schedules list and choose Action menu > Run Now (Windows) or Action menu > Schedules > Run Schedule Now (Mac OS) to run schedules manually.

The Last Run column is updated with the current date and time.

Editing scheduled tasks

Select a scheduled task in the schedules list and open Properties (Windows) or choose Action menu > Schedules > Edit Schedule (Mac OS). Make changes to the scheduled task, then save the changes.

Duplicating scheduled tasks

Sometimes it's easier to use an existing scheduled task as a template, rather than defining a completely new schedule.

Windows: Select one or more scheduled tasks and choose Action menu > Duplicate. The duplicate schedule appears with "copy " appended to its name.

Mac OS: Select a scheduled task and choose Action menu > Schedules > Duplicate Schedule. The duplicate schedule appears with "Copy of" appended to its name.

Deleting scheduled tasks

Windows: Select one or more scheduled tasks from the schedules list and choose Action menu > Delete.

Mac OS: Select a scheduled task and choose Action menu > Schedules > Delete Schedule.

You see a confirmation message asking you to confirm that you want to delete the selected schedule.

Note You can't undo the deletion of a schedule.

Enabling and disabling scheduled tasks

You can enable or disable selected schedules or disable all schedules at once.

To perform this action	Do this
Enable a schedule when creating or editing it	In the scheduled task Properties (Windows) or Edit Schedule dialog box (Mac OS), be sure Enable this schedule is selected.
	When you create a schedule, the scheduled task is enabled by default.
Enable or disable a schedule	Windows: Select or deselect one or more schedules in the schedules list and choose Action menu > Enabled. A checkmark appears next to the Enabled command in the Action menu to indicate the current selection is enabled.
	Mac OS: In the schedules list, select the empty checkbox to the left of the schedule name. A checkmark appears, indicating that the scheduled task is enabled.
Prevent or allow all schedules to run	Windows: Select or deselect Action menu > Allow schedules to run.
	Mac OS: Choose the Schedules list > Allow Schedules to Run checkbox at the bottom of the schedules list.
	This setting overrides any individual schedule settings you have enabled and all checkmarks in the list are dimmed and the Next Run column lists the scheduled tasks as Disabled. If you open the scheduled task Properties (Windows) or Edit Schedule dialog box (Mac OS) for a disabled scheduled task, however, the checkmark in the Enable this schedule option might still be checked.

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