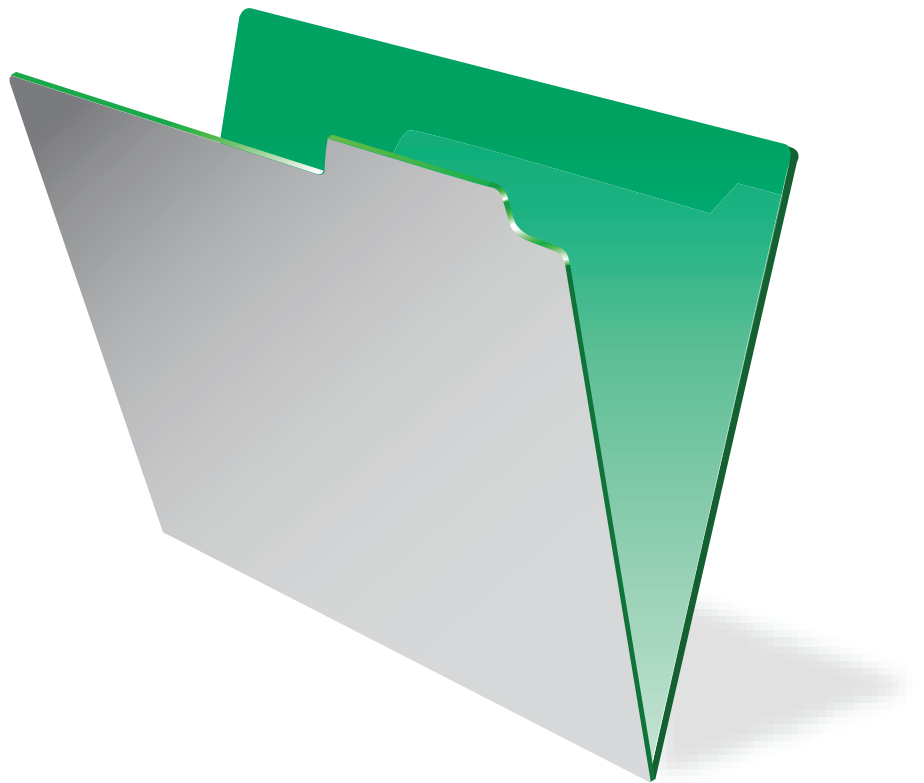


# FileMaker® Server 9 Help



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Edition: 01

# FileMaker Server 9 Help

## Answers to Your FileMaker Server Questions



### [Uploading database files](#)

Use the Upload Database assistant to transfer databases from any networked computer to FileMaker Server.



### [Backing up databases](#)

Set up schedules to automatically back up databases on FileMaker Server.



### [Hosting a website](#)

Learn where to place your files.



### [Troubleshooting](#)

Find solutions to common problems.

## Are You New to FileMaker Server?

### [What is FileMaker Server?](#)

Find out what you can do.

### [FileMaker Server Getting Started Guide](#)

Learn how to install and start using FileMaker Server. See the Start Page.

### [What's new in FileMaker Server?](#)

[All-new Admin Console, server-side scripting, more...](#)

## On the Web

### [Video Demos and Resources](#)

Take a tour of key features and find more resources.

### [FileMaker Server Technologies](#)

Learn about ODBC, external SQL data sources, web publishing, and more.

### [Knowledge Base](#)

Find more answers now.

### [Customer Support](#)

Get service and support.

This document contains the same information provided in the online Help system for FileMaker Server 9. It is provided in this format to enable you to read the information independent of the Help system.

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## About FileMaker Server

FileMaker® Server is a dedicated database server that opens [FileMaker Pro](#) files, makes them available to clients on your network, and publishes FileMaker data in web pages or to other applications.

FileMaker Server Advanced has all the features of FileMaker Server plus:

- Instant Web Publishing. See [Using Instant Web Publishing](#) (page 50).
- Sharing data as a SQL data source via ODBC and JDBC. See [Sharing FileMaker databases via ODBC and JDBC](#) (page 103).

To upgrade an existing FileMaker Server [deployment](#) to FileMaker Server Advanced, you need a FileMaker Server Advanced license key. You can enter a new license without reinstalling any software. To update your license key, see [Server information settings](#) (page 55).

### Supported clients

Supported clients include:

- FileMaker Pro 7, 8, 8.5, and 9
- Web users accessing data via the FileMaker Server [Web Publishing Engine](#)
- FileMaker ODBC (Open Database Connectivity) and JDBC (Java Database Connectivity) clients using the FileMaker client [drivers](#) (FileMaker Server Advanced license required)

### Admin Console

FileMaker Server Admin Console is an application that lets you easily configure and administer FileMaker Server, work with and monitor hosted databases and clients, and track statistical information.

You can run Admin Console on the same machine where FileMaker Server is running or on almost any Windows or Mac OS machine that has network access to FileMaker Server. See [Starting Admin Console](#) (page 29).

### Related topic

[New features in FileMaker Server 9](#) (page 9)

# New features in FileMaker Server 9

FileMaker Server 9 includes the following new features and improvements:

## All-new Admin Console

- Start from almost any networked computer. No installation required.
- Same user interface on both Windows and Mac OS.
- Configure and administer all FileMaker Server components from a single administration application.

## Run server-side ScriptMaker scripts

- Schedule a [ScriptMaker™](#) script in a hosted database to run on FileMaker Server. See [Running ScriptMaker scripts](#) (page 131).

## Upload databases

- Upload Database [assistant](#) enables you to [upload](#) databases to FileMaker Server from almost any networked computer. See [Uploading database files](#) (page 33).
- Upload multiple databases at once.
- Requires administrator login.

## Receive email notifications

- Get an email message when scheduled backups and scripts complete successfully. See [Enabling email notifications in schedules](#) (page 147).
- Know when FileMaker Server logs errors and warnings. See [Email notification settings](#) (page 57).

## Publish data to external web sites using PHP

- Custom Web Publishing with [PHP](#) enables you to access FileMaker data from a PHP web application. See [Hosting PHP websites](#) (page 45).
- The FileMaker [API](#) for PHP provides a FileMaker-supported, object-oriented interface to FileMaker databases.

## Create server-based connections to external SQL data sources

- Host FileMaker Pro databases designed to connect to external [SQL data sources](#) via [ODBC](#).
- Set up connections on FileMaker Server to external data sources. Clients of FileMaker Server need no special [drivers](#) or set up. See [Accessing external ODBC data sources](#) (page 105).

## Other features

- View detailed information about clients and the databases they are using. See [Administering clients](#) (page 88) and [Administering databases](#) (page 93).
- Remove databases from FileMaker Server using Admin Console. See [Removing hosted files](#) (page 100).

## New features in FileMaker Server 9

- Control how much information is logged by FileMaker Server. See [Logging and statistics settings](#) (page 76).

### **Related topic**

[About FileMaker Server](#) (page 8)

## Deploying FileMaker Server

When you install FileMaker Server, you decide whether to deploy FileMaker Server on a single machine or on multiple machines.

In a multiple-machine [deployment](#), one machine is always the master and the others are workers.

- The **master machine** is always the machine on which the [Database Server](#) is deployed.
- The **worker machines** are the machines that run the [Web Publishing Engine](#) or the [web server](#).

In a single-machine deployment, all components run on one machine, which can be considered the master machine.

For more information, see [Which deployment type is right for me?](#) (page 23)

After you install FileMaker Server on the master machine, the Deployment [assistant](#) guides you through the process of deploying FileMaker Server components.

The Deployment assistant helps you perform the following tasks:

- Create an administrator [account](#) that you use to login to FileMaker Server [Admin Console](#)
- Set the name of your FileMaker Server deployment
- Enable sharing via [ODBC](#) and [JDBC](#) (FileMaker Server Advanced license required)
- Enable web publishing and select the web publishing technologies you want to use
- Select a deployment type, and in a multiple-machine deployment, assign [machine roles](#)
- Specify a web server (when web publishing is enabled)

You can also test your deployment after initial setup and change your deployment later as your needs change. See [Changing a FileMaker Server deployment](#) (page 28).

**Note** If you cancel the Deployment assistant during initial deployment, Admin Console exits and FileMaker Server is not deployed. Any attempt to start Admin Console starts the Deployment assistant for you to finish deploying FileMaker Server.

### Related topics

[Testing FileMaker Server](#) (page 24)

[Checking the status of your deployment](#) (page 26)

## Setting up an administrator account

In this Deployment assistant step, set up the [account](#) that you'll use to login to FileMaker Server [Admin Console](#).

### To set up an administrator account:

1. For **User Name**, enter the name that you want to login with.
2. For **Password**, enter the password that you want to login with.  
You cannot leave **Password** empty.
3. Reenter your password in **Confirm Password**.
4. Click **Next** to go to the next step.  
Click **Cancel** to exit the Deployment assistant.

### Notes

- **User Name** is not case-sensitive.
- **Password** is case-sensitive.
- You can change the user name and password in Admin Console. You can also enable all members of a group to access Admin Console. See [Admin Console settings](#) (page 59).

### Related topic

[Deploying FileMaker Server](#) (page 11)

## Naming FileMaker Server

In this Deployment assistant step, assign a name to your FileMaker Server deployment and optionally provide additional information.

### To name your FileMaker Server deployment:

1. For **Server Name**, enter a name for your FileMaker Server deployment.  
[FileMaker Pro](#) users see this name when they use the Open Remote File dialog box.
2. For **Server Description**, enter an optional description of your FileMaker Server deployment.  
Administrators see this information on the Admin Console Start Page.
3. Under **Administrator Contact Information**, you can choose to enter contact information.  
This information appears on the Admin Console Start Page. You can also publish this information to a [directory service](#). See [Admin Console settings](#) (page 59).
4. Click **Next** to go to the next step.  
Click **Back** to return to the previous step or **Cancel** to exit the Deployment assistant.

**Note** You can change this information in Admin Console. See [Admin Console settings](#) (page 59).

### Related topic

[Deploying FileMaker Server](#) (page 11)

## Enabling sharing via ODBC and JDBC

In this Deployment assistant step, enable your server to be a [data source](#) via [ODBC](#) and [JDBC](#), if you purchased a FileMaker Server Advanced license.

### To enable sharing via ODBC and JDBC:

1. Click **Yes, enable ODBC/JDBC** to enable sharing or click **No, do not enable ODBC/JDBC** to disable.
2. Click **Next** to go to the next step.  
Click **Back** to return to the previous step or **Cancel** to exit the Deployment assistant.

### Notes

- Enabling this feature allows clients to use FileMaker Server as a data source using ODBC and JDBC. For more information, see FILEMAKER ODBC AND JDBC GUIDE on the Start Page.
- This ODBC/JDBC data source feature is not needed to host FileMaker Pro databases that access an external SQL data source via ODBC. See [Accessing external ODBC data sources](#) (page 105).
- You can change this setting in Admin Console. See [Enabling sharing via ODBC and JDBC](#) (page 104).

### Related topic

[Deploying FileMaker Server](#) (page 11)

## Enabling web publishing

In this Deployment assistant step, enable web publishing if you want to publish FileMaker databases to web users. You must enable this feature if you want to use FileMaker Server Custom Web Publishing or [Instant Web Publishing](#). For more information, see [Using Instant Web Publishing](#) (page 50), [Hosting XSLT websites](#) (page 47), or [Hosting PHP websites](#) (page 45).

### To enable web publishing:

1. Click **Yes, enable Web Publishing** to enable web publishing or click **No, do not enable Web Publishing** to disable.
2. Click **Next** to go to the next step.  
Click **Back** to return to the previous step or **Cancel** to exit the Deployment assistant.

### Notes

- To use web publishing, a supported [web server](#) must be installed and activated. For more information, see FILEMAKER SERVER GETTING STARTED GUIDE on the Start Page.
- You can change the web publishing technology settings in Admin Console. However, you must use the Deployment assistant to enable or disable web publishing as a whole (click **Edit Server Deployment** on the FileMaker Server Overview pane).

### Related topics

[Deploying FileMaker Server](#) (page 11)

[Enabling technologies for web publishing](#) (page 16)

## Enabling technologies for web publishing

In this Deployment assistant step, choose the technologies you want to use to publish your FileMaker databases on the web.

### To enable the technologies for web publishing:

1. Select the web publishing technologies that you want to use.

If you want to	Enable
Send HTTP requests along with <a href="#">XML</a> query commands and parameters and retrieve FileMaker data as an XML document.	<b>XML</b>
Transform, filter, or format XML data in a FileMaker database using <a href="#">XSLT</a> stylesheets for use in a web browser or in other applications.	<b>XSLT</b>
Quickly and easily publish FileMaker databases on the web that look and work much like they do in FileMaker Pro.	<b>Instant Web Publishing</b> Requires a FileMaker Server Advanced license.
Access FileMaker data using the FileMaker <a href="#">API</a> for <a href="#">PHP</a> in PHP web applications.	<b>PHP</b>

2. If you enable PHP publishing, choose whether to install the FileMaker supplied version of PHP.

If you want to	Choose
Install FileMaker supplied PHP and the FileMaker API for PHP	<b>Yes, install the FileMaker supported version of PHP (PHP 5.2)</b> If you already have PHP installed, it will be disabled.
Use your own installation of PHP	<b>No, use my existing installation of the PHP engine</b> FileMaker Server supports PHP versions 4.3.11, PHP 4.4.1, and PHP 5.x. You must manually install the FileMaker API for PHP. For instructions, see FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH PHP on the Start Page.

3. Click **Next** to go to the next step.  
Click **Back** to return to the previous step or **Cancel** to exit the Deployment assistant.

### Notes

- Enabling [Instant Web Publishing](#) requires a FileMaker Server Advanced license.
- You can change the web publishing technology settings in [Admin Console](#). However, you must use the Deployment assistant to change the option to use the FileMaker supported PHP engine. See [Hosting PHP websites](#) (page 45).
- If you use your own version of PHP, you must manually install the FileMaker API for PHP in order to use PHP publishing. See FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH PHP for more information.

**Related topics**

[Deploying FileMaker Server](#) (page 11)

[Enabling web publishing](#) (page 15)

[Changing a FileMaker Server deployment](#) (page 28)

## Selecting a deployment type

In this Deployment assistant step, choose how to deploy FileMaker Server components. FileMaker Server includes three components: the [Database Server](#), [Web Publishing Engine](#), and [Web Server](#) components. With the Deployment assistant, you can choose to deploy these components on one, two, or three machines to meet your needs.

See [Which deployment type is right for me?](#) (page 23) for more information.

### To select a deployment type:

1. For **Deployment Type**, choose one of the following:

Deployment type	Deployment details
<b>Single Machine</b>	<b>Master:</b> all FileMaker Server components
<b>Two Machines</b>	Master: Database Server <b>Worker:</b> Web Publishing Engine and web server
<b>Two Machines (Alternative)</b>	Master: Database Server and Web Publishing Engine Worker: web server
<b>Three Machines</b>	Master: Database Server Worker: Web Publishing Engine Worker: web server

2. Click **Next** to go to the next step.

Click **Back** to return to the previous step or **Cancel** to exit the Deployment assistant.

### Notes

- The master machine is always the machine that runs the Database Server.
- If you are deploying FileMaker Server components on more than one machine, install the software on the worker machines first and then the master machine to ensure a smoother deployment process.

### Related topics

[Deploying FileMaker Server](#) (page 11)

[Assigning worker machine roles](#) (page 19)

## Assigning worker machine roles

In this Deployment assistant step, unassigned [worker](#) machines on your local network are detected and presented with their [IP addresses](#) in the list beside each machine role. Assign a worker machine to each machine role ([Web Publishing Engine](#) or [web server](#)).

### To assign a worker machine role:

1. In the **Machines** column beside the machine role that you want to assign, choose the IP address of an unassigned worker machine.  
If the address of a worker is not listed, click **Rescan**. Then check to see whether the worker is listed.
2. If a worker's IP address is still not listed, enter the address in **IP Address** and click **Lookup**.  
The IP address you entered is added to the **Machines** list if the machine can be contacted and is an available worker.
3. Click **Next** to go to the next step.  
Click **Back** to return to the previous step or **Cancel** to exit the Deployment assistant.

### Notes

- You will not be able to see your worker machines if the necessary ports of your firewall are not open. See [Ports used by FileMaker Server](#) (page 161).
- If you are deploying FileMaker Server components on more than one machine, install the software on the worker machines first and then the [master](#) machine to ensure a smoother deployment process.
- If you cannot find the IP addresses for the worker machines on your network, see [Ports used by FileMaker Server](#) (page 161).

### Related topics

[Deploying FileMaker Server](#) (page 11)

[Selecting a deployment type](#) (page 18)

## Specifying a web server

In this Deployment assistant step, specify a [web server](#) to use for web publishing.

### To specify the web server:

1. For **Web server**, select the web server you wish to use.

If you want to configure the web server setting later, click **Skip this step and configure later**.

**Note** If you skip this step, web publishing will not be available and you will have to use **Edit Server Deployment** to activate it later.

2. Click **Next** to go to the next step.

Click **Back** to return to the previous step or **Cancel** to exit the Deployment assistant.

### Notes

- If the Deployment assistant fails to detect the web server, check that you have installed and enabled the web server. Also check that the necessary firewall ports are open. Review the instructions provided in the FILEMAKER SERVER GETTING STARTED GUIDE on the Start Page.
- If you are deploying FileMaker Server components on more than one machine, install the software on the [worker](#) machines first and then on the [master](#) machine to ensure a smoother deployment process.
- If you cannot find the IP addresses for the web server on your network, see [Web Server Test Failed](#) (page 21).

### Related topic

[Deploying FileMaker Server](#) (page 11)

## Web Server Test Failed

If the Deployment assistant cannot communicate with the [web server](#) that you specified, you can provide more information and try again.

### To change web server settings:

1. In the **Web Server Test Failed** step in the Deployment assistant, specify the settings to use to communicate with the web server.

To change	Do this
The protocol FileMaker Server uses to communicate with the web server	For <b>Protocol</b> , choose either <b>HTTP</b> or <b>HTTPS</b> . If the web server is configured to use HTTPS, choose <b>HTTPS</b> to enable FileMaker Server to communicate with the web server securely via <a href="#">SSL</a> .
The host address of the web server	For <b>Host address</b> , enter the <a href="#">IP address</a> or host name.
The port to communicate with the web server	For <b>Port</b> , enter a port number.

2. Click **Retry**.
3. Examine the **Web Server Test Results**:
  - If successful, the result is Web Server Test Passed.
  - If unsuccessful, the Deployment assistant could not communicate with the web server. This test can fail if your web server requires HTTPS or uses a port other than 80. You can re-enter this information and try to communicate with the web server again.
 

Ensure that you can access the web server from the [master](#) machine — for example, using a web browser — and try these steps again.

If still unsuccessful, then click **Skip this step and configure later**.
4. Click **Next** to go to the next step.
 

Click **Back** to return to the previous step or **Cancel** to exit the Deployment assistant.

### Related topics

[Deploying FileMaker Server](#) (page 11)

[Specifying a web server](#) (page 20)

## Deployment summary

In this Deployment assistant step, review and confirm your deployment selections before FileMaker Server implements them.

### To confirm your deployment:

- Click **Finish** if you are satisfied with your deployment details.

The Deployment assistant deploys FileMaker Server according to your selections. This may take a few minutes.

- Otherwise, click **Back** to return to the previous step or **Cancel** to exit the Deployment assistant.

### Notes

- If [Admin Console](#) doesn't start after deployment on the [master](#) machine, try the following:
  - On the Start Page, click **Click here to start Admin Console**.
  - Open a web browser on the master machine and enter `http://localhost:16000`.

### Related topics

[Deploying FileMaker Server](#) (page 11)

[Changing a FileMaker Server deployment](#) (page 28)

## Which deployment type is right for me?

The type of [deployment](#) you should use depends primarily on the web publishing load, as summarized below. The greater the web publishing load, the more machines you may want to include in your FileMaker Server deployment. You can first deploy on fewer machines and, if the load increases over time, you can change the deployment later to use up to three machines.

FileMaker Server use	Deployment type
<a href="#">FileMaker Pro</a> clients only	Single machine. No benefit from a multiple-machine deployment.
Solution development and testing	Single machine. No benefit from a multiple-machine deployment.
FileMaker Pro clients and moderate web publishing load	Single machine. Provides good web publishing performance in most environments. You can expand to a multiple-machine deployment later, if web publishing load increases.  Two machines (alternative). Available when you need to integrate with an existing <a href="#">web server</a> on a separate machine.
Moderate to heavy web publishing load	Multiple machines. You can expand from two to three machines as load increases.
FileMaker Pro clients and heavy web publishing load	Multiple machines. Deploy only the <a href="#">Database Server</a> on the <a href="#">master</a> machine. Deploy the <a href="#">Web Publishing Engine</a> and web server on one or two <a href="#">worker</a> machines.  Three machines. Select this only when you: <ul style="list-style-type: none"> <li>• Need to combine the performance improvement of the two-machine deployment with separate web server offered by the two-machine (alternative) deployment type.</li> <li>• Expect a high volume of static web traffic in addition to FileMaker Pro and dynamic web publishing traffic.</li> </ul>

If you're considering a multiple-machine deployment, three variations give you the flexibility to decide which components are on each machine. For details, see FILEMAKER SERVER GETTING STARTED GUIDE on the Start Page.

### Related topics

[Deploying FileMaker Server](#) (page 11)

[Selecting a deployment type](#) (page 18)

[Assigning worker machine roles](#) (page 19)

## Testing FileMaker Server

The easiest way to test your FileMaker Server [deployment](#) is to use the Technology Tests page. The links on this page access the hosted FMServer\_Sample.fp7 database via the technologies listed below. If a test succeeds, then all the FileMaker Server components are working.

### To test the FileMaker Server deployment:

1. Open the Technology Tests page.

There are two ways to view the page:

- Start Admin Console and click the Open Test Page icon:



- Type the following in a web browser:

```
http://[host or IP address of master]:16000/test
```

2. Click the link for each test that you want to perform.

To	Do this
Test <a href="#">FileMaker Pro</a>	<p>Click <b>Test FileMaker Pro</b>.</p> <p>If FileMaker Pro starts and successfully opens the sample database hosted on FileMaker Server, then the <a href="#">Database Server</a> is working and responding to requests from FileMaker Pro clients.</p> <p><b>Note</b> You must have FileMaker Pro or FileMaker Pro Advanced installed locally on the machine where you are conducting the test.</p> <p><b>Tip</b> You can perform the same test another way: start FileMaker Pro from any networked machine, click <b>File</b> menu &gt; <b>Open Remote</b>, select the server you want to test, and select FMServer_Sample.fp7.</p>
Test <a href="#">Instant Web Publishing</a>	<p>Click <b>Test Instant Web Publishing</b>.</p> <p>If another web browser window or tab opens and displays the sample database, then Instant Web Publishing is working.</p> <p><b>Note</b> A FileMaker Server Advanced license is required.</p>
Test <a href="#">PHP Custom Web Publishing</a>	<p>Click <b>Test PHP Custom Web Publishing</b>.</p> <p>If another web browser window or tab opens and displays a table containing data from the sample database, then Custom Web Publishing with PHP is working.</p>
Test <a href="#">XSLT Custom Web Publishing</a>	<p>Click <b>Test XSLT Custom Web Publishing</b>.</p> <p>If another web browser window or tab opens and displays a table containing data from the sample database, then Custom Web Publishing with XSLT is working.</p>

### Related topics

[Deploying FileMaker Server](#) (page 11)

[Configuring Database Server settings](#) (page 62)

[Configuring web publishing settings](#) (page 78)

## Checking the status of your deployment

The **FileMaker Server Overview** pane displays real-time status information about your FileMaker Server [deployment](#) updated every few seconds.

The **Server Status Information** area shows the overall condition of your FileMaker Server deployment.

The diagram illustrates how many machines are in your deployment along with the [IP address](#) of each machine and the status of the [Database Server](#), [Web Publishing Engine](#), and [web server](#). If the indicator next to any component name is red, then that component is not functioning or the [master](#) machine cannot communicate with the [worker](#) machine the component is running on.

The diagram also shows whether a supported web publishing technology or [ODBC/JDBC](#) sharing is enabled (ON/OFF).

The **Server Information** list provides the following:

Server information	Description
<b>FileMaker Server Host Name</b>	The name you assigned to your FileMaker Server deployment. To change the name, see <a href="#">Server information settings</a> (page 55).
<b>Server Version</b>	The version of FileMaker Server.
<b>Server Start Time</b>	The date and time stamp when the server was last started.
<b>Hosted Files</b>	The number of databases that are currently open.
<b>FileMaker Pro Clients</b>	The number of clients connected using <a href="#">FileMaker Pro</a> .
<b>Instant Web Publishing Sessions</b>	The number of web publishing sessions currently used by <a href="#">Instant Web Publishing</a> .
<b>Custom Web Publishing Sessions</b>	The number of web publishing sessions currently used by <a href="#">Custom Web Publishing</a> .  <b>Note</b> The sessions count shown on the <b>FileMaker Server Overview</b> pane is an instantaneous count that is updated at the same interval as the statistics log. This data is not subject to the five-second threshold that is required for sessions to appear in the <b>Clients</b> or <b>Databases</b> panes.
<b>ODBC/JDBC Sessions</b>	The number of database sessions currently used by ODBC and JDBC clients.

To change the number and role of machines in your deployment, click **Edit Server Deployment**. For more information, see [Changing a FileMaker Server deployment](#) (page 28).

To change the maximum number of web publishing sessions, see [General web publishing settings](#) (page 79).

### Notes

- Instant Web Publishing and sharing via ODBC/JDBC require a FileMaker Server Advanced license.
- If you set up a machine as a worker and want to change it to a master, uninstall and then reinstall FileMaker Server. Choose **Master** in the installer's Master/Worker Designation dialog box. For more information on moving an existing installation, see the FILEMAKER SERVER GETTING STARTED GUIDE on the Start Page.

### **Related topics**

[Troubleshooting](#) (page 156)

[Deploying FileMaker Server](#) (page 11)

# Changing a FileMaker Server deployment

You can first [deploy](#) on fewer machines and, if the web publishing load increases over time, you can use the Deployment [assistant](#) to change your FileMaker Server deployment to use up to three machines.

## To change a FileMaker Server deployment:

1. Click **FileMaker Server Overview**, then click the **Edit Server Deployment** link.

The Deployment assistant starts.

2. Click **Next** until you see the options you want to change.

The Deployment assistant shows the current selections.

3. Change any of the selections in these Deployment assistant steps:

- [Enabling web publishing](#) (page 15)
- [Enabling technologies for web publishing](#) (page 16)
- [Selecting a deployment type](#) (page 18)
- [Assigning worker machine roles](#) (page 19)
- [Specifying a web server](#) (page 20)

Except for enabling or disabling specific web publishing technologies, the other steps listed above can be changed only in the Deployment assistant. You can change all other settings in the Admin Console panes under **Configuration**.

4. In the Deployment Summary step, review your selections and click **Finish** to confirm your selections.

FileMaker Server implements your deployment changes. This may take a few minutes.

Click **Back** to return to the previous step or **Cancel** to cancel the deployment.

## Notes

- To change the [master](#) machine, you must uninstall FileMaker Server and reinstall it on the new master machine. You should also uninstall and then reinstall the [worker](#) machines in a multiple-machine deployment. For more information on upgrading or moving FileMaker Server from an existing installation, see the FILEMAKER SERVER GETTING STARTED GUIDE on the Start Page.
- You can add one more worker machine to a two-machine deployment and you can add up to two worker machines to a single-machine deployment.
- You can also remove worker machines from an existing deployment.

## Related topic

[Deploying FileMaker Server](#) (page 11)

# Starting Admin Console

You can start FileMaker Server Admin Console on a Windows or Mac OS computer that has network access to the [master](#) machine in your FileMaker Server [deployment](#). FileMaker Server delivers Admin Console as a lightweight Java client to your remote computer via [Java Web Start](#) technology.

**Note** Remote computers must have at least version 5 of the Java Runtime Environment installed before they can start Admin Console.

## To start Admin Console:

1. Open a web browser and enter:

```
http://<host>:16000
```

where <host> is the [IP address](#) or [domain name](#) of the master machine in your FileMaker Server deployment.

The Admin Console Start Page appears.

2. Click **Start Admin Console**.

The admin\_console\_webstart.jnlp file downloads to your machine.

3. Before Admin Console starts, you must respond to a security message. The security message is a signed certificate that ensures the authenticity of the product and it must be accepted to start Admin Console. To suppress this message in the future and continue:

- Windows: enable **Always trust content from this publisher**, then click **Run**.
- Mac OS: click **Show Certificate** and open **Trust Settings**. For **When using this certificate**, choose **Always Trust**, then click **Trust**.

4. In the Create Shortcut dialog box, click **Yes** to create a shortcut that you can use to start Admin Console again later.

Windows: A shortcut is created on the desktop and in the **Start** menu under **FileMaker Server**. Depending on the version of Java installed, the shortcuts are created without prompting you.

Mac OS: After you click **Yes**, specify a name and location in the Save dialog box where to save the shortcut, and then click **Save**.

The shortcut is helpful if you are managing several deployments of FileMaker Server from the same machine. The shortcut name starts with "FMS9-" and is followed by the FileMaker Server name that you specified in the Deployment [assistant](#).

5. In the Admin Console Login dialog box, enter the user name and password for the Admin Console [account](#).

Admin Console starts and displays the FileMaker Server Overview pane.

## Notes

- Each shortcut starts Admin Console for a specific FileMaker Server deployment. If the IP address of the master machine changes, you must remove the shortcut and start Admin Console from the Admin Console Start Page again.
- Admin Console always displays in the language of the base OS installation on the master machine. The language setting of the machine running Admin Console has no effect.
- Internet Explorer: If the Start Page doesn't appear, click the Information Bar at the top of the browser window and allow Internet Explorer to run the Java Web Start ActiveX Control add-on.

## Starting Admin Console

- If Admin Console doesn't start, your browser might have downloaded the Java Web Start file but might not have started it. Check your web browser configuration to enable Java or automatically open downloaded files. You can also look for the `admin_console_webstart.jnlp` file where your browser saves downloaded files. Double-click this file to start Admin Console.

### **Related topic**

[Admin Console problems](#) (page 158)

[About FileMaker Server](#) (page 8)

# Hosting databases

Before you can share FileMaker Pro database files, it's important to prepare the files for hosting. The steps below provide an overview of the process.

1. Edit the accounts and privileges sets that clients will use for shared access. See [Editing accounts and privilege sets](#) (page 32).
2. [Upload](#) the database files to FileMaker Server. See [Uploading database files](#) (page 33).
3. Verify the status of your files in the Admin Console **Databases** pane, and verify that the files are available to FileMaker clients. See [Verifying databases are available to FileMaker Pro clients](#) (page 42).

## Notes

- You must convert databases created in FileMaker Pro 6 and earlier to FileMaker Pro 7 format. FileMaker Pro versions 7, 8, 8.5, and 9 share the same file format. See FileMaker Pro Help for information on converting files.
- If a hosted database is designed to access data from an external [SQL data source](#), you must set up the same [ODBC data source name \(DSN\)](#) on the FileMaker Server [master](#) machine as was set up on the machine running FileMaker Pro when the database was created. See [Accessing external ODBC data sources](#) (page 105).
- If a hosted database uses server-side [plug-ins](#) or if you want to automatically update client-side plug-ins, then you must place the plug-ins on FileMaker Server also. See [Managing plug-ins](#) (page 119).
- You cannot use peer-to-peer database hosting in FileMaker Pro on the same computer that FileMaker Server is running on.
- As FileMaker Server opens files that were not closed properly or have not been opened in a FileMaker 8 or later product, FileMaker Server performs a consistency check on each file and logs the result of the check in the event log.
- Up to 125 FileMaker Pro database files can be hosted on FileMaker Server and automatically opened when FileMaker Server starts.

## Related topics

[Administering databases](#) (page 93)

[Closing hosted files](#) (page 97)

[Administering clients](#) (page 88)

[Viewing statistics](#) (page 108)

[Sending messages to FileMaker Pro clients](#) (page 91)

[Enabling auto-update for plug-ins](#) (page 123)

## Editing accounts and privilege sets

In [FileMaker Pro](#), edit the accounts and [privilege sets](#) that clients will use for access to each database. Choose **File** menu > **Manage** > **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**). 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. For more information on setting the length of time a user must be idle before being disconnected, see [FileMaker Pro client settings](#) (page 63).
- If you plan to use external [authentication](#), then you must edit each FileMaker Pro account that clients will use for shared access. In the Edit Account dialog box, for **Account is authenticated via**, choose **External Server**. For more information on enabling external authentication for FileMaker Pro accounts, see FileMaker Pro Help. For more information on setting up FileMaker Server to support external authentication, see [Database Server security settings](#) (page 70).

### Related topics

[Uploading database files](#) (page 33)

[Verifying databases are available to FileMaker Pro clients](#) (page 42)

[Hosting databases](#) (page 31)

## Uploading database files

Use the Upload Database [assistant](#) to transfer database files from your computer's file system to FileMaker Server, and optionally have FileMaker Server open the files.

### To upload database files to FileMaker Server:

1. Ensure that the appropriate accounts and privilege sets are enabled.  
See [Editing accounts and privilege sets](#) (page 32).
2. If the database files are open, you must close them before you can [upload](#) them.
3. Click the Upload Database icon in the [toolbar](#) to start the Upload Database assistant:



4. Select the FileMaker Server folder where you want to place the database files. Or click **Create Subfolder** to create a new subfolder.

FileMaker Server hosts database files in the default database folder and in an optional additional database folder that you can specify as described in [Default folder settings](#) (page 73). You can also create one level of subfolders in either folder.

5. Click **Add Database**, select one or more databases to upload to FileMaker Server, then click **Select**.

---

**Important** Database files must be closed before you can upload them. If you have the databases open in FileMaker Pro, for each file choose **File** menu > **Close**.

---

See [Selecting databases to upload](#) (page 38) for more information.

6. Click **Next**.
7. Select **Automatically open databases after upload** if you want FileMaker Server to open the database immediately after the upload is complete.  
See [Specifying an upload option](#) (page 39) for more information.
8. Click **Next**.
9. View the upload progress. When completed, click **Next**.  
See [Viewing the database upload status](#) (page 40) for more information.
10. Confirm the status of the uploaded database files and click **Finish**.  
See [Reviewing the upload summary](#) (page 41) for more information.

For detailed instructions, click the Help button in the Upload Database assistant.

### Notes

- Alternate ways to start the Upload Database assistant are:
  - Click **Server** menu > **Upload Database**.
  - Choose **Databases** > **Actions** menu > **Upload database** and click **Perform Action**.
  - Move your mouse to the **Databases** pane, then right-click your mouse, and select **Upload database**.

- After uploading is complete, the [Database Server](#) checks whether a database has some form of sharing enabled. If no sharing is enabled, the Database Server automatically enables sharing via FileMaker Network ([extended privilege](#) `fmapp`) for the Full Access [privilege set](#).
- For information on how to remove databases that are already hosted, see [Removing hosted files](#) (page 100).
- You can upload only files with a filename extension of `.fp7` or of a registered runtime solution. For more information on registered runtime file types, see [Database settings](#) (page 67).
- File names must be unique for the entire server regardless of the folder or subfolder.
- You can also manually copy database files to FileMaker Server. See [Uploading database files manually](#) (page 35).
- In Mac OS, the Upload Database assistant automatically sets the file owner to `fmserver` and the group to `fmsadmin`. Both the owner and group have read and write permission, but others have read-only permission. You must set ownership and permissions yourself if you upload databases manually.

### Related topics

[Verifying databases are available to FileMaker Pro clients](#) (page 42)

[Hosting databases](#) (page 31)

## Uploading database files manually

You can manually copy FileMaker Pro database files to FileMaker Server instead of using the Upload Database [assistant](#). However, you must be sure to do the following:

- Place database files in the proper location.
- Change group ownership for files (Mac OS only).

---

**Important** If you need to move, copy, or rename a hosted file, be sure to close it first.

---

### Place database files in the proper location

Place the FileMaker Pro database files that you want FileMaker Server to open — or shortcuts (Windows) or aliases (Mac OS) to those files — in the following folders:

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Data\Databases\
- Mac OS: /Library/FileMaker Server/Data/Databases/

Or you can place your files in an optionally specified additional database folder. See [Default folder settings](#) (page 73).

### Change group ownership for files (Mac OS)

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.

For more information, see [Users, groups, and permissions \(Mac OS\)](#) (page 36).

**Note** Any Mac OS subfolders containing databases, backups, script files, or [plug-ins](#) must also be readable and executable by the `fmsadmin` group. Database and [backup](#) folders need to be writable by the `fmsadmin` group for backups and [uploads](#). Some plug-ins or scripts that use preferences or folders of additional files may require write permission to those files or folders.

### Related topics

[Uploading database files](#) (page 33)

[Verifying databases are available to FileMaker Pro clients](#) (page 42)

[Enabling auto-update for plug-ins](#) (page 123)

## Users, groups, and permissions (Mac OS)

**Note** The Upload Database [assistant](#) automatically sets the correct ownership and permissions in Mac OS. This section describes what you must do only if you [upload](#) databases manually.

During installation, the `fmserver` user and the `fmsadmin` group are created. The `fmsadmin` group must have read and write access to the FileMaker Pro databases that FileMaker Server hosts. You need to change the group permission to allow members of the `fmsadmin` group to edit the databases.

By default, only the Mac OS X user [account](#) that installed FileMaker Server can:

- manually operate FileMaker Server from the command line
- add files to or remove files from the FileMaker Server folder
- access any of the FileMaker Pro databases stored within the FileMaker Server default database and [backup](#) folders

**Note** Any user with the correct login, however, can access the FileMaker Server Admin Console application.

To allow other user accounts to work with FileMaker Server and database files, you can add them to the `fmsadmin` group using the [NetInfo](#) Manager or Terminal applications. This task must be performed by a user with administrative privileges.

### To add a user to the `fmsadmin` group using NetInfo Manager in Mac OS X 10.4:

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

1. Start the NetInfo Manager application (`/Applications/Utilities/NetInfo Manager/`).
2. Select **groups** in the second column (labeled “”).
3. Select **fmsadmin** in the groups column.
4. Select **users** in the **Property** pane, located in the bottom half of the NetInfo Manager window.
5. Click the lock and enter an administrative password.
6. Choose **Directory** menu > **Insert Value**.
7. Enter the login account name of the user you are adding.
8. Choose **Domain** menu > **Save Changes**.
9. In the Confirm Modification alert box, click **Update this copy** to confirm your changes.
10. Choose **NetInfo Manager** menu > **Quit NetInfo Manager**.

For more information on ways to add users to the `fmsadmin` group, see the FileMaker Knowledge Base. See [Customer support and Knowledge Base](#) (page 198).

---

**Important** The following procedures are recommended only for advanced users who are familiar with the Terminal application. You must be logged in with administrative privileges.

---

**To add a user to the `fmsadmin` group using the Terminal application:**

1. Start the Terminal application (/Applications/Utilities/Terminal/).
2. Enter the following at the command line:

```
sudo dseditgroup -o edit -a username -t user fmsadmin
```

where *username* is the name of the existing user you wish to add to the `fmsadmin` group.

**To change group permissions for database files hosted by FileMaker Server:**

1. Place database files in the folder /FileMaker Server/Data/Databases/ or the optional additional database folder.
2. Start the Terminal application and use the `cd` command to set your path as needed.
3. Enter the following at the command line:

```
chmod g+rw <filename>.fp7
```

where *filename* is the name of the database

**To change the group of a file or folder to the `fmsadmin` group:**

1. Start the Terminal application and use the `cd` command to set your path as needed.
2. Enter the following at the command line:

```
chgrp fmsadmin <filepath>
```

Example: `chgrp fmsadmin dbfile.fp7`

**Related topics**

[Editing accounts and privilege sets](#) (page 32)

[Uploading database files](#) (page 33)

[Verifying databases are available to FileMaker Pro clients](#) (page 42)

## Selecting databases to upload

---

**Important** Database files must be closed before you can [upload](#) them. Uploading a database file that is open in FileMaker Pro could result in data loss. If you have the databases open in FileMaker Pro, for each file choose **File** menu > **Close**.

---

1. Select the FileMaker Server folder where you want to place the database files.

FileMaker Server hosts database files in the default database folder and in an additional database folder that you can specify as described in [Default folder settings](#) (page 73).

Alternatively, you can create subfolders in the default and additional database folders. Select the default or additional database folder then click **Create Subfolder** to create a new subfolder. Enter the new folder **Name** in the dialog box and click **OK**.

2. Click **Add Database** to open the select databases dialog.
3. Select one or more database files on your local file system that you want to upload and click **Select**.

**Tip** Use Ctrl+click (Windows) or ⌘-click (Mac OS) to select multiple files.

The Upload Database [assistant](#) lists the databases to be uploaded in the selected folder in bold type.

4. To remove a database from the list, select the database and click **Remove**.

You can remove from the list only databases that have not been uploaded yet. Removing a database from the list does not delete or otherwise change the database file. You can also remove a subfolder in the same way.

5. Click **Next** to specify options to open the database.  
Click **Cancel** to exit the Upload Database assistant.

### Notes

- You can upload only files with a filename extension of .fp7 or with a filename extension of a registered runtime solution. You can't upload a folder or an application package (Mac OS), but you can select multiple files that are in the same folder and upload them at one time.
- You cannot overwrite a hosted file using the Upload Database assistant. To replace a hosted file with another file that has the same filename, you must close and remove the hosted file and then upload the new file.
- For information on how to remove databases that are already hosted, see [Removing hosted files](#) (page 100).
- Database files should be writable in Windows or Mac OS (and unlocked in Mac OS) before you upload them. You will see a warning message when you upload a read-only or locked file. See Windows Help or Mac OS Help for how to make read-only files writable and how to unlock files.

### Related topic

[Uploading database files](#) (page 33)

## Specifying an upload option

1. You can optionally select **Automatically open the database after upload**.

Select this option to open all files after the [upload](#) is complete. If you don't select this option, the uploaded databases remain closed. To open the files later, see [Opening hosted files](#) (page 96).

2. Click **Next** to begin the database upload.

Click **Back** to return to the previous pane or **Cancel** to exit the Database Upload [assistant](#).

**Note** The Upload Database assistant checks whether a database has some form of sharing enabled. If no sharing is enabled, the [Database Server](#) automatically enables sharing via FileMaker Network ([extended privilege](#) `fmapp`) for the Full Access [privilege set](#).

### Related topic

[Uploading database files](#) (page 33)

## Viewing the database upload status

During the [upload](#), you can view the progress. When the upload is complete, you can:

- Click **Next** when the database upload successfully completes.
- If the upload fails, click **Back** to return to a previous step to correct the problem.
- Click **Cancel** to exit the Upload Database [assistant](#).

**Note** If you want to stop the upload, click **Cancel** next to the progress meter. The upload stops and FileMaker Server discards all files uploaded in this operation.

### Related topic

[Uploading database files](#) (page 33)

## Reviewing the upload summary

Database files that have [uploaded](#) successfully are listed **OK** in the **Status** column. If there is an error, the **Message** column describes the problem uploading the associated database.

- Click **Finish** to exit the Upload Database [assistant](#).

Click **Back** to return to the previous pane.

**Note** An upload can fail because the database is open. If you have the database open in [FileMaker Pro](#) on your computer, choose **File** menu > **Close** and try to upload the database again.

### Related topic

[Uploading database files](#) (page 33)

## Verifying databases are available to FileMaker Pro clients

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. In the **Databases** pane, the databases are listed as **Normal** in the **Status** column.

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

- the status of files listed in the **Databases** pane is **Normal**
- the **Pro** column contains a check mark (the `f_mapp` [extended privilege](#) is set for at least one [account](#))
- you can open remote files in FileMaker Pro
- review the [Event.log](#) (or the Windows [Event Viewer](#)) for FileMaker Server messages about opening the file

### To verify the status of files listed in the Databases pane:

1. Start FileMaker Server Admin Console. See [Starting Admin Console](#) (page 29).
2. Click **Databases**.

If you manually 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. For **Actions**, select **Open**.
4. Click **Perform Action**.

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 or later product, FileMaker Server performs a consistency check on each file and logs the result of the check in the event log.

**Tip** If a folder containing databases is closed, click the handle next to the folder to open it. If the databases are still not visible, it may be necessary to refresh the Databases pane. Select **Databases**, then click **Refresh**.

5. If the **Pro** column does not contain a check mark, then no user can open the hosted database with FileMaker Pro. You must close the file on the server and open it with FileMaker Pro and enable the `f_mapp` extended privilege for the desired accounts.

### To verify that a database is usable from a FileMaker Pro client machine:

1. Start 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 steps above and in [Hosting databases](#) (page 31).

### Related topics

[Editing accounts and privilege sets](#) (page 32)

[Uploading database files](#) (page 33)

[Sharing FileMaker databases via ODBC and JDBC](#) (page 103)

[Hosting XSLT websites](#) (page 47)

[Hosting PHP websites](#) (page 45)

[Closing hosted files](#) (page 97)

## Hosting websites

With FileMaker Server you can publish your FileMaker databases on the web in these ways:

To	Use	See
Access FileMaker data using the FileMaker <a href="#">API</a> for <a href="#">PHP</a> in PHP web applications	<a href="#">Custom Web Publishing</a> with PHP	<a href="#">Hosting PHP websites</a> (page 45)
Transform, filter, or format <a href="#">XML</a> data in a FileMaker database using <a href="#">XSLT</a> stylesheets for use in a web browser or in other applications	Custom Web Publishing with XSLT	<a href="#">Hosting XSLT websites</a> (page 47)
Send HTTP requests along with XML query commands and parameters and retrieve FileMaker data as an XML document	Custom Web Publishing with XML	<a href="#">Hosting databases for XML queries</a> (page 49)
Quickly and easily publish FileMaker databases on the web that look and work much like they do in <a href="#">FileMaker Pro</a>	<a href="#">Instant Web Publishing</a> (requires a FileMaker Server Advanced license)	<a href="#">Using Instant Web Publishing</a> (page 50)

## Hosting PHP websites

Custom Web Publishing with [PHP](#) lets you use the PHP scripting language to integrate data from FileMaker databases with your customized webpage layouts. In your webpages, you call the FileMaker [API](#) for PHP, which is a PHP class created by FileMaker that accesses databases hosted by FileMaker Server. This PHP class connects to the [Web Publishing Engine](#) and makes data available to your [web server's](#) PHP engine.

For more information on developing a PHP website and preparing a database, see FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH PHP on the Start Page.

### To host a website that uses Custom Web Publishing with PHP:

1. In FileMaker Pro, open the database and edit the [privilege set](#) for the [account](#) that will access the database. Enable the [extended privilege Access via PHP Web Publishing - FMS only](#).

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must use this privilege set with the extended privilege [Access via PHP Web Publishing - FMS only](#) enabled.

2. In FileMaker Server Admin Console, use the Deployment [assistant](#) to enable Custom Web Publishing with PHP and choose whether to install the FileMaker supported PHP engine, if you haven't already.

Click [Edit Server Deployment](#) on the FileMaker Server Overview pane. In the Deployment assistant, confirm your settings and click [Next](#) until you reach the Enable Web Publishing Technologies step. For more information, see [Enabling technologies for web publishing](#) (page 16).

3. In Admin Console, configure the settings on the [Web Publishing > PHP](#) tab.

For more information on configuring Custom Web Publishing with PHP, see [PHP web publishing settings](#) (page 80).

4. Verify that Custom Web Publishing with PHP is working in your FileMaker Server [deployment](#). See [Testing FileMaker Server](#) (page 24) for instructions.

5. [Upload](#) the database file to FileMaker Server with the Upload Database assistant. See [Hosting databases](#) (page 31).

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must be on the same computer.

6. Copy your PHP files to the root folder of the web server software on the machine in your FileMaker Server deployment that is running the web server:

- For IIS (Windows): [drive]:\inetpub\wwwroot
- For Apache (Mac OS): /Library/WebServer/Documents

**Note** You can also place the PHP files in an optional folder or folder hierarchy in the web server root folder.

7. Copy or move any referenced container objects to the web server machine.

If a database [container field](#) stores a file reference instead of an actual file, then the referenced container object will be stored in the FileMaker Pro Web folder when the record is created or edited. To host your site on FileMaker Server, you must then copy or move the referenced containers to a folder with the same relative location in the root folder of the web server software.

**Note** If the database file is properly hosted and accessible on FileMaker Server, and the container fields store the actual files in the FileMaker database, then you need not relocate the container field contents.

8. To access your PHP website, use the following URL syntax:

```
<scheme>://<host>[:<port>]/<path>/<filename>
```

where:

- <scheme> is the HTTP or HTTPS protocol.
- <host> is the [IP address](#) or [domain name](#) of the host computer where the web server is installed.
- <port> is optional and specifies the port that the web server is listening on. If no port is specified, then the default port for the protocol is assumed (port 80 for HTTP, or port 443 for HTTPS).
- <path> is optional and specifies the folder inside the web server root folder where the PHP file is located.
- <filename> is the filename of a page in your website.

For example:

```
http://192.168.123.101/my_site/home.php
```

### Related topics

[PHP web publishing settings](#) (page 80)

[Hosting websites](#) (page 44)

## Hosting XSLT websites

FileMaker Custom Web Publishing with [XSLT](#) provides the ability to transform, filter, or format [XML](#) data for use in a web browser or in other applications. You can use an XSLT stylesheet to transform the data between a FileMaker XML grammar and another XML grammar for use in another application or database.

For more information on developing an XSLT website and preparing a database, see FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH XML AND XSLT on the Start Page.

### To host a website that uses Custom Web Publishing with XSLT:

1. In FileMaker Pro, open the database and edit the [privilege set](#) for the [account](#) that will access the database. Enable the [extended privilege Access via XSLT Web Publishing - FMS only](#).

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must use this privilege set with the extended privilege [Access via XSLT Web Publishing - FMS only](#) enabled.

2. In FileMaker Server Admin Console, enable and configure XSLT Web Publishing on the [Web Publishing > XSLT](#) tab.
3. Verify that Custom Web Publishing with XSLT is working in your FileMaker Server [deployment](#). See [Testing FileMaker Server](#) (page 24) for instructions.
4. [Upload](#) the database file to FileMaker Server with the Upload Database [assistant](#). See [Hosting databases](#) (page 31).

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must be on the same computer.

5. Copy the XSLT stylesheets to the following directory on the machine that is running the [Web Publishing Engine](#):

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Web Publishing\xslt-template-files
- Mac OS: /Library/FileMaker Server/Web Publishing/xslt-template-files

**Note** You can also place the stylesheets in an optional folder or folder hierarchy in the xslt-template-files folder.

6. Copy any referenced container objects to the [web server](#) machine.

If a database [container field](#) stores a file reference instead of an actual file, then the referenced container object will be stored in the FileMaker Pro Web folder when the record is created or edited. To stage your site, you must copy or move the referenced containers to a folder with the same relative location in the root folder of the web server software.

**Note** If the database file is properly hosted and accessible on FileMaker Server, and the container fields store the actual files in the FileMaker database, then you don't need to relocate the container field contents.

7. Use the following URL syntax to request and process an XSLT stylesheet, and generate the resulting HTML:

```
<scheme>://<host>[:<port>]/fmi/xsl/<path>/<stylesheet>.xsl[?<query string>]
```

where:

- <scheme> is the HTTP or HTTPS protocol.

- <host> is the [IP address](#) or [domain name](#) of the host computer where the web server is installed.
- <port> is optional and specifies the port that the web server is listening on. If no port is specified, then the default port for the protocol is assumed (port 80 for HTTP, or port 443 for HTTPS).
- <path> is optional and specifies the folder inside the xslt-template-files folder where the XSLT stylesheet is located.
- <stylesheet> is the name of the stylesheet with an .xsl extension.
- <query string> can be a combination of one query command and one or more query parameters for Custom Web Publishing with XSLT.

### Related topics

[XSLT web publishing settings](#) (page 82)

[Hosting websites](#) (page 44)

## Hosting databases for XML queries

FileMaker Custom Web Publishing with [XML](#) enables you to send query requests to FileMaker Server, and display, modify, or manipulate the resulting data as needed. Using an HTTP request along with the appropriate query commands and parameters, you can retrieve FileMaker data as an XML document.

For more information on preparing a database and accessing XML data, see CUSTOM WEB PUBLISHING WITH XML AND XSLT on the Start Page.

### To host a database that uses Custom Web Publishing with XML:

1. In FileMaker Pro, open the database and edit the [privilege set](#) for the [account](#) that will access the database. Enable the [extended privilege Access via XML Web Publishing - FMS only](#).

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must use this privilege set with the extended privilege [Access via XML Web Publishing - FMS only](#) enabled.

2. In FileMaker Server Admin Console, select [Enable XML publishing](#) on the [Web Publishing > XML](#) tab.
3. Prepare databases for Custom Web Publishing. For more information, see FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH XML AND XSLT.
4. [Upload](#) the database file to FileMaker Server with the Upload Database [assistant](#). See [Hosting databases](#) (page 31).

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must be on the same computer.

5. Send an HTTP or HTTPS request in the form of a URL that specifies the FileMaker XML grammar, one query command, and one or more FileMaker query parameters to the [Web Publishing Engine](#) through an HTML form, an HREF link, or a script in your program or webpage. You can also type the URL in a web browser.

For more information on specifying a URL for XML data, see FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH XML AND XSLT.

### Related topics

[XML web publishing settings](#) (page 86)

[Hosting websites](#) (page 44)

## Using Instant Web Publishing

Instant Web Publishing allows you to quickly and easily publish your database on the web. You don't need to modify your database files or install additional software — anyone with compatible web browser software and access to the internet or an intranet can connect to your database to view, edit, sort, or search records, if you give them [access privileges](#).

**Note** Instant Web Publishing is available only if you have a FileMaker Server Advanced license.

For more information on developing a FileMaker Pro database that works well with Instant Web Publishing, see FILEMAKER INSTANT WEB PUBLISHING GUIDE on the Start Page.

### To host a website using Instant Web Publishing:

1. In FileMaker Pro, open the database and edit the [privilege set](#) for the [account](#) that will access the database. Enable the [extended privilege Access via Instant Web Publishing](#).

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must use this privilege set with the extended privilege [Access via Instant Web Publishing](#) enabled.

2. [Upload](#) the database file to FileMaker Server with the Upload Database [assistant](#). See [Hosting databases](#) (page 31).

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must be on the same computer.

3. In FileMaker Server Admin Console, enable and configure Instant Web Publishing on the [Web Publishing > Instant Web Publishing](#) tab.

4. (Optional) You can replace the default Database Homepage that web users see when they log out of a session or the session times out.

Place your custom home page named `iwp_home.html` in the following location on the machine that is running the [Web Publishing Engine](#):

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Web Publishing\IWP
- Mac OS: /Library/FileMaker Server/Web Publishing/IWP

5. If you're using static HTML pages, images, or other externally referenced files with your FileMaker database, you need to move those files to the root folder of the [web server](#) software. Make sure the relative path is preserved.

- For IIS (Windows), move the files to: [drive]:\inetpub\wwwroot
- For Apache (Mac OS), move the files to: /Library/WebServer/Documents

6. Test that your database is being published with Instant Web Publishing. Enter the following URL into a web browser:

```
http://<address>/fmi/iwp
```

where <address> is either the [IP address](#) or host name of the web server.

### Related topics

[Instant Web Publishing settings](#) (page 87)

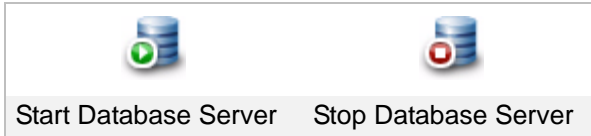
[Hosting websites](#) (page 44)

## Starting and stopping FileMaker Server

Admin Console allows you to start and stop the [Database Server](#) and the [Web Publishing Engine](#) individually without restarting the machine.

### To start or stop the Database Server:

In Admin Console, click one of the [toolbar](#) icons:



### To start or stop the Web Publishing Engine:

In Admin Console, click one of the toolbar icons:



### Notes

- If [FileMaker Pro](#) is already running while the Database Server is starting up on the same machine, the Database Server will start up but then abruptly stop. Stop FileMaker Pro, then start the Database Server. If this problem persists, restart your computer, then start the Database Server before starting FileMaker Pro.
- If you have large files or files with many connected clients, the process of stopping the Database Server may take several minutes. If you encounter problems, disconnect clients. For more information, see [Disconnecting clients](#) (page 92). Also try closing hosted files. For more information see [Closing hosted files](#) (page 97).
- When you stop the Database Server, Admin Console functionality is limited to FileMaker Server Overview. To use other functionality, you must start the Database Server again.
- When you stop the Web Publishing Engine, you must start it again before you can configure web publishing settings.
- If you need to start or stop the FileMaker Server [service](#) or [daemons](#) manually, see [Starting or stopping the FileMaker Server service \(Windows\)](#) (page 52) or [Starting or stopping FileMaker Server daemons \(Mac OS\)](#) (page 53).

### Related topic

[Auto Start settings](#) (page 61)

## Starting or stopping the FileMaker Server service (Windows)

In some cases, you may need to start or stop all components of FileMaker Server on a machine. For example, after you restrict access to Admin Console (**General Settings** > **Admin Console** tab), you must restart all FileMaker Server components. You can restart all FileMaker Server components either by restarting the machine or by restarting the FileMaker Server [service](#).

In Windows, FileMaker Server runs as a service named "FileMaker Server" that manages all FileMaker Server components on the machine. In a multiple-machine [deployment](#), the FileMaker Server service runs on each machine.

Typically, the FileMaker Server service is automatically started when the machine is started. If you choose not to automatically start the FileMaker Server service during Windows startup or if you stopped the FileMaker Server service, you can start it again manually.

### To start or stop the FileMaker Server service:

You must be logged in with administrator privileges on the machine where FileMaker Server is running.

1. Click **Start** button > **Control Panel** > **Administrative Tools**.
2. Double-click **Services**.
3. In the Services window, select **FileMaker Server** in the **Name** column.
4. Choose **Action** menu > **Start** to start the service or **Action** menu > **Stop** to stop the service.

### To start or stop the FileMaker Server service from the command prompt:

- Open the Command Prompt window.

To	Enter
Start FileMaker Server	<code>net start "FileMaker Server"</code>
Stop FileMaker Server	<code>net stop "FileMaker Server"</code>

### Related topic

[Starting and stopping FileMaker Server](#) (page 51)

## Starting or stopping FileMaker Server daemons (Mac OS)

In some cases, you may need to start or stop all components of FileMaker Server on a machine. For example, after you restrict access to Admin Console (**General Settings** > **Admin Console** tab), you must restart all FileMaker Server components. You can restart all FileMaker Server components either by restarting the machine or by restarting the FileMaker Server [daemons](#).

In Mac OS, FileMaker Server runs as several background processes, or daemons. The daemons start when FileMaker Server is installed. In a multiple-machine [deployment](#), FileMaker Server daemons run on each machine.

Typically, the FileMaker Server daemons are automatically started when the machine is started. If you choose not to automatically start the FileMaker Server daemons during Mac OS startup or if you stopped the daemons, you can start them again manually.

### To start or stop FileMaker Server manually:

You must be logged in to the machine where FileMaker Server is running.

- Open the Terminal application and enter the start or stop command:

To	Enter
Start FileMaker Server daemons	<code>sudo launchctl start com.filemaker.fms</code>
Stop FileMaker Server daemons	<code>sudo launchctl stop com.filemaker.fms</code>

**Note** The `sudo` command requires you to authenticate.

### Related topic

[Starting and stopping FileMaker Server](#) (page 51)

## Configuring general settings

Choose **General Settings** and select one of the following tabs to specify FileMaker Server settings:

Choose	To
<b>Server Information</b>	Specify the FileMaker Server name and description, specify optional server and administrator contact information, and update the FileMaker Server license. See <a href="#">Server information settings</a> (page 55).
<b>Email Notifications</b>	Specify the users that will receive emails whenever errors or warnings occur in FileMaker Server. Sending email notification requires the email server's <a href="#">SMTP</a> information. See <a href="#">Email notification settings</a> (page 57).
<b>Admin Console</b>	Restrict access to Admin Console, change the Admin Console user name and password, allow members of the <code>fmsadmin</code> group to log in, and enable checking for FileMaker Server updates. See <a href="#">Admin Console settings</a> (page 59).
<b>Auto Start</b>	Start the <a href="#">Database Server</a> or the <a href="#">Web Publishing Engine</a> when the computer starts. See <a href="#">Auto Start settings</a> (page 61).

After you change a setting in a tab, you can click **Save** to save your changes immediately. Or, if you want to make changes in other tabs in this pane, you can click another tab, make changes, then click **Save**. At any time, you can click **Revert** to undo all changes you've made in these tabs since the last save.

### Related topics

[Configuring Database Server settings](#) (page 62)

[Configuring web publishing settings](#) (page 78)

[Enabling sharing via ODBC and JDBC](#) (page 104)

## Server information settings

The **General Settings > Server Information** tab specifies the following configuration settings:

- Specify the host name that is displayed in the FileMaker Admin Console and [FileMaker Pro](#), and the server description that is displayed on the Admin Console Start Page.
- Enter FileMaker Server contact information that is published in the [directory service](#) and the Start Page.
- View the current FileMaker Server license information and update the license.

### To specify server information settings:

1. Choose **General Settings > Server Information** tab.

To	Do this
Specify the host name that is displayed in FileMaker Server Admin Console and FileMaker Pro	<p>Enter the <b>Server Name</b>.</p> <p><b>Tip</b> Use names consisting of standard ASCII characters without spaces.</p> <p>The server name appears in these locations:</p> <ul style="list-style-type: none"> <li>• on the Start Page</li> <li>• in FileMaker Pro, when users invoke the Open Remote File dialog box</li> </ul>
Specify a server description	<p>For <b>Server Description</b>, enter a description of the FileMaker Server computer. This description appears on the Start Page.</p>
Specify the FileMaker Server owner, email address, location, and phone number	<p>For <b>Administrator Contact Information</b>, enter the contact information for the person who administers this FileMaker Server <a href="#">deployment</a>.</p> <p>This contact information appears in these locations:</p> <ul style="list-style-type: none"> <li>• on the Start Page</li> <li>• on a directory service</li> </ul> <p>For information on publishing the administrator contact information to a directory service, see <a href="#">FileMaker Pro client settings</a> (page 63).</p>

To	Do this
View or update your FileMaker Server license information	<p>For <b>License Information</b>, click <b>Update License Key</b>.</p> <ol style="list-style-type: none"><li>1. Enter the <b>User Name</b> and <b>Organization</b> and your new <b>License Key</b>.</li><li>2. Click <b>Update</b>, then click <b>Close</b>.</li></ol> <p>Your FileMaker Server license information is listed on the tab. See <a href="#">About the license key</a> (page 170). You can also update the license key if you are using a trial version or you want to upgrade to FileMaker Server Advanced.</p> <p>Upgrading to FileMaker Server Advanced enables <a href="#">Instant Web Publishing</a> and sharing data as an <a href="#">SQL data source</a> via <a href="#">ODBC/JDBC</a>. Because all the necessary files are already installed, no additional installation is necessary to upgrade.</p>

2. Click **Save**.

### Related topics

- [Uploading database files](#) (page 33)
- [Database Server security settings](#) (page 70)
- [Admin Console settings](#) (page 59)
- [Configuring general settings](#) (page 54)

## Email notification settings

You can configure FileMaker Server to send an email notification when errors or warnings are detected or to receive email notification of scheduled tasks. You configure for email notification by entering the [SMTP](#) server configuration settings and then sending a test message to test the connection. Then, enter the email addresses of the users who will receive notification of errors or warnings.

### To specify email notification settings:

1. Choose **General Settings > Email Notifications** tab.

To	Do this
Enter the SMTP configuration information for the email server	<p>For <b>SMTP Information</b>:</p> <ul style="list-style-type: none"> <li>• <b>From Address</b>: Enter the email address of the sender.</li> <li>• <b>Reply-to Address</b>: Enter the email address that users can reply to after receiving an error or warning email from FileMaker Server. For example, the email address of the FileMaker Server administrator.</li> <li>• <b>SMTP Server Address</b>: Enter an <a href="#">IP address</a> (example: 127.1.1.1) or a host name (example: postoffice.emailserver.com).</li> <li>• <b>Port</b>: The port number required to connect to the SMTP server. The default port number is 25.</li> <li>• Select <b>SMTP Authentication</b> if required and choose the authentication type: <ul style="list-style-type: none"> <li>• <b>Plain Text</b>: Plain text authentication using LOGIN mechanism</li> <li>• <b>CRAM-MD5</b>: Challenge-Response Authentication Mechanism-Message Digest 5 authentication to encrypt the password for the SMTP mail server</li> </ul> </li> </ul> <p><b>Note</b> Contact your email administrator to find out whether authentication is required and what type is used.</p> <ul style="list-style-type: none"> <li>• <b>User</b>: Enter the user name required to log in to the SMTP server.</li> <li>• <b>Password</b>: Enter the user's password.</li> </ul>
Test your SMTP settings	<p>Click <b>Test SMTP Settings</b>. Enter an email address in the dialog box and click <b>OK</b> to send a test message.</p> <p>If the test message fails, check your SMTP settings or the email address.</p>

To	Do this
Enable email notifications	<p>For <b>Notification Settings</b>:</p> <ul style="list-style-type: none"> <li>• Select <b>Enable email notifications</b>.</li> </ul> <p><b>Send Email Notifications to:</b> Enter the email addresses for users who will be notified.</p> <p>Specify email addresses separated by commas.</p> <ul style="list-style-type: none"> <li>• <b>Severity Level:</b> Specify whether emails will be sent only when FileMaker Server detects errors or when FileMaker Server detects warnings or errors.</li> </ul>

2. Click **Save**.

**Note** Each schedule can be enabled to send email notification when the schedule completes. Each schedule can have its own set of email addresses, but all email notifications use the same SMTP settings. For more information about enabling email notifications in scheduled tasks, see [Enabling email notifications in schedules](#) (page 147).

### Related topics

[FileMaker Pro client settings](#) (page 63)

[Creating schedules](#) (page 134)

[Configuring general settings](#) (page 54)

## Admin Console settings

The **General Settings > Admin Console** tab specifies the following configuration settings:

- Restrict running Admin Console to a specific system or a range of systems identified by [IP addresses](#).

Using FileMaker Server Admin Console, you can remotely control, or administer, FileMaker Server from a different computer than the one on which FileMaker Server is installed and hosting databases.

You can restrict access to Admin Console to the system currently running the console or to systems with specific IP addresses.

- Change the FileMaker Server administrator's user name or password, or allow members of the `fmsadmin` group to log in.
- Check for FileMaker Server updates.

### To specify Admin Console settings:

1. Choose **General Settings > Admin Console** tab.

To	Do this
Restrict Admin Console to specific IP addresses	<p>For <b>Restrict Access</b>:</p> <ul style="list-style-type: none"> <li>• Select <b>Enable access restrictions</b>.</li> <li>• Enter one or more IP addresses, separated by commas.</li> </ul> <p><b>Note</b> Any changes to this setting require restarting FileMaker Server on the <a href="#">master</a> machine. See <a href="#">Starting or stopping the FileMaker Server service (Windows)</a> (page 52) or <a href="#">Starting or stopping FileMaker Server daemons (Mac OS)</a> (page 53).</p> <hr/> <p><b>Important</b> You can run FileMaker Server Admin Console on the master machine even if you enable access restrictions.</p> <hr/>
Change the Admin Console <a href="#">account</a> user name and password	<p>For <b>Authentication</b>:</p> <ol style="list-style-type: none"> <li>1. Click <b>Change User Name/Password</b> to open the dialog box.</li> <li>2. Enter a <b>New User Name</b>.</li> <li>3. Enter the <b>Current Password</b>.</li> <li>4. Enter a <b>New Password</b>, then enter it again in <b>Confirm Password</b>.</li> <li>5. Click <b>OK</b>.</li> </ol> <p>This change is effective immediately.</p>
Allow members of the <code>fmsadmin</code> group to log in	<p>For <b>Authentication</b>, select <b>Allow members of the "fmsadmin" group to login</b>.</p> <p>You can allow Admin Console users to log in with accounts that are members of the <code>fmsadmin</code> group. This group is defined on the master machine running FileMaker Server.</p>

To	Do this
Check for FileMaker Server updates	For <b>Check for Updates</b> , select <b>Enable FileMaker Server to check for updates</b> .  You can check for updates by selecting <b>Help</b> menu > <b>Check for Update</b> . See <a href="#">Checking for updates</a> (page 169).

2. Click **Save**.

### Related topic

[Database Server security settings](#) (page 70)

[Configuring general settings](#) (page 54)

## Auto Start settings

You can automatically start the [Database Server](#) when the system restarts. You can also automatically start the [Web Publishing Engine](#) when the system restarts.

### To specify Auto Start settings:

1. Choose **General Settings** > **Auto Start** tab.
2. Choose the **Auto Start** options:

To	Do this
Automatically start the Database Server component on the <a href="#">master</a> machine when the computer restarts	Select <b>Automatically start Database Server</b> .
Automatically start the Web Publishing Engine when the computer restarts	Select <b>Automatically start Web Publishing Engine</b> . <b>Note</b> This option is available only when <b>Automatically start Database Server</b> is selected.

3. Click **Save**.

### Notes

- You can start or stop the Database Server or the Web Publishing Engine without restarting the machine. See [Starting and stopping FileMaker Server](#) (page 51).
- You can manually start the Database Server and Web Publishing Engine if you don't enable the Auto Start options. When the machine restarts, you can start Admin Console and start the Database Server, the Web Publishing Engine, or both.

### Related topics

- [Uploading database files](#) (page 33)
- [Database Server security settings](#) (page 70)
- [General web publishing settings](#) (page 79)
- [Configuring general settings](#) (page 54)

# Configuring Database Server settings

Choose **Database Server** and select one of the following tabs to specify FileMaker Server settings:

Choose	To
<b>FileMaker Pro Clients</b>	Specify the maximum number of simultaneous <a href="#">FileMaker Pro client</a> connections and the maximum idle time before disconnecting clients. You can also configure the FileMaker Server to work with a <a href="#">directory service</a> . See <a href="#">FileMaker Pro client settings</a> (page 63).
<b>Databases</b>	Specify the maximum number of database files that FileMaker Server can host, specify database <a href="#">cache</a> values, and allow FileMaker Server to automatically host <a href="#">runtime solutions</a> . See <a href="#">Database settings</a> (page 67).
<b>Security</b>	Select how FileMaker Pro clients are <a href="#">authenticated</a> when connecting to the FileMaker Server and whether to display only databases that each user is allowed to access. You can also choose to encrypt <a href="#">client</a> connections using Secure Sockets Layer ( <a href="#">SSL</a> ). See <a href="#">Database Server security settings</a> (page 70).
<b>Default Folders</b>	Specify an additional database folder to host database files and a <a href="#">backup</a> folder. See <a href="#">Default folder settings</a> (page 73).
<b>Logging</b>	Select whether to log client access in the Access.log or usage statistics in the Stats.log. You can also specify the log size and collection interval. See <a href="#">Logging and statistics settings</a> (page 76).
<b>Server Plug-ins</b>	Select whether to use <a href="#">plug-ins</a> with hosted databases and choose which plug-ins to use. See <a href="#">Server plug-in settings</a> (page 77).

After you change a setting in a tab, you can click **Save** to save your changes immediately. Or, if you want to make changes in other tabs in this pane, you can click another tab, make changes, then click **Save** when you are done. At any time, you can click **Revert** to undo all changes you've made in these tabs since the last save.

## Related topics

[Configuring general settings](#) (page 54)

[Configuring web publishing settings](#) (page 78)

[Enabling sharing via ODBC and JDBC](#) (page 104)

## FileMaker Pro client settings

The **Database Server > FileMaker Pro Clients** tab specifies the following configuration settings:

- Specify the maximum number of simultaneous [FileMaker Pro client](#) connections to FileMaker Server.
- Enable FileMaker Pro users to download updated [plug-ins](#) used by hosted databases.
- Specify the maximum idle time before disconnecting FileMaker Pro clients.
- Configure FileMaker Server to work with a [directory service](#).

### To specify FileMaker Pro client settings:

1. Choose **Database Server > FileMaker Pro Clients** tab.

To	Do this
Set the number of simultaneous FileMaker Pro clients that can access databases hosted by FileMaker Server	<p>For <b>Maximum number of FileMaker Pro connections</b>, enter a number.</p> <p>The memory requirements of FileMaker Server are directly related to the number of connected clients, open files, and the size of database <a href="#">cache</a>. If your server has large numbers of clients or files, you can increase the amount of RAM reserved for the database cache to improve performance. For more information, see <a href="#">Database settings</a> (page 67).</p>
Allow FileMaker Pro clients to download updated plug-ins used by databases hosted by FileMaker Server	Select <b>Allow FileMaker Pro clients to download updates automatically</b> .
Set the maximum idle time for FileMaker clients	<p>Select <b>Set maximum idle time allowed for FileMaker clients</b> and enter the time.</p> <p>You can set the maximum time a FileMaker Pro client can be idle when connected to a database hosted by FileMaker Server. FileMaker Server only notifies FileMaker Pro of this setting. In FileMaker Pro, you should edit <a href="#">privilege sets</a> to enable the option <b>Disconnect user from FileMaker Server when idle</b>. Because you can set this option on a privilege set basis, certain users will be disconnected while other users always maintain their connections.</p> <p><b>Note</b> Because clients who are disconnected have to reopen the files, make sure the idle time is long enough to avoid frequent disconnections.</p>

To	Do this
Configure FileMaker Server to work with a directory service	<p>Use the Directory Service <a href="#">assistant</a>:</p> <ol style="list-style-type: none"> <li>1. Click <b>Configure Directory Service</b> to open the Directory Service assistant.</li> <li>2. Enter the directory service settings. See <a href="#">Specifying directory service settings</a> (page 65). Click <b>Next</b>.</li> <li>3. Select the information you want to publish. See <a href="#">Publishing directory server settings</a> (page 66).</li> <li>4. Click <b>Finish</b> to update the directory service information in this tab. (Clicking <b>Save</b> in this tab is not required.)</li> </ol> <p>If your organization uses a Lightweight Directory Access Protocol (<a href="#">LDAP</a>) compliant directory service, such as Windows <a href="#">Active Directory</a>, Netscape Directory, OpenLDAP, or <a href="#">Open Directory</a> (Mac OS), you can centrally manage your hosted databases by registering FileMaker Server with your directory service.</p> <p>When FileMaker Server is registered with a directory service, host names and <a href="#">IP addresses</a> are published to the directory service so that FileMaker Pro clients can use the directory service to find the server in a network. The FileMaker Server administrator's contact information can also be published (see <a href="#">Server information settings</a> (page 55)). This is useful if the directory service administrator needs to contact you (for example, if hosted databases are unavailable for client access).</p> <p><b>Note</b> If you do not know what your directory service settings are, contact your network administrator.</p>

2. Click **Save**.

### Related topics

[Administering clients](#) (page 88)

[Database Server security settings](#) (page 70)

[Configuring Database Server settings](#) (page 62)

## Specifying directory service settings

In this Directory Service [assistant](#) step, specify the server settings.

1. For **Server Information**, enter the following information:
  - **Directory Server** (host name or [IP address](#)).
  - **Port** number for the [LDAP](#) connection.
  - **Directory Entry Point**. The distinguished name that specifies the location of FileMaker Server in the [directory service](#). For example:  

```
ou=FileMaker,dc=mydomain,dc=filemaker,dc=com
```

Spaces after commas are optional.
2. For **Login Information**, choose the [authentication](#) method for the directory service:
  - If the directory services requires a login, select **My directory service requires me to log on**, and enter the **User Name** and **Password**.
  - If the user name and password you specified are defined in a Windows domain, enable **Use Windows authentication** to access Windows [Active Directory](#).
3. Click **Test Directory Service Settings** to verify that FileMaker Server can communicate with the directory service.
4. Click **Next**.

Click **Cancel** to exit the Directory Service assistant.

For more information, see [FileMaker Pro client settings](#) (page 63).

## Publishing directory server settings

In this Directory Service [assistant](#) step, choose the information you want to publish.

1. Select **Publish FileMaker Server** to publish the FileMaker Server name, host name, and [IP address](#) to the [directory service](#).
2. Select **Publish administrator contact information** to publish the administrator's contact information specified in the **General Settings > Server Information** tab.
3. Click **Finish** to update the directory service information in the **Database Server > FileMaker Pro Clients** tab. (Clicking **Save** in this tab is not required.)

Click **Back** to return to the previous step or **Cancel** to exit the Directory Service assistant.

For more information, see [FileMaker Pro client settings](#) (page 63).

## Database settings

The **Database Server > Databases** tab specifies the following configuration settings:

- Specify the maximum number of files that FileMaker Server can host.
- Select whether FileMaker Server automatically hosts registered [runtime solution](#).
- Specify the amount of database [cache](#) memory.
- Specify how often to flush the database cache.

### To specify database settings:

1. Choose **Database Server > Databases** tab.

To	Do this
Specify the maximum number of database files FileMaker Server can open at one time	<p>For <b>Maximum number of files to host</b>, enter a number.</p> <p><b>Note</b> The memory requirements of FileMaker Server are directly related to the number of clients and open files. If you specify large values, you should also increase the amount of RAM reserved for the database cache.</p>
Automatically host runtime solution files	<p>In <b>Registered Runtime Solutions</b>, select <b>Allow FileMaker Server to automatically host registered runtime solutions</b>.</p> <ul style="list-style-type: none"> <li>• To register a file type for a runtime solution, click <b>Register</b> and type the filename extension. Click <b>OK</b>.</li> <li>• To remove a registered file type, select the file type in the <b>File Type</b> list and click <b>Remove</b>. Click <b>Yes</b> to confirm.</li> </ul> <p>If you host runtime database solutions created by <a href="#">FileMaker Pro Advanced</a>, you can enable FileMaker Server to automatically open runtime solutions when FileMaker Server starts. Runtime solutions must be stored in one of the designated locations. See <a href="#">Default folder settings</a> (page 73).</p> <p>If the runtime solutions do not have <code>.fp7</code> filename extensions, you must register their filename extensions in FileMaker Server.</p>
Specify the RAM reserved for database cache	<p>For <b>RAM reserved for database cache</b>, select the amount of memory.</p> <p>The maximum setting is dynamically determined based on physical RAM. The maximum setting is (Physical RAM – 128 MB) / 4, with a fixed minimum of 64 MB and a fixed maximum of 800 MB, and Physical RAM is the amount of RAM available in the <a href="#">master</a> machine of your FileMaker Server <a href="#">deployment</a>.</p> <p>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.</p>

To	Do this
Specify the cache flush distribution interval	<p>For <b>Cache flush distribution interval</b>, enter the time between cache flushes in hours and minutes.</p> <p>To enhance performance, FileMaker Server saves changes to a RAM-based cache. Every second, a portion of the cache is saved (flushed) to disk.</p> <p>By default FileMaker Server attempts to scan the entire cache every minute. You can increase the interval so it takes longer for the entire cache to be flushed but less of the cache is scanned every second. For more information, see <a href="#">Cache flushing operation</a> (page 69).</p>

2. Click **Save**.

### Related topics

[Uploading database files](#) (page 33)

[Administering databases](#) (page 93)

[Configuring Database Server settings](#) (page 62)

## Cache flushing operation

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 64 MB 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, increase the value of the **Cache flush distribution interval** (hh:mm). Unsaved changes in FileMaker Server will be no older than the interval you specify. FileMaker Server reduces the amount of data it inspects every second, but never less than 128 KB per second.

Before increasing the cache flushing interval, the administrator should carefully consider 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 64 MB cache, the engine will inspect 1/600th of the cache each second, or about 110 KB of cache (less than the minimum, so the engine will actually inspect 128 KB 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 853 KB 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 853 KB compared to 8.5 MB.

### Related topic

[Database settings](#) (page 67)

## Database Server security settings

The **Database Server > Security** tab lets you configure the following security settings:

- Specify whether [clients](#) are authenticated using FileMaker accounts only or also using an external [authentication](#) server.
- Limit the list of hosted databases that clients can view.
- Encrypt data passed between the [Database Server](#) and clients.

### To specify Database Server security settings:

1. Choose **Database Server > Security** tab.

To	Do this
Specify whether to authenticate access to hosted databases using an external server	<p>For <b>Client Authentication</b>, select one of the following:</p> <ul style="list-style-type: none"> <li>• <b>FileMaker accounts only:</b> The user name and password are authenticated against the <a href="#">account</a> name and password specified in the FileMaker Pro accounts of hosted databases.</li> <li>• <b>FileMaker and external server accounts:</b> The user name and password are authenticated against the account name and password specified in FileMaker Pro accounts or against an external server. The external server returns local and domain group accounts that the user belongs to, which are then authenticated against the group accounts specified in FileMaker Pro External Server accounts.</li> </ul> <p>For more information, see <a href="#">External authentication for database access</a> (page 72).</p> <p>For more information on creating accounts that authenticate via an external server, see FileMaker Pro Help.</p>
Specify whether to filter the list of databases in: <ul style="list-style-type: none"> <li>• Open Remote File dialog box in FileMaker Pro</li> <li>• <a href="#">Instant Web Publishing</a> home page</li> <li>• <a href="#">Custom Web Publishing</a> database list requests</li> </ul>	<p>For <b>File Display Filter</b>, select one of the following:</p> <ul style="list-style-type: none"> <li>• <b>List all databases:</b> Display all hosted databases.</li> <li>• <b>List only the databases each user is authorized to access:</b> Display only the databases for which the user has <a href="#">access privileges</a> in each hosted database.</li> </ul>

To	Do this
Encrypt data passed between the Database Server and clients	<p>Select <b>Secure connections to FileMaker Server</b>.</p> <p>All Database Server client connections use the Secure Sockets Layer (<a href="#">SSL</a>), except <a href="#">ODBC</a> and <a href="#">JDBC</a> connections. For more information about data security, see <a href="#">Securing your data</a> (page 125).</p> <p>Secure connections are slower because of data encryption. Data transfer rates are affected by the number of clients and the amount of data transferred.</p> <p><b>Note</b> If you change this setting, you must stop and start the Database Server again for the change to take effect. See <a href="#">Starting and stopping FileMaker Server</a> (page 51).</p>

2. Click **Save**.

### Related topics

[Auto Start settings](#) (page 61)

[Admin Console settings](#) (page 59)

[Configuring Database Server settings](#) (page 62)

## External authentication for database access

FileMaker Server authenticates users with FileMaker [accounts](#) defined within a FileMaker Pro database. In addition, FileMaker Server supports [authentication](#) with the following externally defined accounts and groups:

- Windows or Mac OS accounts and groups locally defined on the [master](#) machine
- Apple Open Directory and Windows [Active Directory](#) accounts and groups, which can be on a centrally-managed authentication server

If you're hosting FileMaker Pro database files with FileMaker Server, you can use your existing authentication server to control access to databases without having to manage an independent list of accounts in each FileMaker Pro database file.

If in the **Database Server > Security** tab 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 defined on the master machine or on an authentication server. Using FileMaker Pro, you specify in a database whether an account is authenticated via FileMaker or an external authentication server. These are Active Directory accounts (Windows) or Open Directory accounts (Mac OS). Depending on the specific network configuration, an external authentication server on one platform can authenticate users on the other platform. In other words, a Mac OS user might be authenticated by Active Directory or a Windows user might be authenticated by Open Directory in Mac OS X Server.

If you choose **FileMaker and external server accounts**, records of all login attempts are logged in the Windows Security Log, if the master machine is a Windows machine. For more information about the Security Log, see your Windows documentation.

---

**Important** When a database file contains one or more External Server accounts, make sure you use operating system security settings to limit direct access to the file. Otherwise, it might be possible for an unauthorized user to move the file to another system that replicates your authentication server environment and gain access to the file. Group names for accounts authenticated with the external server feature are stored as text strings. If the group name is reproduced on another system, the copied file can be accessed with the [privilege set](#) assigned to the members of the group, which might expose data inappropriately.

---

### Notes

- For more information on setting up accounts in FileMaker Pro, see “Creating accounts that authenticate via an external server” in FileMaker Pro Help.
- For more information on setting up external authentication, go to [www.filemaker.com/kb](http://www.filemaker.com/kb) and search for articles containing the keywords **external** and **authentication** (and optionally **cross-platform**).

### Related topics

[Database Server security settings](#) (page 70)

[Securing your data](#) (page 125)

## Default folder settings

Choose the **Database Server > Default Folders** tab to specify the following configuration settings:

- Specify an additional database folder for database files.
- Specify a [backup](#) folder for database files.

### Setting up an additional database folder

At startup, FileMaker Server searches the default database folder (and in subfolders one level down) for databases to host. It also searches an optional additional database folder. The databases are backed up to the default backup folder.

The full path for the default database folder is:

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Data\Databases\
- Mac OS: /Library/FileMaker Server/Data/Databases/

1. For **Database Folders**, select **Use additional database folder**.
2. Enter the full path to the location of the additional database folder. The maximum length of the path is 255 characters.
  - Windows: The path you enter must start with filewin:/ and end with a slash (/).  
For example, filewin:/driveLetter/folderName/
  - Mac OS: The path you enter must start with filemac:/ and end with a slash (/).  
For example, filemac:/volumeName/folderName/

**Note** Click **Restore** to undo changes made to the path.

3. Click **Validate** to ensure that the path entered is correct.

When the path is found to be valid, the label changes from **Not a valid path** to **Valid path**. If the path is not valid, see [Tips for valid folders](#) (page 75).
4. Click **Save**.

### Setting up a backup database folder

Specify the path to a folder used by FileMaker Server when a Back Up Database scheduled task runs.

---

**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. Any databases in that folder are automatically opened when FileMaker Server starts.

---

1. For **Backup Folder**, enter the full path to the location of the new default backup folder. The maximum length of the path is 255 characters.
  - Windows: The path you enter must start with filewin:/ and end with a slash (/).  
For example, filewin:/driveLetter/folderName/
  - Mac OS: The path you enter must start with filemac:/ and end with a slash (/).  
For example, filemac:/volumeName/folderName/

**Note** Click **Restore** to undo changes made to the path.

2. Click **Validate** to ensure that the path entered is correct.

When the path is found to be valid, the label changes from **Not a valid path** to **Valid path**. If the path is not valid, see [Tips for valid folders](#) (page 75).

3. Click **Save**.

### **Related topic**

[Uploading database files](#) (page 33)

[Configuring Database Server settings](#) (page 62)

## Tips for valid folders

The folders you specify as a backup folder and as an additional database folder must be valid.

- Specify a folder on a local volume, not on a remote volume.

If you want to store database backups on a remote volume, first backup the database to a local volume, and then copy the backup to a remote volume.

- Ensure that the folder has permissions set correctly so that FileMaker Server can read and write to the folder.

(Mac OS) The folder must be owned by the user `fmserver` (or in the group `fmsadmin`).

- Specify the folder as an absolute path:

- Windows: The path you enter must start with `filewin:/` and end with a slash (`/`).

For example, `filewin:/driveLetter/folderName/`

- Mac OS: The path you enter must start with `filemac:/` and end with a slash (`/`).

For example, `filemac:/volumeName/folderName/`

Refer to the FileMaker Knowledge Base for more information. See [Customer support and Knowledge Base](#) (page 198).

### Related topic

[Default folder settings](#) (page 73)

## Logging and statistics settings

The **Database Server > Logging** tab lets you configure how the [Database Server](#) collects and logs events, [client](#) access, and statistical information while FileMaker Server is running. You can enable usage statistics logging to collect performance information and write to your log at a specified interval.

In this tab you can configure the following settings:

- **Statistics.** Specify how often the Database Server collects statistical information for display and for optional logging.
- **Logging.** Specify whether optional client access is collected while FileMaker Server is running. You can enable usage statistics logging to collect performance information and write to your log files at a specified interval.

When you enable usage statistics for FileMaker Server, a log file named Stats.log is created in the FileMaker Server/Logs/ folder. Stats.log is a tab-delimited text file. Real-time statistics are displayed in the **Statistics** pane. You can also view the Stats.log file in FileMaker Pro, a spreadsheet, or a text editor.

You can specify the maximum size for the Access.log, Event.log, and Stats.log files, and a collection interval for Stats.log so that it doesn't get too large.

### To specify event logging settings:

1. Choose **Database Server > Logging** tab.

To	Do this
Set the time between collecting statistics	For <b>Collection Interval</b> , enter the time in minutes and seconds.  The collection interval determines how frequently FileMaker Server collects the statistical information that is displayed in the <b>Statistics</b> pane and optionally logged in the Stats.log file.
Specify the log size	For <b>Log Size</b> , specify the maximum size in MB for the Access.log, Event.log, and Stats.log files.
Enable logging	Events are always logged in the Event.log file. Event logging cannot be disabled.  Select <b>Access</b> to log connections to FileMaker Server in the Access.log file.  Select <b>Usage statistics</b> to log performance measurements in the Stats.log file.

2. Click **Save**.

### Related topics

[General web publishing settings](#) (page 79)

[Viewing statistics](#) (page 108)

[Tracking activity in log files](#) (page 110)

[Configuring Database Server settings](#) (page 62)

## Server plug-in settings

The **Database Server > Server Plug-ins** tab allows you to enable FileMaker Server to use external function [plug-ins](#) with hosted FileMaker Pro databases that are designed to use server-side plug-ins.

For more information on plug-ins, see [Managing plug-ins](#) (page 119).

### To allow FileMaker Server to use plug-ins:

1. Select **Enable FileMaker Server to use plug-ins**.

The list shows the plug-ins that are in the plug-in folder.

2. Select **Enabled** for each plug-in that you want to execute on FileMaker Server.
3. Click **Save**.

### Related topics

[Enabling server-side plug-ins](#) (page 120)

[Uploading database files](#) (page 33)

[Configuring Database Server settings](#) (page 62)

# Configuring web publishing settings

Choose **Web Publishing** and select one of the following tabs to specify FileMaker Server settings:

Choose	To
<b>General Settings</b>	Specify the web publishing error logging level and the maximum number of web publishing sessions. See <a href="#">General web publishing settings</a> (page 79).
<b>PHP</b>	Enable and configure Custom Web Publishing with <b>PHP</b> . See <a href="#">PHP web publishing settings</a> (page 80)
<b>XSLT</b>	Enable and configure Custom Web Publishing with <b>XSLT</b> . See <a href="#">XSLT web publishing settings</a> (page 82)
<b>XML</b>	Enable and configure Custom Web Publishing with <b>XML</b> . See <a href="#">XML web publishing settings</a> (page 86)
<b>Instant Web Publishing</b>	Enable and configure <a href="#">Instant Web Publishing</a> . See <a href="#">Instant Web Publishing settings</a> (page 87)

After you change a setting in a tab, you can click **Save** to save your changes immediately. Or, if you want to make changes in other tabs in this pane, you can click another tab, make changes, then click **Save**. At any time, you can click **Revert** to undo all changes you've made in these tabs since the last save.

When you configure web publishing settings, Admin Console prompts you to restart the [Web Publishing Engine](#) after you save changes to settings. This makes all web published databases unavailable to web users while the Web Publishing Engine restarts.

---

**Important** Change web publishing settings only when the Web Publishing Engine is not being used. Web publishing clients can lose unsaved work when the Web Publishing Engine restarts.

---

## Related topics

[Configuring general settings](#) (page 54)

[Configuring Database Server settings](#) (page 62)

[Enabling sharing via ODBC and JDBC](#) (page 104)

## General web publishing settings

You can specify the following web publishing settings on the **Web Publishing > General Settings** tab:

- Select the logging level for web publishing.
- Set the maximum number of web publishing sessions.

### To specify web publishing settings:

1. Choose **Web Publishing > General Settings** tab.

To	Do this
Enable access logging	Select <b>Enable access logging, to generate the Web Publishing Core internal access logs</b> .  Access logging enables the Web Publishing Core internal access logs, which are called wpc_access_log.txt and pe_internal_access_log.txt.
Enable error logging	Select <b>Enable error logging, to generate the Web Publishing Engine application log</b> .  Error logging enables the <a href="#">Web Publishing Engine</a> application log, which is called pe_application_log.txt.
Log <a href="#">ScriptMaker</a> Errors	Select <b>ScriptMaker Errors</b> to log errors in the pe_application_log.txt file.  Only errors from ScriptMaker scripts run by Web Publishing Engine requests are logged.
Log <a href="#">XSLT</a> user errors	Select <b>User (XSLT only)</b> to log messages generated by the XSLT <xsl:message> element in XSLT stylesheets in the pe_application_log.txt file.
Set the maximum number of web publishing sessions	Specify the <b>Maximum number of web publishing sessions</b> .  The number specified is the maximum number of simultaneous client sessions allowed for all web technologies enabled on FileMaker Server.

2. Click **Save**.

For more information on web publishing log files, see [Web publishing logs](#) (page 117).

### Related topics

[Administering databases](#) (page 93)

[Administering clients](#) (page 88)

[Logging and statistics settings](#) (page 76)

[Configuring web publishing settings](#) (page 78)

## PHP web publishing settings

Custom Web Publishing with [PHP](#) enables PHP web applications to access data using the FileMaker [API](#) for PHP. You can configure how the [Web Publishing Engine](#) responds to the API.

You can specify the following PHP Publishing settings on the **Web Publishing > PHP** tab:

- Enable PHP publishing.
- Enable pre-validation of record data.
- Select the default character encoding.
- Select the language used with PHP publishing.

**Note** Changing any of these settings requires restarting the Web Publishing Engine.

For more information about hosting a PHP website, see [Hosting PHP websites](#) (page 45). For more information about creating a PHP website and using the FileMaker API for PHP, see FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH PHP on the Start Page.

### To specify PHP Publishing settings:

1. Choose **Web Publishing > PHP** tab.

To	Do this
Enable Custom Web Publishing with PHP	Select <b>Enable PHP publishing</b> .  This setting must be enabled to configure the other settings in this tab.
Enable pre-validation of record data on the <a href="#">web server</a>	Select <b>Enable record data pre-validation</b> .  Enables the FileMaker API for PHP to validate record data before committing a record to the <a href="#">Database Server</a> . To use this feature, your PHP code must call the <code>validate()</code> method where necessary and respond to validation errors.
Select the default character encoding	For <b>Default Character Encoding</b> , choose an encoding.  The encoding you choose should match the encoding you use in the <code>&lt;head&gt;</code> section of your PHP files. The PHP default language is Latin-1. The FileMaker Server default is Unicode. Use UTF-8 if your data contains non-Latin characters.
Select the PHP publishing error message language	For <b>Language</b> , choose a language for error messages returned by the FileMaker API for PHP.

2. Click **Save**.

**Note** The FileMaker API for PHP and a supported PHP engine must be installed on the web server for Custom Web Publishing with PHP to work. For more information, see [Enabling technologies for web publishing](#) (page 16).

### Related topics

[Administering databases](#) (page 93)

[Administering clients](#) (page 88)

[General web publishing settings](#) (page 79)

[Configuring web publishing settings](#) (page 78)

## XSLT web publishing settings

You can specify the following [XSLT](#) Publishing settings on the **Web Publishing > XSLT** tab:

- Enable XSLT Publishing.
- Enable database sessions.
- Set the session timeout value.
- Configure [SMTP](#) information to send email messages in an XSLT stylesheet.
- Select the default character encoding.

**Note** Changing any of these settings requires restarting the [Web Publishing Engine](#).

For more information about XSLT web publishing, see FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH XML AND XSLT on the Start Page.

### To enable XSLT Publishing:

1. Choose **Web Publishing > XSLT** tab.

To	Do this
Enable XSLT Publishing	Select <b>Enable XSLT publishing</b> .  This setting must be enabled to configure the other settings in this tab.
Choose how errors are generated	Select one of these modes: <ul style="list-style-type: none"> <li>• <b>Development mode:</b> Generate a specific error page when an error occurs in the Web Publishing Engine.  Use this mode when you are developing and testing XSLT stylesheets. You cannot enable server-side stylesheet caching in Development mode.</li> <li>• <b>Production mode:</b> Generate a default general text message in the error page when an error occurs in the Web Publishing Engine.  Use this mode to use the Web Publishing Engine to host XSLT stylesheets.</li> </ul>
Enable server-side stylesheet caching	If <b>Production mode</b> is selected, select <b>Enable stylesheet caching</b> and choose a value for <b>Cache Size</b> .  Server-side caching stores frequently-used XSLT stylesheets in memory, which increases Web Publishing Engine performance. The Web Publishing Engine uses caching only when it is in Production mode.
Enable XSLT database sessions	Select <b>Enable database sessions</b> .  Sessions are optional in Custom Web Publishing with XSLT. For more information, see <a href="#">Configuring the interaction between web sessions and database sessions</a> (page 85).

To	Do this
Set the default session timeout value	<p>For <b>Session Timeout</b>, set the default session time-out for Custom Web Publishing with XSLT.</p> <p>Sessions are optional in Custom Web Publishing with XSLT and you create them by using the <code>fmxslt:create_session()</code> extension function. You can override the default setting by using the <code>fmxslt:invalidate_session()</code> and <code>fmxslt:set_session_timeout()</code> extension functions. See FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH XML AND XSLT.</p>
Specify SMTP information for email messages sent in an XSLT stylesheet	<p>Specify the following:</p> <ul style="list-style-type: none"> <li>• <b>SMTP Server Address:</b> Enter an <a href="#">IP address</a> (example: 127.1.1.1) or a host name (example: postoffice.emailserver.com).</li> <li>• <b>Port:</b> The port number required to connect to the SMTP server. The default port number is 25.</li> <li>• Select <b>SMTP Authentication</b> if required and choose the authentication type: <ul style="list-style-type: none"> <li>• <b>Plain Text:</b> Plain text authentication using LOGIN mechanism</li> <li>• <b>CRAM-MD5:</b> Challenge-Response Authentication Mechanism-Message Digest 5 authentication to encrypt the password for the SMTP mail server</li> </ul> <p><b>Note</b> Contact your email administrator to find out whether authentication is required and what type is used.</p> <ul style="list-style-type: none"> <li>• <b>User:</b> Enter the user name required to log in to the SMTP server.</li> <li>• <b>Password:</b> Enter the user's password.</li> </ul> </li> </ul>
Select the default character encoding	<p>For <b>Default Character Encoding</b>, select the <b>Page Encoding</b> and the <b>Email Encoding</b>. See <a href="#">Text encoding for XSLT requests</a> (page 84)</p>

## 2. Click **Save**.

### Related topics

[Administering databases](#) (page 93)

[Administering clients](#) (page 88)

[General web publishing settings](#) (page 79)

[Email notification settings](#) (page 57)

[Configuring web publishing settings](#) (page 78)

## Text encoding for XSLT requests

When the [Web Publishing Engine](#) is installed, the initial default text encoding for **XSLT** requests is UTF-8. For email messages, the default is ISO-8859-1. You can change these default text encoding settings. For more information about overriding default settings for individual requests, see the FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH XML AND XSLT on the Start Page.

Encoding	Description
US-ASCII	Basic ASCII character set typically used for plain text English email
ISO-8859-1	Latin-1 character set typically used for Roman character-based webpages and email messages
ISO-8859-15	Latin-9 character set, which is almost the same as the Latin-1 character set. Includes the Euro € symbol.
ISO-2022-JP	ISO Japanese encoding typically used for Japanese email messages
Shift_JIS	Japanese encoding typically used for Japanese webpages
UTF-8	Eight-bit encoding of Unicode. Because UTF-8 supports the full range of Unicode characters, it can handle pages for any language.

### Related topic

[XSLT web publishing settings](#) (page 82)

## Configuring the interaction between web sessions and database sessions

Sessions allow you to store data or maintain states between requests. Custom Web Publishing with [XSLT](#) supports two types of sessions:

- Database sessions: FileMaker Server creates a database session whenever it retrieves data for a request. The maximum number of concurrent database sessions is determined by your FileMaker Server license.
- Web sessions: The [Web Publishing Engine](#) creates a web session whenever you use the `fmxml:create_session()` extension function in an XSLT stylesheet. For information on the `fmxml:create_session()` extension function, see FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH XML AND XSLT on the Start Page. The maximum number of web sessions is limited only by the amount of memory on the Web Publishing Engine machine.

In Admin Console, you can use the **Enable database sessions** option to configure the interaction between these two types of sessions. If you enable this option, the Web Publishing Engine uses a database session for each web session. Otherwise, the Web Publishing Engine uses a database session for each request. This option is disabled by default.

If you enable the database sessions:

- Global values are stored between requests.
- If a [ScriptMaker](#) script modifies a state, that state is maintained between requests. For example, privileges that are modified by the Re-Login script step to switch accounts persist between requests.
- The total number of web sessions is limited to the maximum number of concurrent web database sessions on FileMaker Server. This limit applies to [Instant Web Publishing](#) sessions and XSLT sessions.

If you disable the database sessions:

- Global values are not stored between requests.
- If a script modifies a state, that state is not maintained between requests.
- The number of XSLT web sessions is not limited to the maximum number of web database sessions on FileMaker Server, which allows greater scalability to Custom Web Publishing. However, Instant Web Publishing sessions are still subject to the limit.

If your stylesheets do not use global values or scripts that require a state to be maintained between requests, you should disable database sessions. The setting for the **Enable database sessions** option applies to all stylesheets deployed on the Web Publishing Engine.

### Related topic

[XSLT web publishing settings](#) (page 82)

## XML web publishing settings

On the **Web Publishing > XML** tab, you can enable or disable Custom Web Publishing with [XML](#). Select **Enable XML publishing** to allow FileMaker Server to generate XML data from hosted databases based on query commands and parameters.

**Note** Disabling XML does not affect your ability to use [XSLT](#) or the FileMaker [API](#) for [PHP](#), but could affect the connectivity of other third-party web technologies.

### Related topics

[Administering databases](#) (page 93)

[Administering clients](#) (page 88)

[General web publishing settings](#) (page 79)

[Configuring web publishing settings](#) (page 78)

## Instant Web Publishing settings

You can specify the following [Instant Web Publishing](#) settings on the **Web Publishing > Instant Web Publishing** tab:

- Enable Instant Web Publishing.
- Set the Instant Web Publishing session timeout value.
- Select the language for the Instant Web Publishing status area.

### Notes

- Changing any of these settings requires restarting the [Web Publishing Engine](#).
- Instant Web Publishing requires a FileMaker Server Advanced license.

### To specify Instant Web Publishing settings:

1. Choose **Web Publishing > Instant Web Publishing** tab.

To	Do this
Enable Instant Web Publishing	Select <b>Enable Instant Web Publishing</b> .  This setting must be enabled to configure the other settings in this tab.
Set the database session timeout value	Set a value for <b>Session Timeout</b> .  The Web Publishing Engine disconnects users who have been inactive for the specified timeout period.  Instant Web Publishing solutions automatically use database sessions and you cannot disable them.
Select the status area label language	For <b>Status Area Language</b> , select the language for the labels displayed in the status area of the Instant Web Publishing page.  This setting changes the language for all text in the Instant Web Publishing user interface — for example, the status area, Instant Web Publishing homepage, forms-based <a href="#">authentication</a> , dialog boxes, and error messages.  The status area language setting does not change the language of data stored in databases.

2. Click **Save**.

For more information, see FILEMAKER INSTANT WEB PUBLISHING GUIDE on the Start Page.

### Related topics

- [Administering databases](#) (page 93)
- [Administering clients](#) (page 88)
- [General web publishing settings](#) (page 79)
- [Server information settings](#) (page 55)
- [Configuring web publishing settings](#) (page 78)

# Administering clients

The **Clients** pane lists all users, including FileMaker Pro and Web Publishing clients, currently connected to databases hosted by FileMaker Server. You can view details about each user, send messages to users, and disconnect users.

## Viewing client details

Select a **User Name** to view client details below the **Connected Clients** list. Click the **Databases Open** tab to view the list of databases that the user is currently using (see [About databases open details](#) (page 90)). Or, choose the **User Details** tab to view details about the user's system (see [About user details](#) (page 89)).

## Managing client connections

Select one or more clients, choose one of the following **Actions**, and then click **Perform Action**:

For <b>Actions</b> , choose	To
<b>Send Message</b>	Send a text message to selected FileMaker Pro clients connected to FileMaker Server. See <a href="#">Sending messages to FileMaker Pro clients</a> (page 91).
<b>Send Message to All Clients</b>	Send a text message to all FileMaker Pro clients connected to FileMaker Server. See <a href="#">Sending messages to FileMaker Pro clients</a> (page 91).
<b>Disconnect</b>	Disconnect selected clients connected to FileMaker Server. See <a href="#">Disconnecting clients</a> (page 92).
<b>Disconnect All Clients</b>	Disconnect all clients connected to FileMaker Server. See <a href="#">Disconnecting clients</a> (page 92).

## Notes

- To sort clients in the list in ascending or descending order, click a column heading.
- To resize the width of a column, select the column heading border and drag it horizontally.
- To put the columns in a different order, click a column heading, drag it, and drop it at the desired location.
- To copy information from the client list, databases open list, or the user details list, select the row and choose **Edit** menu > **Copy**.

## Related topics

[FileMaker Pro client settings](#) (page 63)

[General web publishing settings](#) (page 79)

[Enabling sharing via ODBC and JDBC](#) (page 104)

## About user details

The **User Details** tab lists detailed information about the [client](#) connected to FileMaker Server.

Detail	Description
<b>Computer Name</b>	The client's computer name.
<b>MAC Address</b>	The MAC (Media Access Control) address for the computer network adapter that the client is using to connect to FileMaker Server.
<b>Operating System</b>	The name of the client computer operating system.
<b>Client/Browser Version</b>	For FileMaker Pro clients, the version of FileMaker Pro that the client is using. For <a href="#">Instant Web Publishing</a> , the name of the Web Browser that the client is using.
<b>Language</b>	The language used by the client.

### Related topic

[Administering clients](#) (page 88)

## About databases open details

The **Databases Open** tab lists detailed information about the [client](#) and the databases the client is currently using.

Detail	Description
<b>Database Name</b>	The database that the client is using. If the client is connected to more than one database, the databases will be listed here.
<b>Account Name</b>	The <a href="#">account</a> name used to log in to FileMaker Server.
<b>Privilege Set</b>	The FileMaker Pro <a href="#">privilege set</a> used by the account to access the hosted database.
<b>Connect Time</b>	The date and time the client connected to the database.

### Related topic

[Administering clients](#) (page 88)

## Sending messages to FileMaker Pro clients

You can send a message to FileMaker Pro [clients](#) connected to databases hosted by FileMaker Server. You can send a message to selected or all FileMaker Pro clients.

### To send a message to one or more clients:

1. Choose **Clients**, then select a client in the **Connected Clients** list.

2. For **Actions**, select **Send Message** or **Send Message to All Clients**.

If you select **Send Message**, the message is sent to the selected clients.

If you select **Send Message to All Clients**, the message is sent to all clients connected to all databases hosted by FileMaker Server.

3. Click **Perform Action** to open the Send Message dialog box.

4. Type a message, then click **Send Message**.

FileMaker Server sends the message to the selected clients.

### Notes

- You cannot send messages to clients connected via [Instant Web Publishing](#) or [Custom Web Publishing](#).
- You can also send a message to FileMaker Pro clients by scheduling a Send Message task.

### Related topics

[Sending messages to FileMaker Pro clients of selected databases](#) (page 95)

[Disconnecting clients](#) (page 92)

[Sending scheduled messages to clients of hosted databases](#) (page 133)

[Administering clients](#) (page 88)

# Disconnecting clients

## To disconnect a selected client or all clients from FileMaker Server:

1. Choose **Clients**, then select a [client](#) in the **Connected Clients** list.
2. For **Actions**, select **Disconnect** or **Disconnect All Clients**.
3. Click **Perform Action**.

The Disconnecting Clients dialog box opens.

4. For **Message**, type the message to send to clients before they are disconnected.
5. For **Delay time**, enter the number of minutes between when the notification is sent and when clients are disconnected.
6. Click **Send Message**.

Clients see a notification dialog box with your message requesting they close their connection to a file.

If the client hasn't already disconnected, FileMaker Server disconnects the client when the delay time elapses.

## Related topics

[Sending messages to FileMaker Pro clients](#) (page 91)

[Closing hosted files](#) (page 97)

[Administering clients](#) (page 88)

# Administering databases

The **Databases** pane lists all databases hosted by FileMaker Server. The database files are grouped in the default [Databases folder](#), the additional database folder, and any subfolders. To manage hosted databases, choose what you want to do from **Actions** and click **Perform Action**.

## About hosted databases

When FileMaker Server starts, it automatically opens, or hosts, all files in the FileMaker Server Databases folder and the optional additional database folder as well as files in subfolders one level down. See [Hosting databases](#) (page 31).

## Viewing database details

You can view the **Status** of each database, the [extended privileges](#) enabled by FileMaker Pro, and the **Details for clients** currently connected to the database.

## Managing hosted databases

Select one or more databases, choose one of the following **Actions**, then click **Perform Action**:

For <b>Actions</b> , choose	To
<b>Send Message</b>	Send a text message to all FileMaker Pro clients connected to the selected databases. See <a href="#">Sending messages to FileMaker Pro clients of selected databases</a> (page 95).
<b>Send Message to all</b>	Send a text message to all FileMaker Pro clients connected to any database hosted by FileMaker Server. See <a href="#">Sending messages to FileMaker Pro clients of selected databases</a> (page 95).
<b>Open</b>	Open selected databases with the <b>Status: Closed</b> or <b>Checking</b> . See <a href="#">Opening hosted files</a> (page 96).
<b>Open all</b>	Open all databases with the <b>Status: Closed</b> or <b>Checking</b> . See <a href="#">Opening hosted files</a> (page 96).
<b>Close</b>	Close selected databases with the <b>Status: Normal, Paused, Opening</b> , or <b>Checking</b> . See <a href="#">Closing hosted files</a> (page 97).
<b>Close all</b>	Close all databases with the <b>Status: Normal</b> or <b>Paused</b> . See <a href="#">Closing hosted files</a> (page 97).
<b>Pause</b>	Pause selected databases with the <b>Status: Normal</b> . See <a href="#">Pausing hosted files</a> (page 98).
<b>Pause all</b>	Pause all databases with the <b>Status: Normal</b> . See <a href="#">Pausing hosted files</a> (page 98).
<b>Resume</b>	Resume selected databases with the <b>Status: Paused</b> . See <a href="#">Resuming hosted files</a> (page 99).
<b>Resume all</b>	Resume all databases with the <b>Status: Paused</b> . See <a href="#">Resuming hosted files</a> (page 99).
<b>Remove</b>	Remove selected databases with the <b>Status: Closed</b> or delete empty subfolders. See <a href="#">Removing hosted files</a> (page 100).

For <b>Actions</b> , choose	To
<b>Upload</b>	<a href="#">Upload</a> FileMaker Pro databases. Selecting this option opens the Upload Database <a href="#">assistant</a> to copy database files to the FileMaker Server <b>Default Folder</b> or <b>Additional Folder</b> . See <a href="#">Uploading database files</a> (page 33).

## Notes

- You can use the shortcut menu in the Databases list to perform the commands listed in **Actions**. Right-click selected databases and choose an action.
- To resize the width of a column, select the column heading border and drag it horizontally.
- To put the columns in a different order, click a column heading, drag it, and drop it at the desired location.
- To copy information from the databases list or details list, select the row and choose **Edit** menu > **Copy**.

## Related topics

[Hosting databases](#) (page 31)

[Database Server security settings](#) (page 70)

[Scheduling database backups](#) (page 128)

## Sending messages to FileMaker Pro clients of selected databases

You can send a message to FileMaker Pro [clients](#) connected to selected databases or all databases hosted by FileMaker Server.

### To send a message:

1. Choose **Databases**.
2. Open the **Databases** folder or the additional database folder, if required.
3. If you are sending a message to clients of selected databases, select one or more databases.
4. For **Actions**, select **Send Message** or **Send Message to all**.

If you select **Send Message**, the message is sent to all FileMaker Pro clients connected to the selected databases.

If you select **Send Message to all**, the message is sent to all FileMaker Pro clients connected to any databases hosted by FileMaker Server.

5. Click **Perform Action** to open the Send Message dialog box.
6. Type a message, then click **Send Message**.

FileMaker Server sends the message to clients connected to the selected databases.

**Note** You cannot send messages to clients connected via [Instant Web Publishing](#) or [Custom Web Publishing](#).

### Related topics

[Sending messages to FileMaker Pro clients](#) (page 91)

[Sending scheduled messages to clients of hosted databases](#) (page 133)

[Administering databases](#) (page 93)

## Opening hosted files

Open one or more database files with a **Closed** status.

### To open hosted databases:

1. Choose **Databases**.
2. Open the **Databases** folder or the additional database folder, if required.
3. If you are opening selected databases, select one or more **Closed** databases.
4. For **Actions**, select **Open** or **Open all**.
5. Click **Perform Action**.

### Notes

- If you select a folder in the Databases list, FileMaker Server opens all of the files in that folder.
- If the status changes to **Checking**, FileMaker Server is checking the file's structure before opening it. Checking a large file may take several minutes.
- You can also open a database with the **Checking** status to skip the consistency check. You should do this only if the database does not open.

### Related topics

[Closing hosted files](#) (page 97)

[Disconnecting clients](#) (page 92)

[Administering databases](#) (page 93)

## Closing hosted files

Close one or more hosted databases with **Normal** or **Paused** status.

### To close databases and disconnect clients:

1. Choose **Databases**.
2. Open the **Databases** folder or the additional database folder, if required.
3. If you are closing selected databases, select one or more **Normal** or **Paused** databases.
4. For **Actions**, select **Close** or **Close all**.
5. Click **Perform Action**.
6. If you see the Close Databases dialog box, do the following:
  - For **Message**, type the message to send to [clients](#) before they are disconnected.
  - For **Delay time**, enter the number of minutes between when the notification is sent and when clients are disconnected.
  - Click **Send Message**.

Clients see a notification dialog box with your message requesting they close their connection to a file.

When the delay time elapses, FileMaker Server disconnects any remaining clients and closes the file or files in the folder. The status of the affected files changes to **Closed**.

The **Status** of the files being closed changes to **Closing** to indicate that FileMaker Server has begun closing files.

Completing the process of closing many database files, a large database file, or a file with many connected clients may take several minutes.

**Note** **Close** can be performed on a database with the **Opening** or **Checking** status, canceling the consistency check performed when the file is opened.

### Related topics

[Disconnecting clients](#) (page 92)

[Viewing statistics](#) (page 108)

[Sending messages to FileMaker Pro clients](#) (page 91)

[Administering databases](#) (page 93)

## Pausing hosted files

Temporarily stop access to one or more open databases with **Normal** status. Connected [clients](#) can read data from the database while it is paused, but cannot modify the database until the database is resumed. For example, you can pause a database and safely use the operating system to make a copy of the file.

### To pause one or more hosted databases:

1. Choose **Databases**.
2. Open the **Databases** folder or the additional database folder, if required.
3. If you are pausing selected databases, select one or more **Normal** databases.
4. For **Actions**, select **Pause** or **Pause all**.
5. Click **Perform Action**.

### Related topics

[Resuming hosted files](#) (page 99)

[Opening hosted files](#) (page 96)

[Closing hosted files](#) (page 97)

[Administering databases](#) (page 93)

## Resuming hosted files

Make available one or more databases that have been paused.

### To resume one or more hosted databases:

1. Choose **Databases**.
2. Open the **Databases** folder or the additional database folder, if required.
3. If you are resuming selected databases, select one or more **Paused** databases.
4. For **Actions**, select **Resume** or **Resume all**.
5. Click **Perform Action**.

### Related topics

[Pausing hosted files](#) (page 98)

[Opening hosted files](#) (page 96)

[Closing hosted files](#) (page 97)

[Administering databases](#) (page 93)

## Removing hosted files

You can remove one or more selected databases with **Closed** status or delete empty subfolders. The selected databases are moved to the folder Removed\_by\_FMS/Removed. The Removed\_by\_FMS/Removed folder is created inside either the default [Databases folder](#) or the additional database folder, depending on which folder the selected databases are in.

The following table shows examples of where hosted databases are moved to after they are removed:

Location before remove	Location after remove
Databases\ABC.fp7	Databases\Removed_By_FMS\ Removed\ABC.fp7
Databases\[Subfolder]\ ABCsub.fp7	Databases\Removed_By_FMS\Removed\ [Subfolder]\ABCsub.fp7
[Additional]/ABCadd.fp7	[Additional]/Removed_By_FMS/Removed/ ABCadd.fp7
[Additional]/[Subfolder]/ ABCsub.fp7	[Additional]/Removed_By_FMS/Removed/ [Subfolder]/ABCsub.fp7

### To remove one or more databases:

1. Choose **Databases**.
2. Open the **Databases** folder or the additional database folder, if required.
3. Select one or more **Closed** databases.
4. For **Actions**, select **Remove**.
5. Click **Perform Action**.
6. Click **Yes** to remove the selected databases.

**Note** If you remove a hosted file, [upload](#) a file with the same filename, and remove the second file, then FileMaker Server overwrites the first removed file with the second removed file.

### To delete empty subfolders:

1. Choose **Databases**.
2. Select one or more empty subfolders in the list.  
You must remove all files from a subfolder before you can delete it.
3. For **Actions**, select **Remove**.
4. Click **Perform Action**.
5. Click **Yes** to remove the empty folder.

The selected empty folders are deleted, not moved as when a database is removed.

### Related topics

[Closing hosted files](#) (page 97)

[Hosting databases](#) (page 31)

[Administering databases](#) (page 93)

# Using ODBC and JDBC with FileMaker Server

You can use FileMaker Server as:

- a [data source](#), if you have a FileMaker Server Advanced license. You can share hosted FileMaker Pro database files with other applications on the same computer or over a network using [ODBC](#) (Open Database Connectivity) and [JDBC](#) (Java Database Connectivity). For example, you can create charts, analyze numbers, and generate reports using FileMaker Pro data in other applications.
- an ODBC [client application](#). Hosted FileMaker Pro databases can interact with data sources on the same computer or over a network. For example, hosted FileMaker Pro databases can work with an Oracle data source interactively as defined in the FileMaker Pro [relationships graph](#) and in layouts.

## FileMaker Server Advanced as a data source

FileMaker Server Advanced includes the software you need to share databases as data sources via ODBC and JDBC, including the FileMaker client [drivers](#) you use to access your databases from other ODBC- or JDBC-compliant applications. See [Sharing FileMaker databases via ODBC and JDBC](#) (page 103) for information about enabling a database file for sharing.

For details about supported [SQL](#) statements, expressions, Catalog functions, and client drivers, see the FILEMAKER ODBC AND JDBC GUIDE on the Start Page.

## FileMaker Server as an ODBC client application

When you use FileMaker Server or FileMaker Server Advanced as a client application, you must install and configure drivers for the ODBC data sources to access and set up the data source names (DSNs) that hosted FileMaker Pro databases are designed to use. For example, to access data from an Oracle database using ODBC, you must install and configure an Oracle ODBC client driver and set up exactly the same DSNs that the FileMaker Pro database was designed to use. FileMaker Server supports several third-party drivers. For more information, see [Accessing external ODBC data sources](#) (page 105).

See FileMaker Pro Help for information about:

- working with ODBC data sources interactively, in real-time, in the relationships graph and in layouts.
- importing ODBC data in batch operations with SQL queries.

## What you need to work with ODBC in FileMaker Server

What do you want to do?	See	Product
Host a FileMaker Pro database as a data source	<a href="#">Sharing FileMaker databases via ODBC and JDBC</a> (page 103) FILEMAKER ODBC AND JDBC GUIDE on the Start Page	FileMaker Server Advanced license required
Host a FileMaker Pro database that accesses an external ODBC data source	<a href="#">Accessing external ODBC data sources</a> (page 105) FileMaker Pro Help	FileMaker Server or FileMaker Server Advanced

**Related topic**

[Server information settings](#) (page 55)

# Sharing FileMaker databases via ODBC and JDBC

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](#). FileMaker Server allows up to 50 connections and supports local access (same computer) and remote access (both for middleware such as [web servers](#), and for remote [client](#) access from desktop productivity applications).

## To share a hosted FileMaker Pro database via ODBC and JDBC:

1. In FileMaker Pro, open the database and edit the [privilege set](#) for the accounts that will access the database. Enable the [extended privilege Access via ODBC/JDBC](#). For more information, see FileMaker Pro Help.

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must use this privilege set with the extended privilege [Access via ODBC/JDBC](#) enabled.

2. In FileMaker Server Admin Console, click [ODBC/JDBC](#) and select [Enable ODBC/JDBC](#).
3. Upload the database file to FileMaker Server. See [Hosting databases](#) (page 31).

**Note** If your FileMaker database solution uses more than one FileMaker database file, all of the database files must be hosted on the same FileMaker Server [deployment](#).

4. On each client computer that needs to access the hosted database, install and configure the FileMaker ODBC or JDBC client [driver](#).

For details on installing and configuring a client driver to access your FileMaker data source, see the FILEMAKER ODBC AND JDBC GUIDE on the Start Page.

## Related topics

[Enabling sharing via ODBC and JDBC](#) (page 104)

[Using ODBC and JDBC with FileMaker Server](#) (page 101)

## Enabling sharing via ODBC and JDBC

FileMaker Server Advanced can host data via [ODBC/JDBC](#) for other applications (like spreadsheets, word processors, and reporting tools). Users can view, analyze, and modify data in hosted FileMaker databases. To host data, you must enable this feature in FileMaker Server Admin Console and use FileMaker Pro to enable sharing via ODBC/JDBC in each database that you want to share.

For more information, see [Sharing FileMaker databases via ODBC and JDBC](#) (page 103).

**Note** Sharing via ODBC/JDBC requires a FileMaker Server Advanced license.

### To enable sharing via ODBC/JDBC:

1. Choose **ODBC/JDBC**.
2. Select **Enable ODBC/JDBC**.
3. Click **Save**.

### Notes

- Enabling this feature allows clients to use FileMaker Server as a [data source](#) via ODBC and JDBC. You do not need to enable this ODBC/JDBC data source feature to host FileMaker Pro databases that access an external SQL data source via ODBC. See [Accessing external ODBC data sources](#) (page 105).
- For other applications to access FileMaker data hosted on FileMaker Server, ODBC and JDBC client [drivers](#) must be installed on the machines running the other applications. Installers for the client drivers are provided on the FileMaker Server CD or you can download them.
- You must use FileMaker Pro to enable ODBC/JDBC sharing in each database you want to share. For details about sharing via ODBC/JDBC, see FileMaker Pro Help.
- For more information on installing the client drivers and for details on the [SQL](#) statements supported by FileMaker Server Advanced, see the FILEMAKER ODBC AND JDBC GUIDE on the Start Page.

### Related topics

- [Uploading database files](#) (page 33)
- [Email notification settings](#) (page 57)
- [Database Server security settings](#) (page 70)
- [Server information settings](#) (page 55)

## Accessing external ODBC data sources

If you want to host a FileMaker Pro database that works with data in an external [ODBC data source](#), you must configure an [ODBC client driver](#) for the ODBC data source that the FileMaker Pro database accesses. For example, if the database accesses records from an Oracle database, you must configure an Oracle client driver.

**Note** The ODBC client driver must be installed and configured on the [master](#) machine in your FileMaker Server [deployment](#).

When a FileMaker Pro or web publishing client connects to the hosted FileMaker Pro database, FileMaker Server accesses data in the external ODBC data source on behalf of the client. Therefore, the client connected to FileMaker Server does not directly interact with the external data source, and does not need to install and configure an ODBC client driver. Only the master machine in the FileMaker Server deployment requires the ODBC client driver.

For detailed information on designing a FileMaker Pro database that accesses external data sources, see FileMaker Pro Help.

### To configure an ODBC client driver and set up a DSN on FileMaker Server:

The way you interact with the data source, provide a password, and perform and display query results varies with each application's client driver. Additionally, data source configuration can vary from one ODBC client driver manufacturer to another.

For a list of supported data sources and ODBC client drivers, see FileMaker Pro Help.

Use the following procedure as a general guideline for configuring data sources (refer to the documentation that accompanies each data source application for details).

1. (Windows) In the Windows Control Panel, choose **Administrative Tools > Data Sources (ODBC)**. In Windows XP, **Administrative Tools** appear in the **Performance and Maintenance** category.

(Mac OS) Start the ODBC data source administrator. The ODBC Administrator utility is available with Mac OS X (in the Applications/Utilities folder).

2. Click the **System DSN** tab.

If your data source appears in the list, the driver is already configured. You can skip the remaining steps and begin accessing ODBC data, or choose your data source and click **Configure** to modify how you'll interact with the data source.

A System [DSN](#) (Data Source Name) is available to all users who log in to your computer. A User DSN is available only when you log in.

---

**Important** Only System DSNs are supported for FileMaker Pro databases that work with ODBC tables in the FileMaker Pro [relationships graph](#).

---

3. Click **Add** to configure a driver for your data source.

A list displays all ODBC client drivers installed on your computer.

FileMaker Server supports several third-party drivers. For more information on supported drivers, see [www.filemaker.com/support/technologies](http://www.filemaker.com/support/technologies).

To install a new driver, use the driver's installation program.

4. Choose the driver for the data source that the hosted FileMaker Pro database is designed to access, then click **Finish**.

A setup dialog box appears.

5. In **Data Source Name**, enter the identical Data Source Name that the FileMaker Pro database is designed to connect to.

---

**Important** The Data Source Name you enter here must be exactly the same as the Data Source Name that the database was designed to use in FileMaker Pro. So for each Data Source Name used by each database you host, you must configure a matching Data Source Name on the FileMaker Server master machine.

---

Many drivers also offer options to customize how you access a data source, such as identifying a particular data source file.

6. Click **OK**.

### **Related topic**

[Using ODBC and JDBC with FileMaker Server](#) (page 101)

## Monitoring FileMaker Server

You can view usage statistics and track the activity of FileMaker Server. Admin Console displays usage statistics that help you monitor server performance. To help you monitor your FileMaker Server [deployment](#) and troubleshoot problems, FileMaker Server helps you perform the following tasks:

- [Viewing statistics](#) (page 108)
- [Tracking activity in log files](#) (page 110)

The following table summarizes where you can find the information that FileMaker Server tracks for you.

To monitor	See	Description
Usage statistics	<b>Statistics</b> pane Stats.log ( <a href="#">master</a> machine)	FileMaker Server performance and number of clients logged in.
Events	Events.log (master machine) Windows: <a href="#">Event Viewer</a> (master machine)	<a href="#">Database Server</a> start and stop events, consistency checks, error conditions in FileMaker Server configuration.
<a href="#">Client</a> accesses to the Database Server	Access.log (master machine)	Client connect/disconnect and database open/close operations.
<a href="#">Web Publishing Core</a> internal access	wpc_access_log.txt ( <a href="#">Web Publishing Engine</a> machine)	End-user requests to generate <a href="#">XML</a> and to use FileMaker Server <a href="#">Instant Web Publishing</a> including requests from the FileMaker <a href="#">API</a> for <a href="#">PHP</a> .
	pe_internal_access_log.txt (Web Publishing Engine machine)	Internal XML requests that the <a href="#">XSLT-CWP</a> software component of the Web Publishing Engine makes while processing XSLT requests.
<a href="#">Web Publishing Engine</a> application log	pe_application_log.txt. (Web Publishing Engine machine)	Web Publishing Engine start and stop events, error, script, and user log information.
<a href="#">Web Server Module</a>	web_server_module_log.txt ( <a href="#">web server</a> machine)	Communication errors between the web server and with Web Publishing Engine

All log files are located in the Logs folder:

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Log
- Mac OS:/Library/FileMaker Server/Logs

**Note** In a multiple machine deployment, the log files are on the machines indicated in the table above.

## Viewing statistics

To view FileMaker Server statistics in Admin Console, choose **Statistics**. The Statistics pane lists a summary of **Connection** and **Database Statistics** attributes.

### Connection Statistics

The attributes collected for each statistic **Type** include the number of **Current**, **Average**, **Low**, and **Peak client** connections.

Statistic	Description
<b>FileMaker Pro Clients</b>	Number of connected FileMaker Pro clients. Use this information to configure the maximum number of FileMaker Pro clients.
<b>ODBC/JDBC</b>	Number of connected <b>ODBC/JDBC</b> clients.
<b>Instant Web Publishing</b>	Number of connected <b>Instant Web Publishing</b> clients.
<b>Custom Web Publishing (PHP, XML, XSLT)</b>	Number of connected <b>Custom Web Publishing</b> clients. Use this information to configure the maximum number of Custom Web Publishing clients.

### Database Statistics

The attributes collected for each statistic **Type** include the **Current**, **Average**, **Low**, and **Peak** value.

Statistic	Description
<b>Cache Hit %</b>	Percentage of times FileMaker Server retrieved data from the <b>cache</b> (RAM) rather than the hard disk. Reading data from RAM is much more efficient than rereading it from the hard disk, so this value should be a high number, like 90 or 95. If it isn't, you can allocate more memory to FileMaker Server database cache.
<b>Cache Unsaved %</b>	Percentage of cache that is currently unsaved. This should be a 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, decrease the cache flush interval.
<b>Disk (Kbytes/second)</b>	Amount of data being written to disk. Data is measured in KB.
<b>Elapsed Time/Call</b>	Time to process a remote call. If the average Elapsed Time/Call is high, but the average Wait Time/Call is low, ask clients whether the operations they are performing on the Server have changed. Adding indexes for more fields or other solution changes may be required.
<b>I/O Time/Call</b>	Time a remote call waits for disk reads or writes. If the average I/O Time/Call is high and the average Cache Hit % is low, you can increase the Database Cache Size. If the average I/O Time/Call is high and the average Cache Hit % is high, you can use additional hard drives or a RAID system on your computer.
<b>Network (Kbytes/second)</b>	Amount of data being transferred across the network, measured in KB.
<b>Open Databases</b>	Number of open databases. Use this information to configure the <b>Maximum number of files to host</b> option.

Statistic	Description
<b>Remote Calls/Second</b>	Number of separate remote calls received from all clients, divided by the statistics sampling interval. Note that there can be multiple remote calls to perform a single operation from the client's perspective.
<b>Wait Time/Call</b>	Time a remote call waits for other processes.

FileMaker Server updates the statistics list at the time interval you specify. To reduce the overhead required to calculate statistics, you can increase the interval between each time FileMaker Server collects statistics. However, the statistics then become approximations of how FileMaker Server is actually using system resources.

For information on configuring the statistics collection interval, see [Logging and statistics settings](#) (page 76).

FileMaker Server can also store statistics in a log file. See [Tracking activity in log files](#) (page 110).

### Related topics

[Administering clients](#) (page 88)

[Administering databases](#) (page 93)

[Logging and statistics settings](#) (page 76)

[Monitoring FileMaker Server](#) (page 107)

## Tracking activity in log files

FileMaker Server tracks activity and [client](#) access and other information as it operates and stores this information in these log files:

- [Event log](#) (page 111)
- [Access log](#) (page 115)
- [Statistics log](#) (page 116)
- [Web publishing logs](#) (page 117)
- [Web Server Module log](#) (page 118)

You can use any application capable of opening plain text files or the Mac OS Console application to view or print the log files.

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.

All log files are located in the Logs folder:

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Logs
- Mac OS:/Library/FileMaker Server/Logs

**Note** In a multiple machine [deployment](#), the log files are on the same machine as the FileMaker Server component that generates the log.

### Related topics

[Logging and statistics settings](#) (page 76)

[General web publishing settings](#) (page 79)

[Monitoring FileMaker Server](#) (page 107)

## Event log

Events that occur while the [Database Server](#) is running are logged and timestamped. Typical events that are logged include:

- Database Server starting and stopping
- database files opened and closed by the Database Server
- consistency checks performed on files that were not closed properly or have not been opened in a FileMaker product
- new, completed, upcoming, and currently running [schedules](#)
- pre-defined errors and conditions that the Database Server detects in your configuration
- current properties settings when the Database Server starts up, as well as settings that are changed during a Database Server session

Events are logged in the tab-delimited Event.log file that is created in the FileMaker Server/Data/Logs/ folder.

You can view the Event.log file in any application that can read tab-delimited data (FileMaker Pro or a text editor) or the Console application (Mac OS).

When the Event.log file reaches the **Log Size** specified on the **Database Server > Logging** tab, it is renamed Event-old.log and a new Event.log file is created. To configure the size of the Event.log file, see [Logging and statistics settings](#) (page 76).

In Windows, events are also logged in the Windows Application Log accessed with the [Event Viewer](#). For more information, see [Viewing activities in the Event Viewer \(Windows\)](#) (page 112).

For more information about the error conditions reported in the event log, see [FileMaker Server event log messages](#) (page 164).

### Related topics

[Changing the language of the Event log](#) (page 113)

[Tracking activity in log files](#) (page 110)

## Viewing activities in the Event Viewer (Windows)

To view information about FileMaker Server activities, you can use the Windows [Event Viewer](#). To open Event Viewer, click **Start** menu > **Control Panels** > **Administrative Tools** > **Event Viewer**. Select the **Application** log.

In the **Source** column, look for events logged by FileMaker Server. 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.

### Related topics

[Event log](#) (page 111)

[Tracking activity in log files](#) (page 110)

## Changing the language of the Event log

If you prefer to use a different language in the [Event.log](#) than the one used by your computer at the time you installed FileMaker Server, you can change the language of the Event.log by modifying a preferences file (Mac OS) or the registry (Windows) on the [master](#) machine.

In the steps below, you can change the locale setting to the name of one of the following supported languages exactly as shown here: English, French, German, Japanese, Italian, or Swedish. (Locale names are case-sensitive.)

### To change the language used for the Event.log (Mac OS):

---

**Important** The following procedure is recommended only for advanced users who are familiar with the Terminal application. You must be logged in as the root user.

---

1. Start the Terminal application (/Applications/Utilities/Terminal/).
2. Stop the [Database Server](#). For more information, see [Starting and stopping FileMaker Server](#) (page 51).
3. Log in as the root user.
4. Navigate to the `.plist` file in the following location:  
`/Library/FileMaker Server/Library/Preferences/ByHost`
5. In the line after `<key>System Locale</key>`, change the name of the locale to one of the values given above.  
For example, change `<string>Japanese</string>` to `<string>French</string>`.
6. Save your changes.
7. Restart the Database Server for the change to take effect.  
The next time you open Event.log, the entries will appear in the new language.

### To change the language used for the Event.log (Windows):

---

**Important** The following procedure is recommended only for advanced users who are familiar with the Windows registry. You must be logged in with an [account](#) that has administrator privileges.

---

1. Stop the Database Server. For more information, see [Starting and stopping FileMaker Server](#) (page 51).
2. Start Registry Editor.  
Click **Start** button > **Run**. In the Run dialog box, enter `regedit`.  
**Tip** Use Registry Editor to export a copy of the registry before you continue.
3. In Registry Editor, find the following key:  
`HKEY_LOCAL_MACHINE\SOFTWARE\FileMaker\FileMaker Server\9.0\Preferences`
4. In this key, double-click the `SystemLocale` entry.
5. Change the value of the `SystemLocale` entry to one of the values given above, then click **OK**.  
For example, change Japanese to French.
6. Exit Registry Editor.

7. Restart the Database Server for the change to take effect.

The next time you open Event.log, the entries will appear in the new language.

### **Related topics**

[Event log](#) (page 111)

[Tracking activity in log files](#) (page 110)

## Access log

The [Database Server](#) logs accesses to databases in a separate log file called Access.log. Typical events that are logged include:

- clients that connect to and disconnect from the Database Server
- databases that clients access with a unique [account](#) and with the built-in Guest account

Accesses are logged in the tab-delimited Access.log file that is created in the FileMaker Server/Data/Logs/ folder.

You can view the Access.log file in any application that can read tab-delimited data (FileMaker Pro or a text editor) or the Console application (Mac OS).

When the Access.log file reaches **Log Size** specified on the **Database Server > Logging** tab, it is renamed Access-old.log and a new Access.log file is created.

To configure access logging, see [Logging and statistics settings](#) (page 76).

### Related topic

[Tracking activity in log files](#) (page 110)

## Statistics log

When you enable statistical logging for the [Database Server](#), a log file is created in the FileMaker Server/Data/Logs/ folder. All of the values that you see in the **Statistics** pane in Admin Console are timestamped and written to a file. See [Viewing statistics](#) (page 108).

You can view these statistics by opening the Stats.log file in any application that can read tab-delimited data (FileMaker Pro or a text editor) or the Console application (Mac OS).

When the Stats.log file reaches **Log Size** specified on the **Database Server > Logging** tab, it is renamed Stats-old.log and a new Stats.log file is created.

To configure statistics logging, see [Logging and statistics settings](#) (page 76).

### Related topic

[Tracking activity in log files](#) (page 110)

## Web publishing logs

The [Web Publishing Engine](#) generates the following log files:

- The wpc\_access\_log.txt access log is a record of all end-user requests to generate [XML](#) and to use FileMaker Server [Instant Web Publishing](#). These requests are routed from the [web server](#) directly to the Web Publishing Core component of the Web Publishing Engine.
- The pe\_internal\_access\_log.txt access log is a record of all internal XML requests that the XSLT-CWP software component of the Web Publishing Engine makes while processing [XSLT](#) requests. These requests are routed internally within the Web Publishing Engine from the XSLT-CWP software component to the Web Publishing Core software component.
- The pe\_application\_log.txt application log file is a record of Web Publishing Engine error, [ScriptMaker](#) script, and user log information.
  - The error log information describes any unusual Web Publishing Engine errors that have occurred. Common errors reported to the web user, such as “Database not open,” are not recorded.
  - The script log information describes any errors generated when web users execute scripts. For example, it lists script steps that are skipped if they’re not web-compatible.
  - The user log messages contains messages generated by the XSLT `<xsl:message>` element in XSLT stylesheets. Whenever web users access your XSLT stylesheet, information you’ve included within a `<xsl:message>` element is recorded in the application log file.

To configure logging for web publishing, see [General web publishing settings](#) (page 79).

**Note** For more information on web publishing logs, see FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH XML AND XSLT and FILEMAKER SERVER CUSTOM WEB PUBLISHING WITH [PHP](#) on the Start Page.

### Related topic

[Tracking activity in log files](#) (page 110)

## Web Server Module log

If the [web server](#) is unable to connect to the [Web Publishing Engine](#), the [Web Server Module](#) generates a log file that is a record of any errors with its operation. This file is called `web_server_module_log.txt` and is located in the FileMaker Server/Logs/ folder on the machine running the web server.

### Related topic

[Tracking activity in log files](#) (page 110)

## Managing plug-ins

FileMaker Server can use external function [plug-ins](#) with hosted FileMaker Pro databases that are designed to use server-side plug-ins. When hosted databases use plug-ins enabled on FileMaker Server, the machine running FileMaker Server can execute plug-in functions rather than [client](#) machines.

Alternatively, FileMaker Server can automatically install or update required or outdated client-side plug-ins on FileMaker Pro clients.

### Notes

- For information on solving calculations on a host machine, see FileMaker Pro Help.
- For information about developing third-party FileMaker plug-ins, see the FILEMAKER PRO ADVANCED DEVELOPMENT GUIDE available at [www.filemaker.com/downloads](http://www.filemaker.com/downloads).

### Related topics

[Enabling server-side plug-ins](#) (page 120)

[Enabling auto-update for plug-ins](#) (page 123)

## Enabling server-side plug-ins

Server-side [plug-ins](#) can provide external functions used in the following:

- stored calculations or server-side queries
- [ScriptMaker](#) scripts that are scheduled to run on FileMaker Server (see [Running ScriptMaker scripts](#) (page 131))

### To enable plug-ins on FileMaker Server:

1. Place plug-ins in the proper folders so that FileMaker Server can use them.  
For details, see [Folders for server-side plug-in files](#) (page 121).
2. In Admin Console, click the **Database Server > Server Plug-ins** tab.
3. Select **Enable FileMaker Server to use plug-ins**.  
The list shows the plug-ins that are in the plug-in folder.
4. Select **Enabled** for each plug-in that you want to execute on FileMaker Server.
5. Click **Save**.

### Notes

- Some plug-ins (and the libraries they reference) load only when the process is executed by a user who is logged into the system; FileMaker Server executes as a [service](#) (Windows) or a [daemon](#) (Mac OS), not as a user process. Consequently, developers need to write plug-ins differently to work with FileMaker Server. Users will need to see their operating system documentation to find which libraries are typically available.
- If a web publishing solution uses a plug-in, you must place a copy of the same plug-in in a folder on the machine running the [Web Publishing Engine](#) (even if the Web Publishing Engine is running on the same machine as the [Database Server](#)).

### Related topic

[Managing plug-ins](#) (page 119)

## Folders for server-side plug-in files

To enable the [Database Server](#) to use [plug-ins](#), you must place them in the proper folder on the [master](#) machine in your FileMaker Server [deployment](#).

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Database Server\Extensions\
- Mac OS: /Library/FileMaker Server/Database Server/Extensions/

If a web publishing solution uses a plug-in, you must place a copy of the same plug-in in a folder on the machine running the [Web Publishing Engine](#) (even if the Web Publishing Engine is running on the same machine as the database server).

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Web Publishing\publishing-engine\wpc\Plugins\
- Mac OS: /Library/FileMaker Server/Web Publishing/publishing-engine/wpc/Plugins/

### Notes

- For FileMaker Server on Mac OS, you must set the correct file permissions for plug-ins. See [Changing plug-in file permissions \(Mac OS\)](#) (page 122).
- You must install the plug-ins for the Web Publishing Engine in addition to any plug-ins you may have installed for FileMaker Server or FileMaker Pro, even if they are the same plug-ins.
- If the Plugins folder does not exist, you must create it. Plug-in files placed in this folder or subfolders must be owned by the `fmsadmin` group and be group readable and executable.

### Related topic

[Enabling server-side plug-ins](#) (page 120)

## Changing plug-in file permissions (Mac OS)

### To change plug-in file permissions:

1. Start the Terminal application and use the `cd` command to set your path as needed.
2. Enter the following at the command line:

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

or

```
chmod g+wx <filepath>
```

The `g+rx` is necessary because [plug-ins](#) and system-level scripts must have the group read and executable bits enabled. Use the `g+wx` 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.

### Related topics

[Folders for server-side plug-in files](#) (page 121)

[Enabling auto-update for plug-ins](#) (page 123)

[Enabling server-side plug-ins](#) (page 120)

## Enabling auto-update for plug-ins

If database files hosted on FileMaker Server use [plug-ins](#) that are designed to execute on the [client](#), you can enable the Auto Update plug-in feature in both FileMaker Server and FileMaker Pro clients. This feature enables FileMaker Server to automatically install or update required or outdated plug-ins or support files on FileMaker Pro clients.

### To automatically update a plug-in:

1. Copy the plug-in or support file to the [master](#) machine in your FileMaker Server [deployment](#).  
Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Data\Databases\AutoUpdate\  
Mac OS: /Library/FileMaker Server/Data/Databases/AutoUpdate/
2. (Mac OS) Plug-ins installed on FileMaker Server for Mac OS must also be owned by the group `fmsadmin` and have group read permission.  
**Note** Convert plug-ins to .tar file format to be placed on FileMaker Server for Mac OS. See [Preparing Mac OS plug-in files for conversion to .tar format](#) (page 124).
3. In Admin Console, click the **Database Server > FileMaker Pro Clients** tab, then select **Allow FileMaker Pro clients to download updates automatically**.
4. In FileMaker Pro, users must enable the **Auto Update** feature in the **Plug-Ins** tab in the Preferences dialog box.

For more information on updating plug-ins, see FileMaker Pro Help.

For more information on preparing a plug-in and a database for the Auto Update feature, see the FILEMAKER SERVER GUIDE TO UPDATING PLUG-INS on the Start Page.

### Related topics

[Changing plug-in file permissions \(Mac OS\)](#) (page 122)

[Managing plug-ins](#) (page 119)

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

FileMaker Server on Mac OS temporarily converts an uncompressed Mac OS [plug-in](#) to the .tar format for downloading to clients. However, this automatic conversion deletes any resource forks, which may make a plug-in that contained a resource fork unusable by the [client](#).

Mac OS plug-in files that contain a resource fork require special actions to work properly with Auto Update:

- The plug-in must be manually compressed before being placed on FileMaker Server.
- Any Mac OS FileMaker Pro client using Auto Update with this plug-in must have StuffIt Expander installed to automatically decompress the plug-in.

### To manually compress a plug-in containing a resource fork:

1. Use a third-party utility like StuffIt Standard to manually compress the entire Mac OS plug-in into a single file such as a .sitx archive. You can use any utility that compresses files with resource forks, as long as the output file can be automatically decompressed by StuffIt Expander.
2. Rename the compressed file with the .sitx or other extension to end with .tar. For example, if the plug-in is named `test.fmpugin`, and the compressed file is named `test.fmpugin.sitx`, that compressed file must be renamed to `test.fmpugin.tar`.
3. Place the compressed plug-in on the server computer in the appropriate folder. See [Folders for server-side plug-in files](#) (page 121).

---

**Important** StuffIt Expander must be installed on the Mac OS client computer to expand the specially compressed plug-in. Auto Update automatically calls StuffIt Expander after downloading the plug-in. StuffIt Expander is available from [www.allume.com](http://www.allume.com).

---

### Related topic

[Enabling auto-update for plug-ins](#) (page 123)

## Securing your data

You can take advantage of several FileMaker Server features that make your data more secure for both FileMaker Pro and web clients:

- Encrypt the connection between the [Database Server](#) and FileMaker Pro [clients](#) and between the Database Server and the [Web Publishing Engine](#). Both use [account](#) information and the data are secured using Secure Sockets Layer ([SSL](#)) encryption. Click **Database Server > Security** tab and enable **Secure connections to FileMaker Server**. See [Database Server security settings](#) (page 70).
- If you're publishing databases to web-based clients, enable SSL encryption on the [web server](#) to encrypt data that is passed from the web server to guest computers on the web.

If you enable SSL on the web server, then you must use the [Deployment assistant](#) to configure FileMaker Server to use the HTTPS protocol to communicate with the web server. The Deployment assistant tries to detect your web server using the HTTP protocol, so if your web server uses HTTPS, the Deployment assistant fails to detect the web server and prompts you for more information. In the Deployment assistant's **Web Server Test Failed** step, select **HTTPS** and continue. See [Changing a FileMaker Server deployment](#) (page 28).

For information on enabling and configuring SSL on your web server, review the web server documentation.

- You can enable and disable specific [extended privileges](#), such as [PHP](#), [XML](#), [XSLT](#), and [Instant Web Publishing](#) for the Web Publishing Engine. For example, if you know that all files on one server will be shared with Custom Web Publishing with PHP, you can disable all other types of web publishing. Even if a file includes extended privileges that allow access to XML data, access to XML data is not available while the file is hosted with that FileMaker Server deployment. To enable or disable any web publishing technology for all files on FileMaker Server, click **Web Publishing**, then click either the **PHP**, **XSLT**, **XML**, or **Instant Web Publishing** tab. On each of these tabs, you can enable or disable web publishing for all hosted databases even if they have the corresponding extended privilege enabled. See [Configuring web publishing settings](#) (page 78).
- You can enable FileMaker Server to authenticate users via an external authentication server such as Apple [Open Directory](#) or Windows [Active Directory](#). For more information, see [External authentication for database access](#) (page 72).
- Enable FileMaker Server log files to monitor accesses to databases. See [Tracking activity in log files](#) (page 110).

**Note** See "Creating accounts that authenticate via an external server" in FileMaker Pro Help and [www.filemaker.com/support/security](http://www.filemaker.com/support/security) for more information.

## Scheduling administrative tasks

The **Schedules** pane lists the [scheduled tasks](#) performed on databases hosted by FileMaker Server. Scheduled tasks run automatically if **Allow Enabled Schedules to Run** is selected and the selected schedule is enabled. See [Enabling and disabling schedules](#) (page 140).

### Viewing scheduled tasks details

The list displays 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 view selected schedule details in **Details for**.

### Managing scheduled tasks

Select a schedule, choose one of the following **Actions**, then click **Perform Action**:

For Actions, choose	To
<b>Create a schedule</b>	Run the Schedule <a href="#">assistant</a> to create one of the following scheduled tasks: <ul style="list-style-type: none"> <li>• <b>Back Up Databases:</b> <a href="#">back up</a> all hosted databases, databases in selected folders, or selected databases. See <a href="#">Scheduling database backups</a> (page 128).</li> <li>• <b>Run Script:</b> Run <a href="#">ScriptMaker</a> scripts (see <a href="#">Running ScriptMaker scripts</a> (page 131)) or system-level script files (see <a href="#">Running system-level script files</a> (page 132)).</li> <li>• <b>Send Message:</b> Send messages to clients of hosted databases. See <a href="#">Sending scheduled messages to clients of hosted databases</a> (page 133).</li> </ul>
<b>Edit a schedule</b>	Run the Schedule assistant to change scheduled tasks. See <a href="#">Editing schedules</a> (page 136).
<b>Duplicate a schedule</b>	Duplicate an existing schedule. See <a href="#">Duplicating a schedule</a> (page 137).
<b>Delete selected schedules</b>	Delete the selected schedules. See <a href="#">Deleting a schedule</a> (page 138).
<b>Run a schedule now</b>	Run the selected schedule immediately. See <a href="#">Running a schedule manually</a> (page 139)
<b>Enable all schedules</b>	Enable all listed schedules. See <a href="#">Enabling and disabling schedules</a> (page 140).
<b>Disable all schedules</b>	Disable all listed schedules. See <a href="#">Enabling and disabling schedules</a> (page 140).
<b>Enable selected schedules</b>	Enable selected schedules. See <a href="#">Enabling and disabling schedules</a> (page 140).
<b>Disable selected schedules</b>	Disable selected schedules. See <a href="#">Enabling and disabling schedules</a> (page 140)

You create or edit schedules with the Schedule assistant. The Schedule assistant guides you through the steps to specify the scheduled task details, set the frequency, and send an email notification when the scheduled task is completed. For information about creating and editing scheduled tasks, click the Help button in the Schedule assistant.

## Notes

- A new scheduled task is enabled by default, which means the task will automatically run at its scheduled time. For more information about enabling and disabling scheduled tasks, see [Enabling and disabling schedules](#) (page 140).
- To sort scheduled tasks in a list in ascending or descending order, click a column heading.
- To resize the width of a column, select the column heading border and drag it horizontally.
- You can define up to 50 schedules in FileMaker Server.
- When a scheduled task completes, FileMaker Server can send an email notification, if you enable this feature for a specific schedule. See [Enabling email notifications in schedules](#) (page 147).
- FileMaker Server adds entries in the Events.log file when a scheduled task runs. See [Tracking activity in log files](#) (page 110).
- FileMaker Server puts tasks and file-related commands from Admin Console and the command line interface into the following separate queues:
  - Back up Database tasks and file-related commands (for example, Open, Close, Pause, and Resume). Only one task or command runs at one time from this queue. The remaining tasks or commands are delayed until the current one is complete.
  - Send Message and Run Script tasks (ScriptMaker scripts and system-level script files). Multiple tasks can run at the same time from this queue.

FileMaker Server runs tasks from both queues at the same time. For example, the first queue has a Back Up Database task and a Pause command. The second queue has a Run Script task and a Send Message task. FileMaker Server runs the Back Up Database, Run Script, and Send Message tasks at the same time. The Pause command is not executed until the Back Up Database task completes.

## Related topics

[Email notification settings](#) (page 57)

[Default folder settings](#) (page 73)

## Scheduling database backups

You can back up all hosted databases, databases in selected folders, or a selected database.

Database [backups](#) are saved in the default backup folder or in a folder that you specify. You can set the path in the Schedule [assistant](#).

During backups, FileMaker Server copies the database while it is active. Users can continue to make modifications. When the copy is complete, the database pauses to synchronize backup files with the current database and then the database resumes. In the Schedule assistant, you can also specify whether to perform a consistency check on the backup file and receive email notifications when backups are complete.

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. Compression may take some time to complete.

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 [Event.log](#). You should check the Schedules list for error conditions, which are reported in the [Last Run Status](#). To avoid running out of disk space when backing up files, choose a different hard disk as your backup destination, or move completed backups to offline storage.

For more information about backups, see [Tips for database backups](#) (page 129).

### Related topics

[Creating schedules](#) (page 134)

[Tracking activity in log files](#) (page 110)

[Default folder settings](#) (page 73)

[Scheduling administrative tasks](#) (page 126)

## Tips for database backups

Develop plans for restoring data, including alternate sites and systems to run business-critical information services. A current [backup](#) can help you recover from a situation where someone loses the administrator [account](#) information for a file, or where user error (and sometimes bad database design) causes data to be deleted or modified inappropriately.

Keep the following in mind:

- Host databases with FileMaker Server and create regularly-scheduled, automated backups.

Don't use third-party backup software on hosted FileMaker Pro databases. First, use FileMaker Server to make a backup copy of your database, then run your third-party backup software on the copy. Backup software can damage open, hosted databases.

For example, make local backups of files at 6:00 AM, 9:00 AM, 12:00 noon, 3:00 PM, 6:00 PM, and 11:30 PM weekdays. At midnight, make an incremental backup of the entire system (excluding active hosted databases) to the enterprise backup system. Finally, Friday night at midnight, perform a full system backup, excluding active hosted databases or stop the [Database Server](#) during the backup.

Copy and store the backup media at a remote location. This way, if the server goes down for some reason other than catastrophic failure of multiple drives, the more recent backup of the data files can be used, meaning a maximum of 3 hours of lost data. If there is a catastrophic drive failure, then you can use the previous evening's backup media, minimizing the loss to one day's data.

- In the [Schedule assistant](#), you can enable **Verify backup integrity**. After a backup is complete, FileMaker Server performs a consistency check, confirming whether the backup file is the same as the hosted file. Enabling this check can detect errors in the backup file and send you email notification when the check is complete. However, backup operations that have this option enabled can take much longer to complete and may slow other activities on the [master](#) machine.
- Make sure backup copies aren't damaged or inaccessible. Verify that they are functioning properly before you need them. Run diagnostic tools on your hard drive and your backup files regularly.
- Ensure that you can restore an entire set of files from backup copies.
- Regularly export the data to protect against file corruption.
- Protect the backup media. Store backups in a separate fire-proof location.
- Assign backup administrators who can retrieve files, in case the network administrator is unavailable.

---

**Important** In the event of a server failure, such as an unexpected loss of power, hard drive failure, or software failure, use the backup files. Any system failure causing FileMaker Server to shut down inappropriately can result in corrupted files if [cached](#) data was not written to disk and the files were not closed properly. Even if the files re-open and go through a consistency check or recovery, corruption might be buried in the file. File recovery cannot guarantee that problems have been fixed. For information on recovering damaged files, see FileMaker Pro Help.

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### Related topics

[Examples of repeating schedules](#) (page 135)

[Scheduling database backups](#) (page 128)

## Running server-side scripts

FileMaker Server can run two types of scripts to automate [administrative tasks](#):

- [ScriptMaker](#) scripts defined in hosted databases. See [Running ScriptMaker scripts](#) (page 131).
- System-level script files. See [Running system-level script files](#) (page 132).

Both types of scripts execute on the [master](#) machine in your FileMaker Server [deployment](#).

To run a script, create a scheduled task on FileMaker Server. Specify the script, and when and how often to run the script. As with any schedule, you can run the scheduled task manually at any time.

### Related topic

[Scheduling administrative tasks](#) (page 126)

## Running ScriptMaker scripts

FileMaker Server can run ScriptMaker scripts that are defined in hosted databases. You create a Run Script [scheduled task](#), specify the database and the FileMaker [account](#) to use to run the script, choose a script defined in the database, and when to run the script. ScriptMaker scripts that run on FileMaker Server can do simple or complex tasks, for example:

- perform a field recalculation across all records
- process and archive new transactions nightly
- remove duplicate records before a scheduled [backup](#)

You use the ScriptMaker feature in FileMaker Pro to build scripts by selecting from a list of web-compatible FileMaker Pro commands, called script steps, and specifying options. To run a ScriptMaker script on FileMaker Server:

- The script should include web-compatible script steps.
- The script must be defined in a database file that is hosted on FileMaker Server. See [Hosting databases](#) (page 31).

For information about creating ScriptMaker scripts with web-compatible script steps, see FileMaker Pro Help.

### Notes

- If scripts contain steps that are unsupported, for example, steps that are not web-compatible, use the Allow User Abort script step to determine how subsequent steps are handled.
  - If the Allow User Abort script step option is enabled (On), unsupported script steps will stop the script from continuing.
  - If the Allow User Abort script step is disabled (default), unsupported script steps are skipped over and the script continues to execute.
  - If this script step is not included, scripts are executed as if the feature is enabled, so unsupported script steps will stop scripts.

Some script steps have options that are skipped, such as an option to show a dialog box. The [Event.log](#) file contains detailed information about errors or script steps that are skipped when FileMaker Server runs ScriptMaker scripts. See [Tracking activity in log files](#) (page 110).

- Server-side ScriptMaker scripts run in separate sessions on the [Database Server](#), behaving like they do for [Custom Web Publishing](#). Each session has a its own copy of global fields and variables. Calculation functions return the same values as when scripts run under Custom Web Publishing, with the following exceptions:
  - Get(AccountName) initially returns the account name that the script was run under (specified in the Schedule [assistant](#) when the [schedule](#) is created).
  - Get(UserName) returns the schedule name.
  - Get(ApplicationVersion) returns the Database Server version string.
  - Functions related to hardware, such as Get(SystemIPAddress), return information from the Database Server.

### Related topics

[Creating schedules](#) (page 134)

[Running server-side scripts](#) (page 130)

[Scheduling administrative tasks](#) (page 126)

## Running system-level script files

FileMaker Server can run system-level script files, such as Windows batch, Mac OS shell scripts, Perl, or VBScript files. You create a Run Script [scheduled task](#), specify the script file, and when to run the script. Use system-level scripts to perform tasks outside of FileMaker Server.

To run a script as a scheduled task, you must place the system-level script file in the FileMaker Server Scripts folder:

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Data\Scripts\
- Mac OS: /Library/FileMaker Server/Data/Scripts/

For information about creating system-level scripts, see the documentation for the scripting language you want to use.

### Notes

- In Mac OS, you may need to modify file permissions for shell scripts. Your shell script is executed with the `fmserver` user ID and `fmsadmin` group ID, so your script file must have read and execute permissions for the `fmsadmin` group. Therefore, you cannot call some privileged commands from your scripts. For example, your script does not have access to the `/etc` folder.
- Enable some form of logging in your script so that you can troubleshoot possible permissions issues. Refer to the Apple website for information on creating log files in Mac OS.

### Related topics

[Users, groups, and permissions \(Mac OS\)](#) (page 36)

[Creating schedules](#) (page 134)

[Running server-side scripts](#) (page 130)

[Scheduling administrative tasks](#) (page 126)

## Sending scheduled messages to clients of hosted databases

You can create a message and set up a [schedule](#) to deliver the message to FileMaker users. Messages can notify users about important events such as server shutdowns, database upgrades, or deadline reminders.

You can send messages to:

- All FileMaker Pro users currently connected to hosted databases
- FileMaker Pro users connected to databases in a selected folder
- FileMaker Pro users connected to a selected database

### Related topics

[Creating schedules](#) (page 134)

[Scheduling administrative tasks](#) (page 126)

[Sending messages to FileMaker Pro clients of selected databases](#) (page 95)

## Creating schedules

The following are general steps for creating a [scheduled task](#). For detailed instructions and procedures, click the Schedule [assistant](#) help button.

### To create a scheduled task:

1. Choose **Schedules**.
2. For **Actions**, select **Create a schedule**.
3. Click **Perform Action** to open the Schedule assistant.
4. Specify schedule details. Click **Finish** in the Schedule assistant to save changes to the schedule.

For more information, click the Help button in the Schedule assistant.

5. Select **Enabled** next to the schedule to enable it to run.

### Related topics

[Examples of repeating schedules](#) (page 135)

[Running a schedule manually](#) (page 139)

[Scheduling administrative tasks](#) (page 126)

## Examples of repeating schedules

The following examples show how [schedules](#) work when they run more than once. For a schedule created and enabled at 4:30 PM today, assuming today is Friday:

A schedule defined this way	Runs at these times
A <b>Daily</b> schedule that runs <b>once per day</b> at 5:00 PM, with an end date of 12/31/2008	The first time is at 5:00 PM today, Friday. The next time is at 5:00 PM tomorrow, Saturday. The schedule continues to run once daily at 5:00 PM, with its final run at 5:00 PM on 12/31/2008.
A <b>Daily</b> schedule that runs <b>every hour</b> with a start time of 9:00 AM and end time of 5:00 PM, with no end date specified	The first time is today, Friday, at 5:00 PM. The next times are at 9 AM, 10 AM, 11 AM, 12 PM, 1 PM, 2 PM, 3 PM, 4 PM and 5 PM tomorrow, Saturday. The schedule continues to run daily, every hour starting at 9 AM and ending at 5 PM, inclusive.
A <b>Weekly</b> schedule that runs <b>once per day</b> at 5:00 PM, every Friday, with an end date of 12/31/2008	The first time is today, Friday, at 5:00 PM. The next time is next Friday at 5:00 PM. The schedule continues to run once every Friday at 5:00 PM, with its final time at 5:00 PM on 12/26/2008 (the last Friday before the end date).
An <b>Every n days</b> schedule that runs <b>every three days, every hour</b> , with a start time of 9:00 AM and end time of 5:00 PM, with no end date specified	The first time is today, Friday, at 5:00 PM. The next time is next Monday at 9:00 AM, and every hour that day until 5:00 PM, inclusive. The schedule continues to run every three days every hour starting at 9 AM and ending at 5 PM, inclusive.

### Notes

- Start/end dates and start/end times are inclusive. The last time a schedule can run is at the scheduled end time on the scheduled end date.
- The start time and end time of a schedule must fall within the same day. If you want a schedule to run repeatedly overnight, create two schedules. For example, to [back up](#) databases hourly between 9:00 PM and 5:00 AM starting every Friday night and running overnight, create one schedule that backs up every Friday, every hour, starting at 9:00 PM and ending at 11:00 PM, and another schedule that backs up every Saturday, starting at 12:00 AM and ending at 5:00 AM.

### Related topics

[Selecting the schedule frequency](#) (page 145)

[Creating schedules](#) (page 134)

[Editing schedules](#) (page 136)

[Scheduling administrative tasks](#) (page 126)

## Editing schedules

The following are general steps for editing a [scheduled task](#). For detailed instructions and procedures, click the Schedule [assistant](#) help button.

### To edit a schedule:

1. Choose **Schedules**, then select a schedule from the list.
2. For **Actions**, select **Edit a schedule**.
3. Click **Perform Action** to open the Schedule assistant.
4. Make changes to the schedule. Click **Finish** in the Schedule assistant to save changes to the schedule.

For more information, click the Help button in the Schedule assistant.

5. Select **Enabled** next to the schedule to enable it to run.

### Related topics

[Enabling and disabling schedules](#) (page 140)

[Examples of repeating schedules](#) (page 135)

[Running a schedule manually](#) (page 139)

[Scheduling administrative tasks](#) (page 126)

## Duplicating a schedule

Sometimes it is easier to duplicate and edit an existing [schedule](#) rather than define a new schedule.

### To duplicate an existing schedule:

1. Choose **Schedules**, then select a schedule from the list.
2. For **Actions**, select **Duplicate a schedule**.
3. Click **Perform Action**.

The selected schedule is copied with the name **<schedule name> Copy**.

**Tip** You can rename the schedule in the Schedule [assistant](#). For **Actions**, select **Edit a schedule** to open the Schedule assistant and change the schedule name.

### Related topics

[Editing schedules](#) (page 136)

[Deleting a schedule](#) (page 138)

[Scheduling administrative tasks](#) (page 126)

## Deleting a schedule

### To delete a schedule:

1. Choose **Schedules**.
2. Select one or more [schedules](#) from the list.
3. For **Actions**, select **Delete selected schedules**.
4. Click **Perform Action**.

Click **Yes** to confirm that you want to delete the selected schedules.

### Related topics

[Editing schedules](#) (page 136)

[Duplicating a schedule](#) (page 137)

[Scheduling administrative tasks](#) (page 126)

## Running a schedule manually

You can run a [schedule](#) manually even in cases where it will not run automatically or it is disabled. For example, you can run a schedule manually when:

- You have disabled a given schedule by clearing **Enabled**
- You have disabled all schedules by clearing **Allow enabled schedules to run**
- A schedule is disabled because its final scheduled run has already occurred. The **Last Run** column is updated with the time at which you manually ran the schedule. The **Next Run** column will remain **Disabled**.

### To run a schedule manually:

1. Select **Schedules**, then select a schedule from the list.
2. For **Actions**, select **Run a schedule now**.
3. Click **Perform Action**.

The **Last Run** column displays the current date and time of the computer FileMaker Server is running on.

### Related topics

[Enabling and disabling schedules](#) (page 140)

[Scheduling administrative tasks](#) (page 126)

## Enabling and disabling schedules

You can enable or disable specific [schedules](#) or you can disable all schedules at once.

To	Do this
Enable a schedule when creating or editing it	If you use the Schedule <a href="#">assistant</a> to create a schedule, the scheduled task is enabled by default.
Enable a schedule that was disabled	In the Schedules pane, select the empty checkbox to the left of the schedule name.  <b>Note</b> If the schedule's final run time has already occurred, you must edit the run time before it can be enabled again.
Disable a selected schedule	In the Schedules pane, clear the checkbox to the left of the schedule name.
Prevent all schedules from running	In the Schedules pane, clear <b>Allow enabled schedules to run</b> . This option is convenient for performing <a href="#">administrative tasks</a> on the server computer.  This setting overrides any individual schedule settings you have enabled.
Allow enabled schedules to run	In the Schedules pane, select <b>Allow enabled schedules to run</b> . A checkmark indicates that all scheduled tasks that are individually checked in the scheduled task list are enabled.  Scheduled tasks that were individually disabled are not re-enabled until you enable them individually.

### Related topics

[Running a schedule manually](#) (page 139)

[Scheduling administrative tasks](#) (page 126)

## Selecting a task

In this Schedule assistant step, select a task to perform.

### To select a task:

1. Select one of the task options:

Choose	To
<b>Back Up Databases</b>	Back up one or more hosted databases.
<b>Run Script</b>	Run a <a href="#">ScriptMaker</a> or system-level script on FileMaker Server.
<b>Send Message</b>	Send a message to one or more FileMaker Pro users connected to a hosted database. The message appears in a dialog box within FileMaker Pro.

2. Click **Next**.  
Click **Cancel** to exit the Schedule assistant.

### Related topics

[Scheduling database backups](#) (page 128)

[Running server-side scripts](#) (page 130)

[Sending scheduled messages to clients of hosted databases](#) (page 133)

[Scheduling administrative tasks](#) (page 126)

## Database backup schedule

In this Schedule assistant step, choose a preset [backup](#) schedule or a custom schedule. You can choose a preset schedule as a starting point and change the details later in the Schedule assistant.

### To select a backup schedule:

1. Select a preset or a custom backup schedule:

Choose	To
<b>Hourly</b>	Back up all databases to the default backup folder daily, every hour from 8 am to 5 pm.
<b>Daily</b>	Back up all databases to the default backup folder once daily, starting at 11 pm.
<b>Weekly</b>	Back up all databases to the default backup folder once weekly, starting at 11 pm.
<b>Custom</b>	Create a custom backup schedule.

2. Click **Next**.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topics

[Scheduling database backups](#) (page 128)

[Default folder settings](#) (page 73)

[Scheduling administrative tasks](#) (page 126)

## Selecting databases

In this Schedule assistant step, choose which databases to back up in this schedule.

### To choose databases to back up:

1. Choose the databases to back up:

Choose	To
<b>All Databases</b>	Back up all databases in the default database folder and the additional database folder, including databases in subfolders. For information about the additional database folder, see <a href="#">Default folder settings</a> (page 73).
<b>Databases in Folder</b>	Back up all databases in the selected folder.
<b>Select a Database</b>	Back up the selected database. Select only one database file.

2. Click **Next**.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topics

[Scheduling database backups](#) (page 128)

[Scheduling administrative tasks](#) (page 126)

## Selecting the backup folder

In this Schedule assistant step, be sure to specify a [backup](#) folder that is not the same as the default database folder or the optional additional database folder. Otherwise, your backed up files could accidentally be hosted when FileMaker Server starts up.

### To select the backup folder:

1. For **Backup Folder**, enter the path to the backup folder.

You can specify the path to your own backup folder or use the default backup folder. To specify the path, enter:

Windows: filewin:/pathname-to-backup-folder/

Mac OS: filemac:/pathname-to-backup-folder/

**Note** Click **Restore** to undo changes made to the path.

2. Click **Validate** to verify that the path of the backup folder exists and is accessible. If the path is not valid, see [Tips for valid folders](#) (page 75).

3. For **Verify Backup**, select **Verify backup integrity** to check whether the backup file is the same as the hosted file.

If you choose to send email notification later in the Schedule assistant, the status of this check is included in the email message.

For more information, see [Tips for database backups](#) (page 129).

4. Click **Next**.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

**Note** You can configure the default backup folder that appears in this step of the Schedule assistant. See [Default folder settings](#) (page 73).

### Related topics

[Scheduling database backups](#) (page 128)

[Scheduling administrative tasks](#) (page 126)

## Selecting the schedule frequency

In this Schedule assistant step, specify when and how often to run the scheduled task.

### To specify the schedule frequency:

1. For **Frequency**, choose **Daily**, **Every n days**, **Once Only**, or **Weekly**.
2. Specify the **Schedule Details**, which depend on the frequency selected:

Choose	To
<b>Start date</b>	Select the start date for this schedule. Click the calendar to select a date.
<b>End date</b>	Select <b>End Date</b> and enter an optional ending date for this schedule. Click the calendar to select a date.
<b>Once per day</b>	Run the schedule at the selected <b>Start Time</b> . Enter the time of day to start.
<b>Run every</b>	Run the schedule at the interval specified in <b>Hours</b> or <b>Minutes</b> . You can also specify when to start and end running the schedule by selecting the <b>Start Time</b> and <b>End Time</b> .
<b>Days</b>	Select the days of the week to run the schedule.
<b>Start time</b>	Select the start time to run the schedule.

For more information, see [Examples of repeating schedules](#) (page 135).

3. Click **Next**.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topic

[Scheduling administrative tasks](#) (page 126)

## Naming the schedule

In this Schedule assistant step, specify a unique name for this schedule. This is the name that appears in the Schedules pane.

### To name the schedule:

1. Enter a **Schedule Name**.

**Note** The schedule name can contain up to 31 characters.

2. Click **Next**.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topic

[Scheduling administrative tasks](#) (page 126)

## Enabling email notifications in schedules

In this Schedule assistant step, you can enable a schedule to send an email notification when a task is completed.

### To enable email notification:

1. Select **Send email notification**.
2. Enter the email addresses that you want to notify.  
You can enter multiple addresses separated by a comma.  
Example: `user1@email.com,user2@email.com,...`
3. Click **Next**.  
Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Notes

- Email notifications are sent whether the schedule completes successfully or not. If email notification for errors or warnings is enabled on the **General Settings > Email Notification** tab, a second email message is sent to the email addresses specified on the tab. If an email address appears on both lists, the addressee receives two email messages about the same event. See [Receiving email notifications only when a schedule fails](#) (page 148).
- Email notification requires the **SMTP** server configuration settings specified on the **General Settings > Email Notification** tab. The SMTP server settings are checked when this Schedule assistant pane is displayed. If the SMTP server has not been configured, the Schedule assistant opens a dialog box prompting you to configure the SMTP server after this schedule is created.

### Related topic

[Scheduling administrative tasks](#) (page 126)

## Receiving email notifications only when a schedule fails

Administrators may want to receive email notifications only when a [scheduled task](#) fails. If you enable email notifications for a scheduled task, all addressees receive emails every time the task completes, whether the task fails or succeeds. To stop receiving these email messages, you can disable email notifications (or remove your email address from the list) for a specific schedule using the Schedule [assistant](#).

Because FileMaker Server adds an entry in the Events.log file whenever a schedule fails, you can enable notifications for warnings and errors and receive an email only when a schedule fails.

### To receive email notification only when a schedule fails to complete:

1. Create a new schedule or edit an existing schedule.  
For instructions on creating or editing a scheduled task, see [Creating schedules](#) (page 134) or [Editing schedules](#) (page 136).
2. Confirm the schedule settings in each step and click **Next** in the Schedule assistant until you reach the Enable Email Notifications step.
3. To disable all email notifications for this schedule, clear **Enable email notification**.  
To continue sending email notifications to other addressees, leave email notifications enabled but remove the email addresses that you don't want to receive email notifications.
4. Click **Next**, then **Finish**.
5. Choose the **General Settings > Email Notifications** tab.
6. Select **Enable email notifications**.
7. Choose **Warnings or errors** to send email notifications.
8. For **Send Email Notifications to**, enter the email address that you want to receive email notifications of errors and warnings.

### Related topics

[Enabling email notifications in schedules](#) (page 147)

[Tracking activity in log files](#) (page 110)

## Reviewing schedule details

In this Schedule assistant step, review the details of this schedule, then optionally enable this schedule to run at the times specified.

### To review and enable the schedule:

1. Review the details. Select **Back** to return to the previous steps to change the schedule settings.
2. Select **Enable this schedule**.
3. Click **Finish** to save the schedule.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topic

[Scheduling administrative tasks](#) (page 126)

## Selecting the script type

In this Schedule assistant step, you can choose to run a [ScriptMaker](#) script or a system-level script on FileMaker Server. For more information, see [Running server-side scripts](#) (page 130).

Place system-level script files in the Script folders before starting the Schedule assistant:

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Data\Scripts\
- Mac OS: /Library/FileMaker Server/Data/Scripts/

### To select the script type:

1. Select the **Script Type**:

Choose	To
<b>ScriptMaker Script</b>	Run a ScriptMaker script defined in a hosted database.
<b>System-Level Script</b>	Run a system-level script file — such as Windows batch, Mac OS shell scripts, Perl, or VBScript file — that is in the Scripts folder.

2. Click **Next**.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topic

[Scheduling administrative tasks](#) (page 126)

## Selecting a database to run the ScriptMaker script

In this Schedule assistant step, select the database containing the [ScriptMaker](#) script that you want to run. For more information, see [Running ScriptMaker scripts](#) (page 131).

### To select a database with the ScriptMaker script to run:

1. Select the **Database** from the list.
2. Choose the type of [account](#) that you want FileMaker Server to use when it runs the script.

To	Choose
Use the built-in Guest account	<p><b>Guest Account</b></p> <p>No account name or password is necessary.</p>
Use any other account	<p><b>Account Name and Password</b></p> <p>Choose the account that FileMaker Server uses to access the database every time the script runs. The account must have sufficient privileges to perform the script. For more information about accounts and <a href="#">privilege sets</a>, see FileMaker Pro Help.</p> <p>Enter the <b>Account Name</b> and <b>Password</b>.</p>

3. Click **Next**.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topic

[Scheduling administrative tasks](#) (page 126)

## Selecting a ScriptMaker script to run

In this Schedule assistant step, select the [ScriptMaker](#) script that you want to run.

### To select a ScriptMaker script to run:

1. Select the script from the **Script Name** list.  
**Tip** If a script group in the list is closed, click the icon beside the group name to open the group and view the scripts.
2. Enter an optional **Script parameter**.  
**Note** For more information on script parameters, see FileMaker Pro Help.
3. Click **Next**.  
Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topics

[Running ScriptMaker scripts](#) (page 131)

[Scheduling administrative tasks](#) (page 126)

## Selecting a system-level script to run

In this Schedule assistant step, select the system-level script to run. For more information, see [Running system-level script files](#) (page 132).

Put system-level script files in the Scripts folder before starting the Schedule assistant:

- Windows: [drive]:\Program Files\FileMaker\FileMaker Server\Data\Scripts\
- Mac OS: /Library/FileMaker Server/Data/Scripts/

If you do not see the script you want, click **Cancel** to exit the Schedule assistant, copy the script to the Scripts folder on the FileMaker Server computer, and run the Schedule assistant again.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topic

[Scheduling administrative tasks](#) (page 126)

## Selecting users to send a message to

In this Schedule assistant step, select the users that you want to receive a message. You select users by choosing one or more databases. Any FileMaker Pro user who is connected to one of these databases will receive the message.

### To select users to send a message to:

1. Select one of the following options for sending a scheduled message:

Choose	To
<b>All FileMaker Pro users (all databases)</b>	Send a scheduled message to all FileMaker Pro users connected to hosted databases.
<b>FileMaker Pro users of databases in folder</b>	Send a scheduled message to FileMaker Pro users connected to hosted databases in a specified folder.
<b>FileMaker Pro users of a selected database</b>	Send a scheduled message to FileMaker Pro users connected to a selected hosted database.

2. Click **Next**.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topics

[Sending scheduled messages to clients of hosted databases](#) (page 133)

[Scheduling administrative tasks](#) (page 126)

## Creating a message

In this Schedule assistant step, create a message for FileMaker Pro users.

### To create the message:

1. Type the message that you want to send.
2. Click **Next**.

Click **Back** to return to the previous step or **Cancel** to exit the Schedule assistant.

### Related topics

[Sending scheduled messages to clients of hosted databases](#) (page 133)

[Scheduling administrative tasks](#) (page 126)

# Troubleshooting

Problems with FileMaker Server typically occur in the following areas:

- [Deployment problems](#) (page 157)
- [Admin Console problems](#) (page 158)
- [General problems](#) (page 159)
- [Network problems](#) (page 160)
- [Problems on client computers](#) (page 162)
- [FileMaker Server event log messages](#) (page 164)
- [Command line error messages](#) (page 167)
- [Improving performance](#) (page 168)

**Note** If [FileMaker Pro](#) is already running while the [Database Server](#) is starting up on the same machine, the Database Server will start up but then abruptly stop. Stop FileMaker Pro, then start the Database Server. If this problem persists, restart your computer, then start the Database Server before starting FileMaker Pro.

## Deployment problems

### The Deployment assistant reports that the web server test failed

If the [Deployment assistant](#) cannot communicate with the [web server](#) that you specified, you can provide more information and try again.

To detect the web server:

1. Click **Edit Server Deployment**.
2. In the Deployment assistant, click **Next** until you reach the Web Server Test Failed step.
3. Follow the instructions in [Web Server Test Failed](#) (page 21).

### The Mac OS web server fails during startup

When you install the FileMaker Server supported version of [PHP](#), it does not appear in the Mac OS X Server Admin tool; it is not supposed to be listed. If you use the Mac OS X Server Admin tool to turn on PHP, the Server Admin tool adds a second PHP engine to the web server's configuration files. As a result, the web server may fail during startup when it attempts to load the second PHP engine.

Refer to the FileMaker Knowledge Base for more information. See [Customer support and Knowledge Base](#) (page 198).

### Related topic

[Troubleshooting](#) (page 156)

# Admin Console problems

## Admin Console Start Page says to install Java when it's already installed

Internet Explorer may be configured to prevent add-ons from running. Click the Information Bar at the top of the browser window and allow Internet Explorer to run the [Java Web Start](#) ActiveX Control add-on. Java Web Start technology uses this add-on to determine whether the required version of Java is installed. After you allow this add-on to run, click **Start Admin Console**.

## Cannot start Admin Console from a remote machine

- If the [master](#) machine has a firewall enabled, then you must open the ports required by FileMaker Server to communicate with users and administrators. See [Ports used by FileMaker Server](#) (page 161).
- If you double-click an Admin Console shortcut and Admin Console doesn't open, check whether the [IP address](#) of the master machine has changed. Each shortcut starts Admin Console for a specific FileMaker Server [deployment](#). If the IP address of the master machine changes, you must remove the shortcut and start Admin Console from the FileMaker Server Admin Console Start Page again. See [Starting Admin Console](#) (page 29).

## Related topic

[Troubleshooting](#) (page 156)

## General problems

### FileMaker Server is sending too many email messages

You have many, frequently-run [scheduled tasks](#) with email notifications enabled. Try disabling email notifications or remove email addresses for some scheduled tasks. Also, see [Receiving email notifications only when a schedule fails](#) (page 148).

### None of the scheduled tasks are running

FileMaker Server has been configured not to allow any schedules to run. To allow FileMaker Server to run enabled schedules, click **Schedules** and select **Allow schedules to run**.

### The path for my additional database folder or backup database folder is not valid

Check the ownership and permissions of the folder. When you click **Validate** in the **Database Server > Default Folders** tab or the Schedule [assistant](#), Admin Console may fail to validate a folder path because the folder does not have the correct permissions. Check that the folder is owned by the user `fmserver` (or in the group `fmsadmin`) and has read and write permissions. See [Tips for valid folders](#) (page 75).

### Related topic

[Troubleshooting](#) (page 156)

## Network problems

### A FileMaker Pro client using TCP/IP can't find FileMaker Server databases on the network

Verify that [TCP/IP](#) networking software is properly configured on the host and [client](#) computers. Verify that the simultaneous client limit you specified has not been reached.

On the client computer, in the FileMaker Pro Open Remote File dialog box, type:

```
fmnet:[IP address]
```

If no client computers can see FileMaker Server in the Open Remote File dialog box, check the server network connection, and make sure the FileMaker Server ports are open on any firewall.

### Cannot start Admin Console from a remote machine

If the [master](#) machine has a firewall enabled, then you must open the ports required by FileMaker Server to communicate with users and administrators. See [Ports used by FileMaker Server](#) (page 161).

Each shortcut starts Admin Console for a specific FileMaker Server [deployment](#). If the [IP address](#) of the master machine has changed, you must remove the shortcut and start Admin Console from the FileMaker Server Admin Console page again. See [Starting Admin Console](#) (page 29).

### Clients cannot see databases hosted by FileMaker Server

The firewall settings on the master machine may be blocking the display of databases to clients. See [Ports used by FileMaker Server](#) (page 161) for more information on which ports need to be unblocked in firewalls.

### Related topics

[FileMaker Server event log messages](#) (page 164)

[Troubleshooting](#) (page 156)

## Ports used by FileMaker Server

When running FileMaker Server in an environment that uses a firewall, be sure to configure the firewall on each machine to allow FileMaker Server to communicate. The table below lists all the ports used in a FileMaker Server [deployment](#).

**Note** Not all of the ports listed below need to be open to end users or between all machines in a FileMaker Server deployment. For more information on deploying on multiple machines, see FILEMAKER SERVER GETTING STARTED GUIDE on the Start Page.

End users need only these ports to be open:

- Port 80 for web publishing, or another port if your [web server](#) uses a port other than the default
- Port 5003 for FileMaker Pro clients.

Admin Console users need ports 16000 and 16001 to be open.

Port number	Used by	Purpose
80	Web server machine, end users	HTTP
5003	<a href="#">Master</a> machine, end users	FileMaker Pro and FileMaker Server for hosting files
16000	All machines, Admin Console users	HTTP: Admin Console Start Page, Admin Helpers
16001	Master machine, Admin Console users	HTTPS: Admin Console communications
16004	All machines	Admin Console
16006	<a href="#">Web Publishing Engine</a> machine	FileMaker Internal
16008	Web Publishing Engine machine	FileMaker Internal
16010	Web Publishing Engine machine	Custom Web Publishing Engine
16012	Web Publishing Engine machine	FileMaker Internal
16014	Web Publishing Engine machine	FileMaker Internal
16016	Web Publishing Engine machine	Apache Jakarta Protocol (AJP) 1.3
16018	Web Publishing Engine machine	Apache Jakarta Protocol (AJP) 1.3
50003	Master machine (local only)	FileMaker Server <a href="#">service</a> (Windows) or <a href="#">daemon</a> (Mac OS)
50006	Master machine (local only)	FileMaker Server Helper service (Windows) or daemon (Mac OS)

### Related topic

[Network problems](#) (page 160)

## Problems on client computers

### Admin Console Start Page says to install Java when it's already installed

Internet Explorer may be configured to prevent add-ons from running. Click the Information Bar at the top of the browser window and allow Internet Explorer to run the [Java Web Start](#) ActiveX Control add-on. FileMaker Server uses this add-on to detect whether the required version of Java is installed. After you allow this add-on to run, click **Start Admin Console**.

### The FileMaker Server name does not appear in the FileMaker Pro Open Remote File dialog box

- Windows: Verify that the FileMaker Server [service](#) is started in the Services (Local) node.
- You may need to specify the host [IP address](#) of the computer running FileMaker Server. In the Open Remote File dialog box, type: `fmnet:[IP address]`.

### Clients cannot see databases hosted by FileMaker Server

The firewall settings on the FileMaker Server machine may be blocking the display of databases to [clients](#). See [Ports used by FileMaker Server](#) (page 161) for more information on which ports need to be unblocked in firewalls.

### Clients receive “Communication with the host was interrupted and could not be re-established” message on client computer

FileMaker Server disconnected a client from a database because the client didn't comply with a request from FileMaker Server to close a database. Communication between the host and client may have been disrupted because of a hardware failure (lost network connection) or a software connection time-out (no response from client for a given period of time). The latter could be caused by a screen saver or processor-intensive operation.

### Clients receive “servername is no longer available or the host capacity has been exceeded” message on client computer

FileMaker Server has shut down or you reached the maximum allowable connections or clients on FileMaker Server. Verify that FileMaker Server is running or increase the number of clients allowed in the **Database Server > FileMaker Pro Clients** tab.

### Clients receive “Host capacity exceeded” message on client computer

You reached the maximum allowable connections or clients on FileMaker Server. Increase the number of clients allowed in the **Database Server > FileMaker Pro Clients** tab.

### Clients receive “This action cannot be performed because the file is not modifiable” message on client computer (FileMaker Pro databases hosted by FileMaker Server on Mac OS)

Clients can't modify the database file because the database file permissions are incorrectly set. The operating-system-level group `fmsadmin` must own the database file and have read and write access permissions. The [Event.log](#) will report “Opened database [filename] read only”. (If the database file is not owned by the group `fmsadmin`, FileMaker Server will not recognize the database file and there will be no entry in the Event.log.)

### **Related topics**

[FileMaker Server event log messages](#) (page 164)

[Configuring Database Server settings](#) (page 62)

[Improving performance](#) (page 168)

[Users, groups, and permissions \(Mac OS\)](#) (page 36)

[Troubleshooting](#) (page 156)

## FileMaker Server event log messages

The following is an alphabetical list and explanation of some of the log file messages you might see in the [Event.log](#) or in the Windows [Event Viewer](#). Variables returned by FileMaker Server or the operating system, such as the name of the destination or file, are in [brackets].

### **Client [client name] no longer responding; connection closed. ([error number])**

A connected client's computer has stopped communicating with FileMaker Server due to a network disruption or a software error.

### **Closing database [filename] due to serious error. ([error number])**

The specified file is being closed by FileMaker Server due to an error condition. The file may need to be recovered in an earlier version of FileMaker Pro. See FileMaker Pro Help for information about recovering damaged files.

### **Database cache size: [x] MB.**

The specified amount (x) of memory is usable for the database [cache](#). This message is logged when FileMaker Server starts. You can adjust application memory by changing the **RAM reserved for database cache** in the **Database Server > Databases** tab. The new cache size takes effect immediately.

### **Database [filename] consistency check skipped by administrator, database opened. Use of this database could result in data corruption.**

Administrator omitted the file consistency check via the **Open a database** action in the Databases pane. See [Opening hosted files](#) (page 96).

### **Database [filename] could not be opened. Database may be damaged; use the Recover command in FileMaker Pro 9.**

The specified file failed the consistency check. Try opening the file in FileMaker Pro: start the FileMaker Pro application, open the file, and follow any instructions on your screen. (See FileMaker Pro Help for more information about recovering files.) Then try opening the file with FileMaker Server.

### **Database [filename] could not be opened in its current state: open it in FileMaker Pro first.**

The database might be in an older format (databases need to be in FileMaker Pro 7 (.fp7) format before you can host them using FileMaker Server 9). For information about converting files, see FileMaker Pro Help.

### **Database [filename] is being opened for the first time in FileMaker 9, performing consistency check.**

Since the specified file was created in FileMaker Pro 7 and has not been previously opened in a FileMaker 8 or later product, FileMaker Server performs a file consistency check.

**Database [filename] is damaged and has been closed.**

Try opening the file in FileMaker Pro: start the FileMaker Pro application, open the file, and follow any instructions on your screen. (See FileMaker Pro Help for more information about recovering files.) Then try opening the file with FileMaker Server.

**Database [filename] was not closed properly, performing consistency check.**

The specified file was in use when FileMaker Pro or FileMaker Server shut down abnormally; therefore, FileMaker Server performs a file consistency check to examine the file's blocks.

**FileMaker Server is going to sleep. The entire cache will be flushed. All schedules will be suspended.**

If the server computer is configured to [sleep](#) during periods of inactivity, before doing so the operating system prompts each open [service](#) or application to find out if the service or application can accommodate energy-saving mode. If any clients are currently connected to a hosted database, FileMaker Server denies the sleep request and the server computer does not sleep. If no clients are connected, FileMaker Server writes any unsaved changes to disk (flushes the cache) and allows the server computer to sleep. During sleep, all [scheduled tasks](#) are suspended and do not run again until the next scheduled time when the server computer is awake.

**FileMaker Server is now awake. All schedules will now be resumed.**

This message is sent to the log by FileMaker Server when the server computer wakes up from sleep mode. During sleep, all scheduled tasks are suspended and do not run until the next scheduled time when the server computer is awake.

**FileMaker Server quitting! An unrecoverable error occurred. ([error number])**

FileMaker Server detects a severe error during network use, due to a network failure or other causes. Check network installation, settings, and the system error log.

**Registration with directory service failed. ([error number])**

Registration with the directory service failed because the error number reported is an [LDAP](#) error from the LDAP server.

**Schedule [schedule name] aborted; [destination] could not be found.**

The specified destination could not be found. If the destination is a removable medium, make sure it is inserted in its drive. If the destination is an external or network drive, connect the drive or network. Try again after the destination volume drive is correctly set up.

**Schedule [schedule name] aborted; no open databases to operate on.**

The schedule specifies a folder in which FileMaker Server currently has no databases open. Therefore, the scheduled task can't proceed. Make sure that the schedule specifies the correct folder to operate on and that all databases have been opened correctly.

**Schedule [schedule name] aborted; the destination [destination] is not writable.**

The specified destination is not accessible, and the schedule is now disabled. If the destination is a removable medium, you might need to remove it from the drive, make it writable, and reinsert it. Try again after the destination is correctly set up.

**Related topics**

[Network problems](#) (page 160)

[Problems on client computers](#) (page 162)

[Viewing activities in the Event Viewer \(Windows\)](#) (page 112)

[Troubleshooting](#) (page 156)

## Command line error messages

The following is a list of the error codes you might see when working with the [command line interface](#), and a brief description of each code. For additional information, consult the [Event.log](#) or see [Troubleshooting](#) (page 156).

10001 Invalid parameter

10502 Host was unreachable

Make sure the server is available.

10504 Cannot disconnect administrator

The client you're trying to disconnect is an administrator, which must always remain connected.

10600 Schedule is missing

10604 Cannot enable schedule

10606 Invalid backup destination for schedule

10801 Locale was not found

10900 Engine is offline

10901 Too many files are open

10902 File is not open

10903 File by the same name is already open

10904 File for this operation was not found

11000 User specified an invalid command

11001 User specified invalid options

11002 Command is invalid as formatted

11005 Client does not exist

20302 Unknown Universal Path Type

20400 File operation canceled

20401 End of file

20402 No permission

20404 File is not open

20405 File not found

20406 File exists

20407 File already open

20500 Directory not found

20600 Network initialization error

For other error codes, see [Customer support and Knowledge Base](#) (page 198).

### Related topic

[Command line reference](#) (page 171)

## Improving performance

For best performance, FileMaker Server should be run on a dedicated machine 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 software or heavy network traffic on the same machine will cause FileMaker Server to run more slowly and degrade the performance of FileMaker Pro on client machines.

- Avoid installing FileMaker Server on a machine that is a user's primary workstation or network file server.
- You cannot run two different versions of FileMaker Server on the same machine at the same time.
- Avoid using the machine running FileMaker Server as an email, print, or file server.
- Do not use system [backup](#) software to back up databases hosted by FileMaker Server. Instead use the FileMaker Server Admin Console to [schedule](#) backups of databases.
- Do not use anti-virus software to scan the folders that contain hosted database files.
- Disable screen savers and [sleep](#) (or [hibernate](#) and [standby](#)) mode on the server. These OS features reduce performance or suspend access to hosted databases.
- Use a fast hard disk.
- Turn off file indexing (on Windows, Indexing Service; on Mac OS, Spotlight; or on any other third party file indexing software). This feature reduces performance.
- If you have a large number of FileMaker Pro and Web Publishing clients, consider switching to a multiple-machine [deployment](#).

**Note** Because some DHCP servers cycle [IP addresses](#), FileMaker recommends using a static IP address.

### Related topic

[Troubleshooting](#) (page 156)

## Checking for updates

From the Start Page, you can check for updates to FileMaker Server software. In the Software Update section, click **Check Now**. If an update is available, you can click a link to download the update.

For information on enabling or disabling this feature, see [Admin Console settings](#) (page 59).

## About the license key

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

You can find your license key(s) on the back of the CD sleeve. If you paid for your software electronically, you received an email with a link to a PDF file with your license key.

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 machine or a single multi-machine [deployment](#) at a time (refer to your Software License). If the license key is invalid or if another copy of the software installed with that same license key is running on the network, the FileMaker Server software displays an error message and does not start.

You can choose to deploy FileMaker Server components across multiple machines that work together to form a single FileMaker Server deployment. You must have a unique license key for each multiple-machine deployment, or obtain a volume license for more than one deployment. You must license one copy of FileMaker Server for each deployment.

### Updating the FileMaker Server license

If you want to update your license from a trial version of FileMaker Server 9 or from FileMaker Server 9 to FileMaker Server 9 Advanced on the same machine, you must update your FileMaker Server license key.

To update the FileMaker Server license of an existing deployment, see [Server information settings](#) (page 55).

To move your FileMaker Server 9 deployment to a new machine or to upgrade from an earlier version of FileMaker Server, see FILEMAKER SERVER GETTING STARTED GUIDE on the Start Page.

# Command line reference

FileMaker provides the tool `fmsadmin` for administering FileMaker Server via the command line interface (CLI). You must be logged on to the computer running FileMaker Server to use the CLI.

**Note** The CLI is available via the command prompt (Windows) and the Terminal application (Mac OS).

## Command Line Interface files

The CLI executable `fmsadmin` is located in the folder:

- Windows: [drive]:\Program Files\Filemaker\FileMaker Server\Database Server\fmsadmin.exe
- Mac OS: /usr/bin/fmsadmin

## Commands

The general format for `fmsadmin` commands is:

```
fmsadmin command [options]
```

The following example authenticates with [Admin Console](#) user name `admin` and the password `pwd` and closes all open databases without prompting you to confirm:

```
fmsadmin close -y -u admin -p pwd
```

---

**Important** CLI commands can include the Admin Console name and password. If a command is used interactively, the user name is visible but the password is not. If a command in a script or batch file must include a name and password, be sure that only the password owner can view the script or batch file.

---

In the CLI, use the `fmsadmin help` command to see Help pages on other commands. For FileMaker Server online Help on specific commands, see [fmsadmin commands](#) (page 174).

## Options

Options pass switches and parameters to `fmsadmin`. Type `fmsadmin help options` to see the list. You can specify options in a short or a long format, for example: `-h` or `--help`. You can use the following options with all commands.

Use	To
<code>-h, --help</code>	Print this page.
<code>-p password, --password password</code>	Specify the password to use to <a href="#">authenticate</a> the server.
<code>-u username, --username username</code>	Specify username and/or <a href="#">domain name</a> to use to connect to FileMaker Server.
<code>-v, --version</code>	Print version information.
<code>-w seconds, --wait seconds</code>	Specify time in seconds for command to time out.
<code>-y, --yes</code>	Automatically answer yes to all prompts.

## Options for specific commands

Use	To
<code>-d path, --dest path</code>	Specify a destination path.
<code>-f, --force</code>	Force close a database or shut down the server.
<code>-m message, --message message</code>	Specify a text message to be sent to clients.
<code>-o, --offline</code>	Perform an offline <a href="#">backup</a> .
<code>-s, --stats</code>	Return file or <a href="#">client</a> statistics.
<code>-t seconds, --grace-time seconds</code>	Specify time in seconds before client is forced to quit.

- To specify the short form of options, use a single hyphen (-). You can specify multiple options together. If an option requires a parameter, that option is usually the last option that you specify. For example,

```
fmsadmin close -ym 'Closing for maintenance' Database.fp7
```

- To specify the long form of options, use double hyphens (--). Long options can be used in scripts to increase readability. You must specify each option separately, preceded by two hyphens. A space is required between the option and any parameters, for example,

```
fmsadmin close --yes --message "Closing for maintenance" Database.fp7
```

## Parameters

- Enclose any parameters that contain spaces in single or double quotation marks.
 

**Tip** For computer and filenames, use names consisting of standard ASCII characters without spaces.
- You can specify file IDs instead of filenames. Use `fmsadmin list files [-s]` to return file IDs and other statistics. File IDs are dynamically generated.
- Symbols that may be interpreted by the shell must be escaped, that is, preceded by a backslash character (\). Refer to the documentation for your shell or command interpreter.
- Example: the following command does not prompt for confirmation (-y), allows clients 5 minutes to close the file (-t300), and sends a message (-m). The command operates on file IDs 20 and 22 and the folder "Solution".

```
fmsadmin close -y -t300 -m "Closing for maintenance" 20 22 "filemac:/Library/FileMaker Server/Data/Databases/Solution/"
```

## Scripting language

If you use a scripting language that allows execution of shell or Terminal commands, you can script many tasks with `fmsadmin`. On Mac OS, you can use tools such as `cron` or `launchd` to schedule execution of `fmsadmin` commands like 'run schedule' or 'backup'. On Windows, you can use the Scheduled Task Wizard to schedule scripted tasks.

## Administrator authentication

FileMaker Server always challenges the CLI for authentication. FileMaker Server logs all administrator connections, both successful or failed.

**Related topic**

[Command line error messages](#) (page 167)

## fmsadmin commands

The fmsadmin [command line interface \(CLI\)](#) commands are listed below. Type: `fmsadmin help commands` to see the list. Click a link for more information.

Use	To
<a href="#">BACKUP command</a> (page 175)	<a href="#">Back up</a> databases
<a href="#">CLOSE command</a> (page 176)	Close databases
<a href="#">DISABLE command</a> (page 177)	Disable <a href="#">schedules</a>
<a href="#">DISCONNECT command</a> (page 178)	Disconnect a <a href="#">client</a>
<a href="#">ENABLE command</a> (page 179)	Enable schedules
<a href="#">HELP command</a> (page 180)	Get help pages for fmsadmin commands
<a href="#">LIST command</a> (page 181)	List clients, files, <a href="#">plug-ins</a> , or schedules
<a href="#">OPEN command</a> (page 182)	Open databases
<a href="#">PAUSE command</a> (page 183)	Temporarily stop database access
<a href="#">RESUME command</a> (page 184)	Make databases available
<a href="#">RUN command</a> (page 185)	Run a schedule
<a href="#">SEND command</a> (page 186)	Send a message
<a href="#">START command</a> (page 187)	Start the <a href="#">Database Server</a>
<a href="#">STATUS command</a> (page 188)	Get status of clients or files
<a href="#">STOP command</a> (page 189)	Stop the Database Server

### Related topics

[Command line error messages](#) (page 167)

[Command line reference](#) (page 171)

## BACKUP command

### Format

```
fmsadmin BACKUP [FILE...] [PATH...] [options]
```

### Description

Backs up the specified files (FILE) or all the hosted files in the specified paths (PATH).

By default, the BACKUP command performs a live [backup](#) of a hosted file, without interfering with [client](#) usage. Alternatively, first PAUSE the databases, then issue the BACKUP command, followed by a RESUME command to perform an offline backup. If you don't specify a path, the databases are backed up to the default backup folder. If you don't specify a file, all hosted databases are backed up.

### Option

```
-d path, --dest path
```

Overrides the default backup folder destination by backing up the databases to the specified path. If the path doesn't exist, FileMaker Server attempts to create it.

### Related topics

[RUN command](#) (page 185)

[Default folder settings](#) (page 73)

[Command line reference](#) (page 171)

## CLOSE command

### Format

```
fmsadmin CLOSE [FILE...] [PATH...] [options]
```

### Description

Closes the specified files (FILE) or all the hosted files in the specified paths (PATH). If no FILE or PATH is specified, closes all hosted files.

**Note** If you want to close a specific file, you must type a space between any options and the filename or file ID. For example,

Command	Result
<code>fmsadmin close -y Database</code>	Closes only the specified file.
<code>fmsadmin close -y</code>	Closes all hosted files.

### Options

`-m message`, `--message message`

Specifies a text message to be sent to the [client](#) that is being disconnected.

`-t seconds`, `--grace-time seconds`

Specifies the total number of seconds to wait before forcing disconnection of clients. The default (and minimum) value is 120 seconds.

For example, if you type

```
fmsadmin close --grace-time 120
```

clients see a dialog box immediately and can click **Close Now** or **Cancel**. If the client does not click a button, the file closes in 30 seconds. If the client clicks **Cancel**, the dialog box will reappear 45 seconds before the specified time limit (120 seconds). If the client clicks **Close Now** at this point, the file closes immediately. If the client clicks **Cancel** again, the file closes after another 45 seconds.

`-f`, `--force`

Forces a database to be closed without a prompt for confirmation.

### Related topics

[DISCONNECT command](#) (page 178)

[OPEN command](#) (page 182)

[STOP command](#) (page 189)

[Command line reference](#) (page 171)

## DISABLE command

### Format

```
fmsadmin DISABLE [TYPE] [SCHEDULE_NUMBER]
```

### Description

Disables the item of the specified TYPE.

### Valid TYPES

SCHEDULE: Disables a [schedule](#).

SCHEDULE\_NUMBER is the ID of the schedule to disable. Use the LIST SCHEDULES command to obtain the ID number of each schedule.

### Options

None.

### Related topics

[ENABLE command](#) (page 179)

[LIST command](#) (page 181)

[Command line reference](#) (page 171)

## DISCONNECT command

### Format

```
fmsadmin DISCONNECT CLIENT [CLIENT_NUMBER] [options]
```

### Description

Disconnects the specified [client](#). The CLIENT\_NUMBER is the ID number of the client. Use the LIST CLIENTS command to obtain a list of clients and their ID numbers.

---

**Important** The command `fmsadmin DISCONNECT client` without a client ID number disconnects **all** clients.

---

### Option

`-m message`, `--message message`

Specifies a text message to be sent to the client that is being disconnected.

### Related topics

[CLOSE command](#) (page 176)

[LIST command](#) (page 181)

[STOP command](#) (page 189)

[Command line reference](#) (page 171)

## ENABLE command

### Format

```
fmsadmin ENABLE [TYPE] [SCHEDULE_NUMBER]
```

### Description

Enables items of the specified TYPE.

### Valid TYPES

SCHEDULE: Enables a [schedule](#).

SCHEDULE\_NUMBER is the ID of the schedule to enable. Use the LIST SCHEDULES command to obtain the ID numbers of each schedule.

### Options

None.

### Related topics

[DISABLE command](#) (page 177)

[LIST command](#) (page 181)

[Command line reference](#) (page 171)

## HELP command

### Format

```
fmsadmin [options] HELP [COMMAND]
```

### Description

Displays a help page for other fmsadmin commands.

- Type `fmsadmin help` for general information.
- Type `fmsadmin help commands` for a list of available commands.
- Type `fmsadmin help [COMMAND]` for help on a specific command.
- Type `fmsadmin help options` for a list of available options.

### Related topic

[Command line reference](#) (page 171)

## LIST command

### Format

```
fmsadmin LIST [TYPE] [options]
```

### Description

Lists items of the specified TYPE.

### Valid TYPES

**CLIENTS:** Lists the connected clients. The following example lists the currently connected users:

```
fmsadmin list clients
```

**FILES:** Lists the hosted files. The following example returns file IDs and other statistics for the currently open, hosted files in the default folders:

```
fmsadmin list files [-s]
```

**PLUGIN:** Lists [Database Server](#) calculation [plug-ins](#). The following example lists all plug-ins:

```
fmsadmin list plugins
```

**SCHEDULES:** Lists [schedules](#). The following example lists all schedules:

```
fmsadmin list schedules
```

### Option

`-s, --stats`

Displays statistical information about CLIENTS and FILES.

### Related topic

[Command line reference](#) (page 171)

## OPEN command

### Format

```
fmsadmin OPEN [FILE...] [PATH...]
```

### Description

Opens databases in the default and additional database folders. Each FILE specified is opened, or all the files in each PATH are opened. If no FILE or PATH is specified, all files in the default folder are opened.

To specify a file by its ID rather than its filename, first use the LIST command to get a list of all currently open files and their file IDs:

```
fmsadmin list files [-s]
```

After you have the file IDs, you can use the OPEN command and specify IDs of the files to open.

For example, the following command opens file IDs 20 and 22 and the folder "Solution":

```
fmsadmin open 20 22 "filemac:/Library/FileMaker Server/Data/Databases/  
Solution/"
```

### Options

None.

### Related topics

[CLOSE command](#) (page 176)

[LIST command](#) (page 181)

[Command line reference](#) (page 171)

## PAUSE command

### Format

```
fmsadmin PAUSE [FILE...] [PATH...]
```

### Description

Pauses the specified files (FILE) or all the hosted files in the specified paths (PATH). If no FILE or PATH is specified, pauses all hosted files.

After a file is paused, it is safe to copy or back up the file until a RESUME is performed.

### Options

None.

### Related topics

[BACKUP command](#) (page 175)

[RESUME command](#) (page 184)

[Command line reference](#) (page 171)

## RESUME command

### Format

```
fmsadmin RESUME [FILE...] [PATH...]
```

### Description

Makes a database that has been paused available again. Each FILE specified is resumed, and all files in each PATH are resumed. If no FILE or PATH is specified, all paused files are resumed.

### Options

None.

### Related topics

[BACKUP command](#) (page 175)

[PAUSE command](#) (page 183)

[Command line reference](#) (page 171)

## RUN command

### Format

```
fmsadmin RUN schedule [SCHEDULE_NUMBER]
```

### Description

Manually runs a [schedule](#) specified by its SCHEDULE\_NUMBER. To obtain a list of schedules and their ID numbers, use the LIST SCHEDULES command.

### Options

None.

### Related topics

[LIST command](#) (page 181)

[Command line reference](#) (page 171)

## SEND command

### Format

```
fmsadmin SEND [options] [CLIENT_NUMBER] [FILE...] [PATH...]
```

### Description

Sends a text message to a [client](#) specified by CLIENT\_NUMBER, to the clients connected to the specified files (FILE), or to all clients connected to any file in the specified paths (PATH).

If no CLIENT\_NUMBER, FILE, or PATH is specified, the message is sent to all connected clients. By default, parameters are expected to be FILES or PATHS.

To specify a CLIENT\_NUMBER, you must use the `-c` option. For example:

```
fmsadmin SEND -c 2 -m "This is a test message"
```

### Options

`-m message`, `--message message`

Specifies the text message to send.

`-c`, `--client`

Specifies a CLIENT\_NUMBER.

### Related topics

[LIST command](#) (page 181)

[Command line reference](#) (page 171)

## START command

### Format

```
fmsadmin START SERVER
```

### Description

Starts the [Database Server](#). This command works only if the FileMaker Server service (Windows) or daemons (Mac OS) are running.

### Options

None.

### Related topics

[STOP command](#) (page 189)

[Starting and stopping FileMaker Server](#) (page 51)

[Command line reference](#) (page 171)

## STATUS command

### Format

```
fmsadmin STATUS [TYPE] [CLIENT_NUMBER] [FILE]
```

### Description

Retrieves the status of the specified TYPE.

### Valid TYPES

CLIENT: Retrieves the status of a [client](#) specified by CLIENT\_NUMBER. For example:

```
fmsadmin STATUS client 2
```

Use the LIST CLIENTS command to obtain a list of clients and their ID numbers.

FILE: Retrieves the status of an open file specified by FILE. For example, to get the status of a file named "Database":

```
fmsadmin STATUS file Database
```

### Options

None.

### Related topics

[LIST command](#) (page 181)

[Command line reference](#) (page 171)

## STOP command

### Format

```
fmsadmin STOP [options]
```

### Description

Stops the [Database Server](#).

### Options

`-f, --force`

Expedites shut down of the Database Server. All clients are immediately disconnected.

`-m message, --message message`

Specifies a text message to send to the connected clients.

`-t seconds, --grace-time seconds`

Specifies the total number of seconds to wait before forcing disconnection of clients. The default (and minimum) value is 120 seconds.

For example, if you type

```
fmsadmin stop --grace-time 120
```

clients see a dialog box immediately and can click **Close Now** or **Cancel**. If the [client](#) does not click a button, the client is disconnected in 30 seconds. If the client clicks **Cancel**, the dialog box will reappear 45 seconds before the specified time limit (120 seconds). If the client clicks **Close Now** at this point, the client is disconnected immediately. If the client clicks **Cancel** again, the client is disconnected after another 45 seconds.

The grace-time option is available only if the `--force` option is not used.

### Related topics

[START command](#) (page 187)

[CLOSE command](#) (page 176)

[DISCONNECT command](#) (page 178)

[LIST command](#) (page 181)

[Starting and stopping FileMaker Server](#) (page 51)

[Command line reference](#) (page 171)

# Glossary

## A

### Access privileges

Permission to view and work with certain records, fields, layouts, value lists, and scripts and to perform selected activities in a file.

### Account

A username and (usually) password that accesses a file with a defined level of privileges.

### Active Directory

In Windows, the distributed directory service that is included with the Microsoft Windows 2000 and 2003 Server operating systems. Active Directory provides centralized, secure management of a network.

### Admin Console

The application you use to configure and administer FileMaker Server, work with hosted databases, view details about connected clients, and track statistical information.

### Administrative tasks

Procedures performed regularly by the administrator to keep FileMaker Server running efficiently and insure data integrity in hosted databases. For example, running regularly scheduled database backups is a typical administrative task.

### API (Application Programming Interface)

A set of software application building blocks, such as classes, methods, data structures, variables, procedures, and functions.

### AppleScript

Mac OS: A scripting language you can use to control functions of the Mac OS and of applications that support AppleScript (often called scriptable applications).

### Assistants

Onscreen instructions that guide you step-by-step through a task.

### Authentication

The process of checking the validity of an account and password (if one is defined) before assigning privileges and allowing access to a system or a database file.

## B

### Backup

A copy of a database file that can be used if the original is lost, damaged, or otherwise irretrievable.

### Block

A string of data elements recorded or transmitted as an individual unit. A block is often the smallest unit of data a program reads from or writes to the hard disk.

## C

### Cache

An area of RAM reserved by a program to store frequently used data, providing faster access than if the data had to be read from the hard disk. A larger cache size increases FileMaker Server performance.

### CLI

CLI is the command line interface. Using the FileMaker Server CLI, an administrator can enter `fmsadmin` commands to administer FileMaker Server.

### Client

A user who opens a connection to a database hosted on FileMaker Server with FileMaker Pro, a web browser, or an ODBC/JDBC client application.

### Client application

The application that requests data from a data source. Examples include FileMaker Pro, when it accesses a database hosted by FileMaker Server, and a spreadsheet, when it requests data using SQL via ODBC or JDBC.

### Container field

A FileMaker Pro field that can store pictures, sounds, QuickTime movies, or files of any type.

### Custom Web Publishing

A method of sharing FileMaker databases on the web using XML, XSLT, or PHP. You can create dynamic webpages that enable users to interact with databases hosted on FileMaker Server.

## D

### Daemon

Mac OS: a process that runs in the background and performs functions to support other programs. FileMaker Server runs as several daemons in Mac OS.

### Database file

A collection of information in a file containing one or more tables pertaining to a subject, such as customers or invoices. (A large database can also comprise many database files.)

### Database file compression

The process of removing empty fields or redundant or unnecessary data in database files to minimize the amount of disk space they require.

### Database Server

The component of FileMaker Server that hosts databases. In a multiple-machine deployment, the machine running the Database Server is called the master machine. Database files are stored on the master machine's hard disk.

### Databases folder

On startup, FileMaker Server looks for databases to host in the default Databases folder, additional folder, and in subfolders one level down.

### Data source

Data you want to access, for example, data in a FileMaker Pro database or in another database management system.

**Data source name (DSN)**

A data structure that contains the information about a specific database that an ODBC driver needs in order to connect to it.

**Deployment**

The process and result of installing and configuring FileMaker Server components on one or more machines. In a multiple-machine deployment, components are deployed across more than one machine and work together as a unit.

**Directory service**

Software with a client/server architecture that is used to store information about your organization. The primary function of a directory service is to centralize the storage of information and respond quickly to queries.

**Distinguished name (DN)**

Uniquely identifies an entry in a directory tree, using a series of comma-separated attributes. In a DN, the left-most component is the actual directory object, and the right-most value is the directory root.

**Domain name**

A name that identifies a computer on the internet.

**Driver**

The ODBC or JDBC driver translates SQL queries into commands that a DBMS can understand. It processes ODBC/JDBC calls, submits SQL requests to the data source, and returns the data back to the driver manager, which then routes it to the requesting application.

**E****Event Viewer**

Windows: An administrative tool that comes with the Windows operating system and displays events stored in various log files. FileMaker Server reports its events to the Application log, and these events can be viewed using Event Viewer.

**Event.log**

A file that records events that occur while the Database Server is running.

**Extended privilege**

FileMaker Pro data sharing permissions that determine if a privilege set allows users to access a hosted file using FileMaker Pro, use a database as an ODBC/JDBC data source, or access data published on the web.

**F****FileMaker Pro**

An application for creating and modifying database files. Clients use FileMaker Pro to access database files hosted by FileMaker Server.

**FileMaker Pro Advanced**

An application that enables database developers to build custom FileMaker solutions for use on the web or in workgroups, and to create royalty-free runtime applications and custom FileMaker plug-ins.

## G, H

### **Hibernate**

Windows: A power conservation mode that saves energy on an idle system. If the computer running FileMaker Server hibernates, all client activity is suspended. Hibernation will not occur on the server machine if there are clients connected to hosted databases.

### **Hosted database**

A file opened by FileMaker Server for clients to use on a computer network. One or more clients can access and change information simultaneously in hosted databases.

## I, J, K

### **IP (Internet Protocol) address**

A four-part number, usually formatted as 12.34.56.78, that uniquely identifies a computer on a network or on the Internet.

### **IWP (Instant Web Publishing)**

A method of sharing your FileMaker databases with other users via a web browser. Web clients are limited to the layouts that you provide and to the privilege sets assigned to their user accounts.

### **JDBC**

A Java API that uses SQL statements to access data from, and exchange data with, many database management systems. The JDBC driver communicates between your Java applet and the FileMaker Pro or FileMaker Server Advanced data source.

### **JDBC client driver**

A JAR (Java Archive) file that sends an SQL query to access data stored in a database and delivers the requested data to the client application.

### **Java Web Start**

A technology that deploys applications to users by making the applications available from a standard web server. The user computer requires the Java Runtime Environment (JRE).

## L

### **Lightweight Directory Access Protocol (LDAP)**

This protocol, which runs over TCP/IP, makes it possible for system administrators to centrally manage users, groups, devices, and other data.

## M

### **Machine roles**

Each computer in a FileMaker Server deployment is assigned a machine role as either a master (only one) or a worker (one or two).

### **Master**

The machine in a FileMaker Server deployment that runs the Database Server and manages all worker machines. The master communicates with the workers to handle database requests from users, configure the settings on all machines, and monitor the status and activity of all components.

## N

### NetInfo

The information management system for the Mac OS platform. It manages all of the operating system settings and information, such as users and groups. It also handles the authentication of users.

### Network protocol

A set of rules that governs how computers exchange messages on a network. Common protocols include TCP/IP, HTTP, and HTTPS.

## O, P, Q

### ODBC

An API that uses SQL statements to access data from, and exchange data with, many database management systems. FileMaker Server Advanced can share data as a data source via ODBC. FileMaker Server can also interact with data from other applications (as an ODBC client application).

### ODBC client driver

A DLL (Windows) or shared library (Mac OS) that sends an SQL query to access data stored in a data source and delivers the requested data to the client application.

### Open Directory

Apple's standards-based directory and network authentication services architecture for Mac OS X.

### PHP (PHP: Hypertext Preprocessor)

An open-source programming language primarily used in server-side application software to create dynamic web pages. FileMaker Server lets you publish data from FileMaker Pro databases on customized web pages created with PHP.

### Plug-in

Software that extends the capabilities of an application in a specific way.

### Privilege set

A defined set of permissions that determines a level of access to a database file.

## R

### Relationships graph

In FileMaker Pro, you can see the occurrences of tables both in the current file and from any external, related database files. In this relationships graph, you join tables and change relationships between fields in different tables.

### Runtime solution file

A database file that has been created with FileMaker Pro Advanced software in which data can be added, deleted, and changed, but in which database fields and layouts cannot be altered.

## S

### Schedules

You can create schedules to back up hosted databases, run scripts, and send messages to clients.

### ScriptMaker

A feature in FileMaker Pro that enables you to create a script that tells FileMaker Pro to perform one action or a sequence of actions, or script steps.

### Secure Sockets Layer (SSL)

A protocol to encrypt and authenticate communications on the Internet. Used by the HTTPS access method.

### Service

Windows: a process that runs in the background and performs functions to support other programs. FileMaker Server runs as a service in Windows.

### Sleep

A feature of the operating system that saves energy on an inactive computer. If the computer running FileMaker Server sleeps, all client activity is suspended.

### SMTP (Simple Mail Transfer Protocol)

A standard server-to-server protocol for transferring email messages. FileMaker Server uses this protocol to send email notifications.

### SQL

A structured programming query language that controls and interacts with a DBMS.

### Standby

Windows: A power conservation feature that saves energy on an idle system. If the computer running FileMaker Server enters Standby mode, all client activity is suspended. The server computer will not enter Standby mode if there are FileMaker Pro clients connected to hosted databases.

### Stats.log

A file that records statistical information about how FileMaker Server is performing.

## T

### TCP/IP (Transmission Control Protocol/Internet Protocol)

The basic communication protocol that is the foundation of the Internet.

### Toolbar

A collection of tools in Admin Console that execute frequently used commands.

## U, V, W, X, Y, Z

### Upload

To transfer data or files from one computer to a remote computer. For example, to use the Upload Database assistant to transfer a database file to FileMaker Server.

### Web Publishing Core

A software component of the Web Publishing Engine that processes requests for data and converts data from the Database Server into XML.

**Web Publishing Engine**

The Web Publishing Engine provides the Custom Web Publishing services for databases hosted by FileMaker Server and the Instant Web Publishing services (for FileMaker Server Advanced).

**Web server**

The software responsible for responding to HTTP or HTTPS requests from users on the web. Required in a FileMaker Server deployment for publishing databases on the web.

**Web Server Module**

A FileMaker Server software component installed on the web server machine. The Web Server Module enables the Web Publishing Engine to connect to the web server.

**Worker**

A machine in a FileMaker Server deployment that runs either the Web Publishing Engine or the web server. Workers are configured and monitored by the master.

**XML**

Instead of being a rigid file format, XML is a language for defining agreed-upon formats that groups can use for exchanging data. Many organizations and businesses use XML to transfer product information, transactions, inventory, and other business data.

**XSLT**

XSLT (XSL Transformations) is a subset of XSL (Extensible Stylesheet Language) that is used to transform, or change, the structure of an XML document into a different document format. For example, you can use an XSLT style sheet to transform an XML document into an HTML or TXT document.

## Registration

Please take the time to register your product by choosing **Help** menu > **Register Now** in FileMaker Server Admin Console. By registering your software, you may be eligible for upgrade offers and other customer services.

If you are using the FileMaker Server trial version, you must register your software prior to use.

For more information on registration, see “Registration and customer support” in FILEMAKER SERVER GETTING STARTED GUIDE on the Start Page.

## Customer support and Knowledge Base

For information about technical support and customer service, visit [www.filemaker.com/intl](http://www.filemaker.com/intl).

To access resources on the FileMaker web site such as ready-made solutions and the FileMaker Knowledge Base, in FileMaker Server Admin Console choose **Help** menu > **FileMaker on the Web**.

For free online technical support, use the FileMaker Knowledge Base. It offers answers to frequently asked questions, tips, troubleshooting advice, and much more. Knowledge Base articles are available only in English.

<http://www.filemaker.com/kb>

If you do not have access to the web, please refer to the FileMaker Service Directory that comes with your software. North American customers can also call (800) 325-2747 to learn about the service options available.

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