

BIO

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Web Development

Web Summary

OmniPilot Lasso Professional Server 8.5 is a secure, flexible solution for FileMaker developers who want to share their existing FileMaker solutions over the Web.

Get Started with Lasso Professional Server

Leverage the power of Lasso, a server-side embedded scripting language, to speed and secure Web queries.

By Tami Williams

The easiest way to put your FileMaker solution online is to use FileMaker Pro's built-in Instant Web Publishing (IWP). But what do you do when you start pushing the limits of what IWP can do? One option is OmniPilot Lasso Professional. Only Lasso Professional lets you create "Database Independent Code" so you can connect to any database without having to learn SQL. And, unlike open source languages, you aren't limited to e-mail lists and other online sources if you need help -- you can call OmniPilot and talk to a person on the phone. Lasso's built-in admin interface and security features help make it easy to use, and some tags are specifically for FileMaker Pro, making Lasso easier to learn. And with a plethora of powerful features, Lasso can help you take your Web site to the next level.

Let's take a look at some Lasso code.

How it works

Lasso works by using a simple tag-based markup language (Lasso Dynamic Markup Language, or LDML) you can embed in Web pages and scripts residing on your Web server to let a Web browser get to data from your databases. Using LDML, Lasso can send a query to your database and display the results in a browser.

Try it out

Here's a simple Web publishing scenario using Lasso: Imagine you have a FileMaker Pro database (Employee) containing employee names and e-mail addresses and you want to create search and search result pages so users can search that database via a browser over your company intranet.

Hardware configuration

A typical hardware configuration for FileMaker/Lasso solutions is to have one machine: a Web server running Apache or IIS, Lasso, and FileMaker Server Advanced. Or, you could have two machines: one running FileMaker Server Advanced, and the other a Web server running Apache or IIS and Lasso.

Prepare your database

You must host each database you want to access on FileMaker Server Advanced and have an account with the fmxml extended privilege (figure 1).

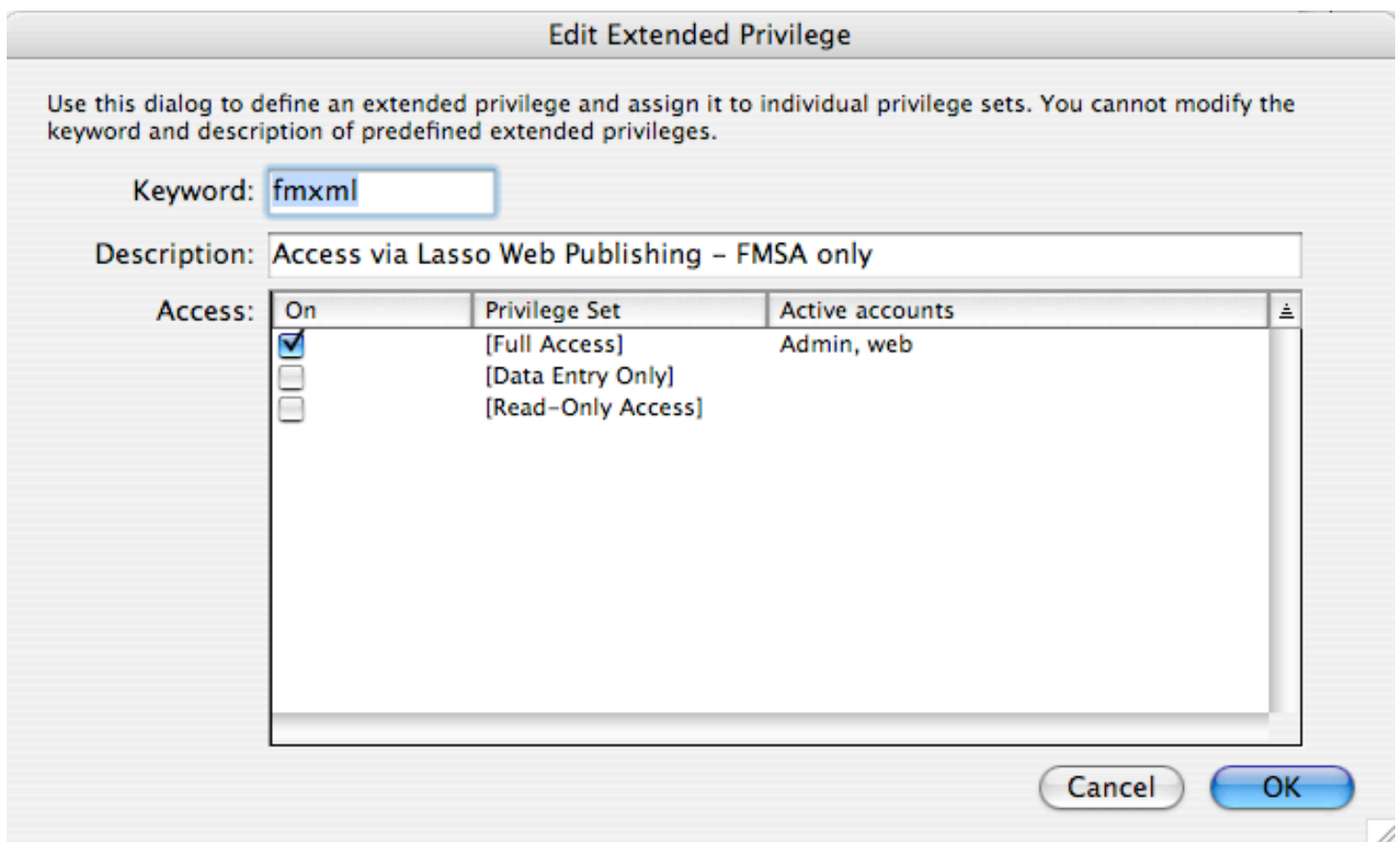
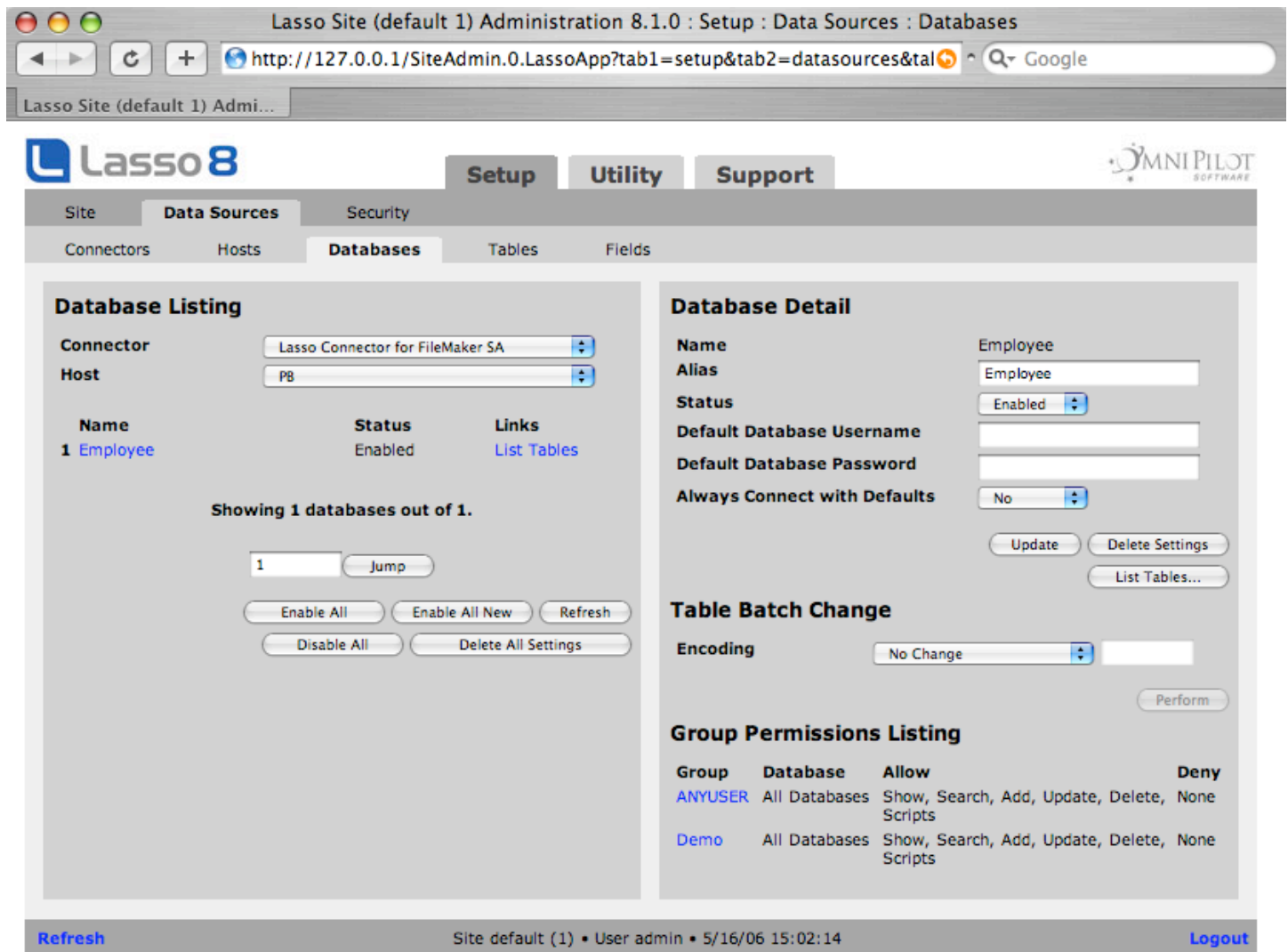


Figure 1: FileMaker Define Accounts & Privileges, Edit Extended Privilege.

And enable your database for use with Lasso using Lasso Site Admin. (figure 2).



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Figure 2: Lasso Site Admin -- a convenient, Web-based interface for configuring Lasso site settings, managing and maintaining databases, configuring Lasso Security, monitoring events, and much more.

Simple LDML

All your HTML pages (static and those with embedded Lasso code) reside on your Web server machine. Any requests the Web server receives for pages with a .lasso extension (or any other extension you define) are handed off to Lasso for processing. If necessary, Lasso talks to FileMaker Server Advanced to send or retrieve data. Lasso then passes back plain HTML to the Web server, which, in turn, sends it to the user's browser. Users never see the Lasso code embedded in your HTML pages. They only see the post-processing results, which is simply HTML.

Let's look at test.lasso, a simple example of LDML:

```
<html>
<title>My first Lasso test</title>
<body>

<?Lassoscript
var:'a' = 5;
var:'b' = 8;
var:'c' = $a * $b;
?>
```

If you multiply [\$a] and [\$b], you'll get [\$c].

```
</body>
</html>
```

When a browser requests test.lasso, the Web server notices the .lasso extension and hands the document off to Lasso for processing. Lasso executes the program code contained between the [and] symbols and inside the <?Lassoscript ... ?>. Here, you're asking Lasso to multiply 5 and 8, then write a line of output. After execution, Lasso hands back the processed document to the Web server. Thus, what the Web server sends back to the browser is simply:

```
<html>
  <title>My first Lasso test</title>
  <body>
    If you multiply 5 and 8, you'll get 40.
  </body>
</html>
```

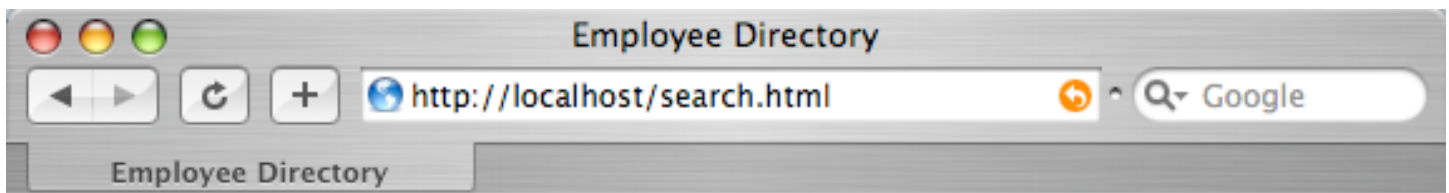
Talk to your database

Now let's create the search and results pages. As with other embedded languages (e.g., CDML, PHP, Cold Fusion, ASP, JSP), you don't have to have any special tools to embed Lasso code in an HTML document. Just about any Web authoring tool or text editor will do.

The page where users enter their search criteria is just an HTML form. To display that form to the user, there's no need to have Lasso talk to the database. It's only when a user submits the form that Lasso has to perform a find in the database. So, keeping formatting to a minimum for now, your search.html page consists of the following:

```
<html>
<title>Employee Directory</title>
<body>
<br><br><br>
<center>XYZ Corp Employee Directory
<br><br><br><form action="findEmployees.lasso" method="post">
Last Name: <input type="text" name="last_name"><br><br>
First Name: <input type="text" name="first_name"><br><br>
<input type="submit" value="Perform Search">
</form>
</center>
</body>
</html>
```

Take a look at the form tag on line 7. A form's "action" attribute tells the Web server what to do with the form after it has been submitted. In this case, it instructs the Web server to send all the form data to something called findEmployees.lasso, the next page you're going to write. Figure 2 shows the search page as it would appear to users.



XYZ Corp Employee Directory

Last Name:

First Name:

Figure 2: Search page -- The search page is just a plain HTML form, but it contains instructions to send the user's entries to a Lasso page for processing.

Now write the code for the search results page, findEmployees.lasso. Remember, the .lasso extension tells the Web server this page contains embedded Lasso code.

```
<html>
<title>Employee Directory</title>
<body>
<br><br><br>
<center>

[inline:
-database='Employee',
-table='web',
'last_name' = (action_param:'last_name'),
'first_name' = (action_param:'first_name'),
-search]

[if: (Found_Count) == 0]
No records matched your criteria. Please try again.
[else]

Search Results<br><br><br>
<table with=60% border=1
<tr><td>Last Name</td><td>First Name</td><td>E-Mail
Address</td</tr>

[records]
<tr><td>[field:'last_name']</td><td>[field:'first_name']</td><td>[field:'ema
il']</td</tr>
[/records]
</table>

[/if]
[/inline]

<br><br>
<a href="search.html">Search Again</a>
</center>
</body>
</html>
```

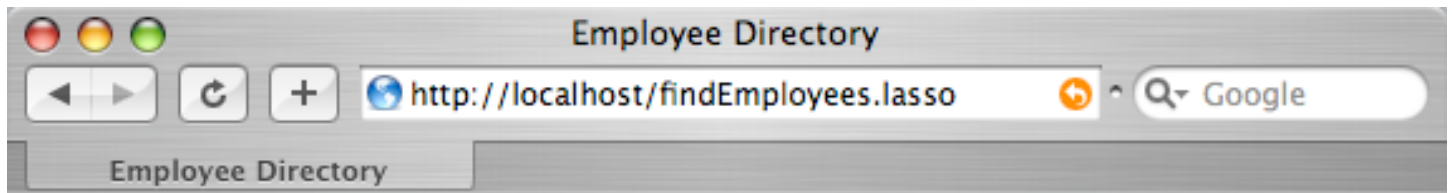
The first Lasso tag you see is a container tag called "inline." The inline contains the parameters Lasso requires to query FileMaker: the database name,

layout/table occurrence name, user entries from the search page (also known as form parameters in HTML), and a database action parameter (-search) to find records in the database that match the search criteria.

The familiar "Database-Tables/Layouts-Records-Field" terminology is one way Lasso makes learning easy for FileMaker users. Users can also use Column/Field and KeyField/RecordID interchangeably.

The "inline" container tag above works with MySQL, 4D, PostgreSQL, Microsoft SQL Server, Oracle, SQLite, ODBC, OpenBase, Spotlight, and LDAP. So if you want to query FileMaker and/or any of these other databases on any Web page, you don't have to learn any other language but Lasso.

At this point Lasso queries FileMaker and puts the response into a big, multi-dimensional array. One of the items in that array contains the number of records the query returns. You use a simple conditional statement to evaluate the number of records, then output to the browser window a "No records found" message, or proceed to loop through the search results (using the records container tags) and output them to the screen. Figure 3 shows what the search results might look like after searching for "Flintstone" in the Employee database.



Search Results

Last Name	First Name	E-Mail Address
Flintstone	Fred	tred@flintstones.com
Flintstone	Wilma	wilma@flintstones.com

[Search Again](#)

Figure 3: Finding Fred -- The results of your search for "Flintstone."

With that query, this simple example is complete. If you've never seen Lasso code before, it might seem a bit strange at first. But really, if you have any experience with procedural or object-oriented programming, you'll pick up Lasso syntax quickly.

In addition to searching for records, you can use Lasso to submit requests to your data source that will add, edit, or delete records from a database. You can also submit multiple requests in a single document, which is like using the inline functions of CDML.

Worth considering

I hope I've convinced you that Lasso is worth considering as a Web development tool. Lasso can use the same code to talk to multiple data sources, and is a powerful, secure, fast, full-featured, well-supported, easy-to-learn method to get your existing FileMaker Pro solutions onto the Web.

SIDEBAR

What is Lasso?

In 2006, OmniPilot marks the 10 year anniversary of Lasso with the release of Lasso Professional Server 8.5. Over the last 10 years Lasso has grown from a simple scripting language on the Mac to an enterprise programming language, application server, and development platform for Mac, Windows, and Linux. Lasso is a secure alternative to open source Web development languages. It is used by more than 15,000 corporations worldwide, from The Golf Channel to NASA, and by more than 1,000 educational institutions from Massachusetts Institute of Technology (MIT) to the University of Houston.

Lasso installs on your Web server and lets you create dynamic Web sites. It's a server-side embedded scripting language, much like other middleware tools such as Cold Fusion, ASP, JSP, and PHP. However, unlike those other languages, you can use the same Lasso code with all the data sources it supports.

You can configure Lasso for use with Apache 1.3 (built-in), Apache 2, and WebSTAR V on Mac OS X Panther and Tiger (10.3 or newer), Apache 2 (built-in) on Mac OS X Server (10.3 or newer), IIS 5 and 6 on Windows XP Pro, Windows 2000 Server, and Windows 2003 Server, and J2EE-compliant Web servers on any platform, including Red Hat Enterprise Linux 4.

Lasso has built-in connections to work with Web Companion enabled versions of FileMaker Pro including FileMaker Pro 4x, FileMaker Pro 5x Unlimited, and FileMaker Pro 6x Unlimited, and with FileMaker 7 through FileMaker Server 8 Advanced.

Lasso also works with MySQL version 4 and 4.1 and provides support for JDBC level 1, 2, and 3 data sources so you can connect to 4D databases through provided JDBC drivers.

Lasso Professional Server 8.5 (LP 8.5) includes new native data source connectors for PostgreSQL, Microsoft SQL Server, Oracle, SQLite, ODBC, OpenBase, Spotlight, and LDAP. LP 8.5 also has universal binary for Intel Mac for the best speed and compatibility; LJAX to support Web 2.0 techniques including Lasso AJAX tags and JavaScript functions; built-in LDAP integration so you can log into your FileMaker-driven Lasso Web application with the same username and password you use in your FileMaker desktop application (if your FileMaker desktop application uses LDAP); the ability to specify data sources in inlines, use prepared statements for faster database operations, and create multiple result sets from a single inline; shell support to access native processes in the OS; an enhanced server and site admin improvements including the ability to view, prioritize, and abort threads from the admin; e-mail enhancements that include direct sending to remote SMTP servers, SSL support; improved encoding speed, and better support for attachments; DNS lookup tags; URL rewrite tools; better encoding support in file and network tag; iCal file support to let you view and update your iCal desktop calendar from a Lasso Web site, and more.

Lasso Professional Developer Edition

Omnipilot will also release Lasso Professional Developer Edition 8.5 in 2006. Lasso Professional Developer Edition has all the functionality of Lasso Professional Server 8.5, but allows access from a limited number of IP addresses and sells at a reduced price. The IP address limit lets you develop and test on one machine and permit remote access from a limited number of other machines. Solutions developed with Lasso Professional Developer Edition 8.5 require a server running Lasso Professional Server 8.5 if you want your Web site to be available to more people than allowed by the IP address limit.

Chart FX for Lasso

Chart FX, by Software FX, is a charting solution for enterprise developers who want to add data visualization capabilities to their applications. With the

release of LP 8.5, OmniPilot has partnered with Software FX to bring Chart FX for Lasso to the Mac and Linux platforms. (Chart FX already exists for Windows.) Chart FX isn't available for PHP, FileMaker Instant Web Publishing, or FileMaker Custom Web Publishing. Chart FX for Lasso lets you add graphically dynamic charts to your Lasso Web applications quickly and easily.

Chart FX for Lasso features include borders, 2D and 3D, rotation and perspective, transparency and anti-aliasing, labeling, gradients, constants, series attributes, and customized legends, and more.

Lasso Professional Server 8.5 includes Chart FX for Lasso in demo mode, letting you design charts using the Chart FX Designer and test how they work before investing in the full version. A full version of Chart FX for Lasso is included free with Lasso Professional Developer Edition 8.5.

Lasso Community

Lasso has a large developer community. You can subscribe to Lasso Talk, a live e-mail discussion list with 24x7 access, search the Lasso Talk Archives (<http://www.listsearch.com/>), exchange information with others in real time via AIM or iChat at Lasso Chat, use OmniPilot's free Lasso examples, download more than 100 free Lasso custom tags and post your own at tagSwap.net, collaborate on open-source Lasso projects at LassoForge (<http://www.lassoforge.com/>), visit Lasso Scripts (<http://www.lassoscripts.com/>) for pre-developed code snippets, scripts, tags, tutorials, and more, and go to LDML.org, an interactive community for Lasso developers to share code, solutions, how-tos, and in-depth articles about Lasso.