



Getting Started



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Contents

Chapter 1

Introduction	5
Background	5
Overview	6
Lasso Documentation.....	6

Chapter 2

Installing Lasso Professional Server	7
System Requirements	7
Mac OS X	9
Windows	12
Linux.....	16

Chapter 3

Configuring Lasso Professional Server .	23
Server Administration.....	23
Site Administration.....	24
Database Browser	26
Lasso Reference	26

Chapter 4

Getting Started	28
Web Server Root	28
Lasso Page	28

What's Next?	31
--------------------	----

1

Chapter 1

Introduction

This paper provides instructions for how to install, configure, and get started with Lasso Professional Server. This documentation has four chapters.

- This *Introduction* includes background information about Lasso Professional Server including an overview of its features.
- *Installing Lasso Professional Server* includes system requirements and instructions for installing Lasso on Mac OS X, Windows, or Linux
- *Configuring Lasso Professional Server* includes an overview of Lasso Administration, Database Browser, and Lasso Reference.
- *Getting Started* includes instructions for creating your first Lasso pages and processing them through Lasso.

Each of these topics is covered in more detail in the Lasso Professional Server Setup Guide and the Lasso 8 Language Guide. This guide provides documentation of the most common installation configurations. For details about custom configurations, please consult the Setup Guide.

Background

Lasso Professional Server is a middleware tool that installs into your Web server and allows you to create dynamic Web sites. The pages on your Web site can draw data from any number of data sources including MySQL and FileMaker Pro. Your site can make use of over one thousand tags to get client information, perform math and string operations, display dates, manipulate XML data, create PDFs, modify images, send mail to SMTP servers, download mail from POP servers, process SOAP and XML-RPC operations, and much more.

This guide includes information about installing and configuring Lasso Professional Server and creating simple dynamic Web pages.

Overview

Installing and configuring Lasso Professional Server consists of the following steps. These are covered in detail in the following chapters.

- Check the system requirements to be sure your system supports Lasso.
- Install Lasso Professional Server using the installer application or package
- Initialize Lasso by entering your serial number (or evaluation serial number) and establishing a server administrator username and password.
- Configure Lasso using the Server and Site Administration applications.

In addition, this document includes an overview of the Database Browser and Lasso Reference and includes instructions for creating and serving a dynamic Lasso page.

Lasso Documentation

The documentation for Lasso Professional Server is divided into several different references available in print and electronic formats. Each of the guides is included in PDF format inside the Lasso Professional 8/Documentation folder installed on your hard drive. The following manuals and resources are included.

- **Lasso Professional Server Setup Guide** – This is the first guide to the Lasso 8 product line you should read. It includes documentation of the architecture of Lasso Professional Server, installation and configuration instructions, documentation for the administration interface, and provides an introduction to building and serving Lasso solutions.
- **Lasso 8 Language Guide** – The documentation of LassoScript, the language used to access data sources, specify programming logic, and much more. This is the core resource for learning how to build Lasso solutions.
- **Lasso 8 Reference** – Provides detailed documentation of each tag in Lasso 8. This is the definitive reference to the language of Lasso 8. Provided as a LassoApp installed with Lasso Professional Server, and is also available as an online resource from the OmniPilot Web site.

<http://dml.omnipilot.com/>

Additional bound and printed copies of each manual may be purchased at:

<http://store.omnipilot.com/>

Comments, suggestions, or corrections to the documentation are appreciated and may be sent to lassodocumentation@omnipilot.com.

2

Chapter 2

Installing Lasso Professional Server

This chapter includes instructions for how to install Lasso Professional Server. Consult the system requirements to insure your machine supports this version of Lasso. Then follow the instructions for your platform to install Lasso.

System Requirements

Lasso Professional Server will run on systems which meet the minimum requirements listed below. Although Lasso Professional Server may run on machines which do not meet these requirements, these installations are not supported.

Mac OS X

- Macintosh G5, G4, G3, or compatible computer.
- 512 MB of RAM. More recommended. (Requires an additional 64 MB of available RAM for each additional site. See the *Setting Up Sites* chapter for more information.)
- Standard installation of Mac OS X 10.3 or Mac OS X Server 10.3 with an HFS+ formatted hard drive with BSD subsystem option. UFS systems are not supported.
- Mac OS X build of Apache Web Server 1.3 (included with Mac OS X) or Apache Web Server 2.0 (included with Mac OS X Server), or alternately the latest version of WebSTAR V.
- X11 for Mac OS X 10.3 must be installed for the [Image] tags in Lasso Professional Server to function. For information on obtaining and installing X11, see the following URL:
<http://www.apple.com/macosx/x11/>

Windows

- 300 MHz or higher Pentium-compatible CPU.
- 512 MB of RAM. More recommended. (Requires an additional 64 MB of available RAM for each additional site. See the *Setting Up Sites* chapter for more information.)
- Windows XP Professional, Windows 2000 family (Professional, Server and Advanced Server editions), or Windows Server 2003 family (Web, Standard, Enterprise and Datacenter editions).
- Microsoft Internet Information Services (IIS) 5 or 6 (included with the versions of Windows listed above), or Apache 2.
- ImageMagick 6.2.0. For information on obtaining and installing ImageMagick, see the *Installation Instructions* section.
- Java Virtual Machine compatible with Sun's JRE 1.4 (Java 2). This is required for the use of LJAPI modules, JDBC data sources, and all LDML tags which are dependent upon Java. For details on which LDML tags are dependent upon Java, see the LDML 8 Reference. For more information on LJAPI, see the Lasso 8 Language Guide.

Linux

- 300 MHz or higher Pentium-compatible CPU.
- 512 MB of RAM. More recommended. (Requires an additional 64 MB of Available RAM for each additional site. See the *Setting Up Sites* chapter for more information.)
- Standard installation of Red Hat Enterprise Linux 4 with network support.
- Red Hat Linux installation of Apache Web Server 2 (included with Red Hat Enterprise Linux 4).
- Sun's Java Runtime Environment (JRE) 1.4.1 for Red Hat Linux is required for Java-based tags and JDBC data sources to function. Installation instructions are included below.
- ImageMagick 6.2.0 or greater is required for image manipulation tags to function. Installation instructions are included below.

Mac OS X

Installation on Mac OS X requires the following steps. Each step is documented fully on the following pages.

- Download and decompress the Lasso Professional Server installer for Mac OS X.
- If upgrading from a previous version of Lasso, export the previous installation of Lasso's settings using the Lasso Settings Migrator. This must be done before you install the new version of Lasso Professional Server.
- If it is not already installed, X11 should be downloaded from Apple.
- Install Lasso Professional Server using the provided installer.
- Initialize Lasso Professional Server in your Web browser.
- If upgrading from a previous version of Lasso, import Lasso's settings into the default site.
- If upgrading from a previous version of Lasso, copy or get updates to any startup items, and third-party data source modules or tag modules.

Note: If you are upgrading from a previous version of Lasso your settings databases will **not** be automatically copied into your Lasso 8 installation.

Exporting Settings

Important: These steps must be performed before the new version of Lasso Professional Server is installed.

- 1 Open the Lasso Settings Migrator folder in the downloaded installer. Copy the LassoSettingsMigrator folder into the Web server root. Access it through a Web browser at the appropriate URL.

`http://localhost/LassoSettingsMigrator/default.lasso`

- 2 Select the Export tab and the Export... button. A file will be saved to your default download location with the name `Export_YYYYMMDDHHMMSS.txt`.

Note: The settings export file contains data source and user passwords so should be treated as sensitive data.

Installing X11

X11 for Mac OS X must be installed in order for the image manipulation features of Lasso Professional Server to work (implemented via the [Image] tags). X11 is a free program that can be optionally installed as part of

Mac OS X 10.3 or can be installed manually by downloading it from the following address:

<http://www.apple.com/macosx/x11/download/>

Installing Lasso Professional Server

- 1 Double-click the Lasso Pro 8.0 Installer.mpkg application.
 - 2 An authentication dialog will prompt for an administrator name and password. Enter the username and password of a Mac OS X user on the machine who has administrative rights. Select Continue.
 - 3 The release notes will be displayed. The release notes contain important late breaking information that might not be covered in the documentation. Select Continue.
 - 4 The license agreement will be displayed. It must be agreed to before you can continue. Select Agree to continue.
 - 5 Select the drive you wish to install Lasso Professional Server on, then select Continue.
 - 6 By default Lasso will install into the built-in Apache 1.3 Web server on Mac OS X or the built-in Apache 2.0 Web server on Mac OS X Server. To select a different Web server, such as WebSTAR V or an alternate version of Apache, select the Options button. Select the desired Lasso Connector and continue.
 - 7 Select the Install button. This will install Lasso Professional Server with support for the selected Web server on your system.
 - 8 Select Quit when the installer has completed. Upon quit the installer automatically restarts your selected Web server and starts Lasso Service.
- After the installers has finished, it will automatically open a Web browser window and attempt to launch the Lasso Initialization page, which is described in the following *Initialization* section.

Initialize Lasso Professional Server

The Lasso initialization page can be accessed at the following URL on your server.

<http://localhost/ServerAdmin.LassoApp>

- 1 Enter the Lasso Professional Server serial number in the Serial Number field. This must be entered exactly as it appears in your OmniPilot invoice using the following format:
LP8-MAC-123456789

Serial numbers are case-sensitive. Make sure that all capitalization is correct and that all letters and numbers are entered, including the LP8 prefix.

- 2 Enter an administrator username in the Administrator Username field. This username will be used by the Lasso Professional Server global administrator to log in to the administration interface.
- 3 Enter a server administrator password in the Administrator Password field. This password will be used by the Lasso Professional Server global administrator with the administrator username to login to the administration interface.
- 4 Re-enter an administrator password in the Confirm Password field.
- 5 Select Submit Information.
- 6 The following screen allows the site administrator username and password for the default site to be established and for the default SMTP preferences to be established.
- 7 On the following screen select Open Server Administration to launch Server Administration. You will be prompted for the administrator username which was just established.

Import Settings

This step only needs to be performed if you exported settings using the Lasso Settings Migrator from a prior version of Lasso.

- 1 Open the default Site Administration interface at the following URL.
`http://localhost/siteadmin.lassoapp`
- 2 Visit the *Setup > Site > Import/Export* section of Site Administration. Select the file that you exported and select the Import Settings... button. It should have a name like `Export_YYYYMMDDHHMMSS.txt`.
- 3 Browse through the data sources and users and groups on the server to make sure that the settings import was successful.

Continue on to the next chapter of this guide for an introduction to Lasso Administration, Database Browser, and Lasso Reference.

Startup Items and Third-Party Modules

The upgrade procedure does not automatically copy any items that have been added to your Lasso installation. This section briefly documents the folders that you should check to see if there are any items that need to be copied into your Lasso 8 installation.

Note: It is a good idea to check with the developer of any third-party modules or startup items to see if they have a new version for Lasso 8.

- **LassoStartup** – This folder contains Lasso pages and LassoApps that are run when Lasso starts up. Any items other than `Startup.LassoApp` and `LassoStudio.LassoApp` can be copied to the corresponding folder in your Lasso 8 installation.
- **LassoModules** – This folder contains data source and tag modules. Any third-party modules can be copied into the corresponding folder in your Lasso 8 installation. Note that some items that were formerly placed in `LassoModules` are now found in `JDBCDrivers` or `JavaModules`. Also, some modules like `EmailCAPIDataSource` are no longer needed.
- **JDBCDrivers** – This folder contains JDBC drivers. Any drivers in this folder can be copied into the corresponding folder in your Lasso 8 installation.
- **JavaLibraries** – This folder contains support libraries for JDBC drivers or Java-based tag or data source modules. Any libraries in this folder can be copied into the corresponding folder in your Lasso 8 installation.

The folder structure for Lasso has changed with each release so your installation may not have all the folders which are listed above.

Windows

This section discusses installation procedures for Lasso Professional Server, and initializing Lasso Administration for the first run. This section will introduce the following:

- Download and decompress the Lasso Professional Server installer for Windows.
- If upgrading from a previous version of Lasso, export the previous installation of Lasso's settings using the Lasso Settings Migrator. This must be done before you install the new version of Lasso Professional Server.
- If it is not already installed, the latest ImageMagick version should be installed.
- If it is not already installed, the latest Java JRE version should be installed.
- Install Lasso Professional Server using the provided installer.
- Initialize Lasso Professional Server in your Web browser.
- If upgrading from a previous version of Lasso, import Lasso's settings into the default site.

- If upgrading from a previous version of Lasso, copy or get updates to any startup items, and third-party data source modules or tag modules.

Exporting Settings

Important: These steps must be performed before the new version of Lasso Professional Server is installed.

- 1 Open the Lasso Settings Migrator folder in the downloaded installer. Copy the LassoSettingsMigrator folder into the Web server root. Access it through a Web browser at the appropriate URL.

<http://localhost/LassoSettingsMigrator/default.lasso>

- 2 Select the Export tab and the Export... button. A file will be saved to your default download location with the name Export_YYYYMMDDHHMMSS.txt.

Note: The settings export file contains data source and user passwords so should be treated as sensitive data.

Installing ImageMagick

An installation of ImageMagick 6.1.5 is required for the [Image] tags in Lasso Professional Server to function properly. ImageMagick 6.1.5 is a free program that can be downloaded and installed using the procedure below.

It is recommended that ImageMagick 6.1.5 be installed prior to installing Lasso Professional Server. If ImageMagick 6.1.5 is not installed prior to Lasso Professional Server, errors will be displayed during the installation of Lasso Professional Server, and errors will be logged to Lasso's error log whenever Lasso Service is started.

- 1 Download the ImageMagick 6.1.5 installer at the following address:

<ftp://ftp.imagemagick.org/pub/ImageMagick/ImageMagick-6.1.5-10.zip>

Note: If this address is unavailable, see <http://www.imagemagick.com/www/archives.html> for alternate download sites.

- 2 Double-click the ImageMagick installer application, and then follow the instructions to install ImageMagick 6.1.5.

Installing Java

This section discusses installing Sun's Java Runtime Environment (JRE) 1.4 for Windows. JRE 1.4 is required to successfully use the Java-based features available in Lasso Professional Server. These include LJAPI modules, JDBC data source connectivity, and Lasso tags which are dependent upon Java.

For details on which Lasso tags are dependent upon Java, see the Lasso 8 Reference. It is unnecessary to install Java if these features will not be used.

- 1 Download Sun's JRE installer at the following address:

<http://java.sun.com/j2se/1.4/>

- 2 Double-click the JRE installer application, and then follow the instructions to install JRE 1.4.
- 3 Restart your system for the changes to take effect.

The Java components needed to run the Java-based features in Lasso Professional Server are now installed. The Java-based features of Lasso Professional Server can be set up, enabled, and tested within Lasso Administration. See *Chapter 6: Setting Global Preferences > Java* for more information.

Installing Lasso Professional Server

Use the Lasso Professional Server Installer to ensure that all of the Lasso Professional Server files are installed in the proper location. The following procedure assumes IIS will be used as the Web server.

- 1 From the installation CD or the electronic download, double-click the Lasso Pro 8 Installer.msi application. This launches the Lasso Professional Server Setup window.
- 2 Select Next. This will display the license agreement.
- 3 After reading and agreeing to the terms, select the I accept the license agreement radio button, and select Next. This will display the Lasso Professional Server Release Notes. The release notes contain important late-breaking information that might not be covered in the documentation.
- 4 After reading the release notes, select Next.
- 5 Select the drive and destination folder to which Lasso Professional Server will be installed. This is C:\Program Files\OmniPilot Software\Lasso Professional 8\ by default. To ensure all features in Lasso Professional Server to work properly, it is strongly recommended that the names of the \Program Files\OmniPilot Software\Lasso Professional 8\ folders not be changed.
- 6 Select Next.
- 7 A message will be displayed stating that Lasso Professional Server is ready to be installed. Select the Back button to check or modify any of the previous steps. Select Next to install Lasso Professional Server.
- 8 Select Finish when the installer has completed. Lasso Service and Lasso MySQL will automatically start after the installer has finished.

After Lasso Service has started, a Web browser window will automatically open to the Lasso Initialization page, which is described in the next section.

Initialize Lasso Professional Server

- 1 Enter the Lasso Professional Server serial number in the Serial Number field. This must be entered exactly as it appears in your OmniPilot invoice using the following format:
LP8-WIN-123456789

Serial numbers are case-sensitive. Make sure that all capitalization is correct and that all letters and numbers are entered, including the LP7 prefix.
- 2 Enter an administrator username in the Administrator Username field. This username will be used by the Lasso Professional Server global administrator to log in to the administration interface.
- 3 Enter an administrator password in the Administrator Password field. This password will be used by the Lasso Professional Server global administrator with the administrator username to login to the administration interface.
- 4 Re-enter an administrator password in the Confirm Password field.
- 5 Select Submit Information.
- 6 The following screen allows the site administrator username and password for the default site to be established and for the default SMTP preferences to be established.
- 7 On the following screen select Open Server Administration to launch Server Administration. You will be prompted for the administrator username which was just established.

Import Settings

This step only needs to be performed if you exported settings using the Lasso Settings Migrator from a prior version of Lasso.

- 1 Open the default Site Administration interface at the following URL.
`http://localhost/siteadmin.lassoapp`
- 2 Visit the *Setup > Site > Import/Export* section of Site Administration. Select the file that you exported and select the Import Settings... button. It should have a name like `Export_YYYYMMDDHHMMSS.txt`.
- 3 Browse through the data sources and users and groups on the server to make sure that the settings import was successful.

Continue on to the next chapter of this guide for an introduction to Lasso Administration, Database Browser, and Lasso Reference.

Startup Items and Third-Party Modules

The upgrade procedure does not automatically copy any items that have been added to your Lasso installation. This section briefly documents the folders that you should check to see if there are any items that need to be copied into your Lasso 8 installation.

Note: It is a good idea to check with the developer of any third-party modules or startup items to see if they have a new version for Lasso 8.

- **LassoStartup** – This folder contains Lasso pages and LassoApps that are run when Lasso starts up. Any items other than `Startup.LassoApp` and `LassoStudio.LassoApp` can be copied to the corresponding folder in your Lasso 8 installation.
- **LassoModules** – This folder contains data source and tag modules. Any third-party modules can be copied into the corresponding folder in your Lasso 8 installation. Note that some items that were formerly placed in `LassoModules` are now found in `JDBCDrivers` or `JavaModules`. Also, some modules like `EmailCAPIDataSource` are no longer needed.
- **JDBCDrivers** – This folder contains JDBC drivers. Any drivers in this folder can be copied into the corresponding folder in your Lasso 8 installation.
- **JavaLibraries** – This folder contains support libraries for JDBC drivers or Java-based tag or data source modules. Any libraries in this folder can be copied into the corresponding folder in your Lasso 8 installation.

The folder structure for Lasso has changed with each release so your installation may not have all the folders which are listed above.

Linux

Installation on Linux requires the following steps. Each step is documented fully on the following pages.

- Download and decompress the Lasso Professional Server installer for Linux.
- If upgrading from a previous version of Lasso, export the previous installation of Lasso's settings using the Lasso Settings Migrator. This must be done before you install the new version of Lasso Professional Server.

- Check the RPM requirements for Lasso and make sure all required packages are installed.
- Install ImageMagick and the Java Runtime Environment (JRE).
- Install Lasso Professional Server using the provided RPMs.
- Initialize Lasso Professional Server in your Web browser.
- If upgrading from a previous version of Lasso, import Lasso's settings into the default site.
- If upgrading from a previous version of Lasso, copy or get updates to any startup items, and third-party data source modules or tag modules.

Note: If you are upgrading from a previous version of Lasso your settings databases will **not** be automatically copied into your Lasso 8 installation.

Exporting Settings

Important: These steps must be performed before the new version of Lasso Professional Server is installed.

- 1 Open the Lasso Settings Migrator folder in the downloaded installer. Copy the LassoSettingsMigrator folder into the Web server root. Access it through a Web browser at the appropriate URL.

`http://localhost/LassoSettingsMigrator/default.lasso`

- 2 Select the Export tab and the Export... button. A file will be saved to your default download location with the name Export_YYYYMMDDHHMMSS.txt.

Note: The settings export file contains data source and user passwords so should be treated as sensitive data.

Checking Requirements

Several packages are required in Red Hat Enterprise Linux 4 for all features in Lasso Professional Server to function. Many of these packages should be installed with server installations of Red Hat Enterprise Linux 4 by default.

To view a list of packages that are required by the Lasso Professional Server installer, execute the following command in the terminal. The following command assumes you are currently in the same folder as the Lasso Professional Server installer.

```
rpm -qpR Lasso-Service-8.0.4-1.i386.rpm
```

If a package requirement is not met, then the Lasso-Service-8.0.4-1.i386.rpm file will indicate the packages that are missing upon installation. These packages may be installed from the Red Hat Enterprise Linux 4 installation

CDs, or may be downloaded from URLs indicated in the Lasso Professional 8 Setup Guide or the release notes.

Installing Java

This section discusses installing Sun's Java Runtime Environment (JRE) 1.4.1 for Red Hat Linux. JRE 1.4.1 is required to successfully use the Javabased features available in Lasso Professional Server. These include LJAPI modules, JDBC data source connectivity, and LDML tags which are dependent upon Java. For details on which LDML tags are dependent upon Java, see the LDML 7 Reference. It is unnecessary to install Java if these features will not be used.

To install JRE 1.4:

1 Download Sun's JRE installer for Linux at the following URL:

<http://java.sun.com/j2se/1.4.1/download.html>

2 Follow the instructions at the following URL to install JRE 1.4.1:

<http://java.sun.com/j2se/1.4.1/jre/install.html>

The Java components needed to run the Java-based features in Lasso Professional Server are now installed. The Java-based features of Lasso Professional Server can be set up, enabled, and tested within Lasso Administration. See Chapter 7: Setting Global Preferences > Java for more information.

Alternate JRE Versions

If a different version of the Java Runtime Environment is installed other than 1.4.1, it is possible to port this version to Lasso by creating a j2re1.4.1 symlink to the current version.

To port a different JRE version to Lasso Professional Server:

Execute the command below in the console. Replace <version> with the JRE version folder currently installed.

```
ln -s /usr/java/j2re<version> /usr/java/j2re1.4.1
```

Certification Note: While versions of Java other than JRE 1.4.1 may work with Lasso Professional Server, not all can be officially supported.

Installing ImageMagick

ImageMagick can be downloaded direct from the following Web site.

<http://www.imagemagick.org/download/linux/fedora/i386/>

The latest RPM package for version 6.2.0 or higher should be downloaded. The package will have a name like that shown below.

```
ImageMagick-6.N.N-N.i386.rpm
```

The package can be installed by logging in as the root user and then issuing the rpm install command as follows. The command below is for the current version of the RPM as of this writing. The actual RPM name may vary.

```
su -
rpm -ivh ImageMagick-6.2.0-8.i386.rpm
```

Installing Lasso Professional Server

The Lasso Professional Server installer for Red Hat Linux is distributed as three RPM files. These must be installed from the Red Hat Linux command line or console application.

- **Lasso-Service-8.0.4-1.i386.rpm** – This package will install the Lasso Service and Modules as all support files for Lasso Professional Server 8. This does not install the Web Server connector or the documentation for Lasso Professional Server.
- **Lasso-Documentation-8.0.4-1.i386.rpm** – This package will install the documentation and source files for LassoApps and Modules.
- **Lasso-Apache2Connector-8.0.4-1.i386.rpm** – This package will install the appropriate files and configure Apache 2 to connect to Lasso Professional Server 8.

The RPMs will install all required files for Lasso Professional Server, and will automatically start Lasso Service, Lasso MySQL, and Apache upon completion.

To install Lasso Professional Server:

- 1 Copy the three Lasso rpm files (Lasso-Service-8.0.4-1.i386.rpm, LassoDocumentation-8.0.4-1.i386.rpm, Lasso-Apache2Connector-8.0.4-1.i386.rpm) to the Red Hat Linux hard drive into the same folder. These files are unpacked from the Lasso_Pro_8_Linux.tar.gz archive along with the release notes.
 - 2 Log in as the root user of the Red Hat Linux machine. This is done by entering su in the command prompt, then entering the root password. The hyphen loads the environment for the root user in the resulting shell.
- ```
su -
```

**3** Install the Lasso packages. This can be accomplished using the following shortcut or with individual commands for each RPM file.

- Enter the following command to install all three packages for Lasso Professional Server. The `rpm` command is called with the `-i` command to perform an install, the `-v` command for verbose feedback, and `-h` command to display a progress indicator.

```
rpm -ivh Lasso*.rpm
```

- Enter the following commands to install each package for Lasso Professional Server. The `rpm` command is called with the `-i` command to perform an install, the `-v` command for verbose feedback, and `-h` command to display a progress indicator.

```
rpm -ivh Lasso-Service-8.0.4-1.i386.rpm
```

```
rpm -ivh Lasso-Documentation-8.0.4-1.i386.rpm
```

```
rpm -ivh Lasso-Apache2Connector-8.0.4-1.i386.rpm
```

After Lasso Professional Server is installed and Lasso Service is successfully started, a message will appear with a URL address for initializing Lasso Professional Server in a Web browser. This is described in the next section.

## Initialize Lasso Professional Server

The Lasso initialization page can be accessed at the following URL on your server.

```
http://localhost/ServerAdmin.LassoApp
```

- 1** Enter the Lasso Professional Server serial number in the Serial Number field. This must be entered exactly as it appears in your OmniPilot invoice using the following format:

```
LP8-MAC-123456789
```

Serial numbers are case-sensitive. Make sure that all capitalization is correct and that all letters and numbers are entered, including the LP8 prefix.

- 2** Enter an administrator username in the Administrator Username field. This username will be used by the Lasso Professional Server global administrator to log in to the administration interface.
- 3** Enter a server administrator password in the Administrator Password field. This password will be used by the Lasso Professional Server global administrator with the administrator username to login to the administration interface.
- 4** Re-enter an administrator password in the Confirm Password field.
- 5** Select Submit Information.

- 6 The following screen allows the site administrator username and password for the default site to be established and for the default SMTP preferences to be established.
- 7 On the following screen select Open Server Administration to launch Server Administration. You will be prompted for the administrator username which was just established.

## Import Settings

This step only needs to be performed if you exported settings using the Lasso Settings Migrator from a prior version of Lasso.

- 1 Open the default Site Administration interface at the following URL.  
`http://localhost/siteadmin.lassoapp`
- 2 Visit the *Setup > Site > Import/Export* section of Site Administration. Select the file that you exported and select the Import Settings... button. It should have a name like `Export_YYYYMMDDHHMMSS.txt`.
- 3 Browse through the data sources and users and groups on the server to make sure that the settings import was successful.

Continue on to the next chapter of this guide for an introduction to Lasso Administration, Database Browser, and Lasso Reference.

## Startup Items and Third-Party Modules

The upgrade procedure does not automatically copy any items that have been added to your Lasso installation. This section briefly documents the folders that you should check to see if there are any items that need to be copied into your Lasso 8 installation.

**Note:** It is a good idea to check with the developer of any third-party modules or startup items to see if they have a new version for Lasso 8.

- **LassoStartup** – This folder contains Lasso pages and LassoApps that are run when Lasso starts up. Any items other than `Startup.LassoApp` and `LassoStudio.LassoApp` can be copied to the corresponding folder in your Lasso 8 installation.
- **LassoModules** – This folder contains data source and tag modules. Any third-party modules can be copied into the corresponding folder in your Lasso 8 installation. Note that some items that were formerly placed in `LassoModules` are now found in `JDBCDrivers` or `JavaModules`. Also, some modules like `EmailCAPIDataSource` are no longer needed.

- **JDBCDrivers** – This folder contains JDBC drivers. Any drivers in this folder can be copied into the corresponding folder in your Lasso 8 installation.
- **JavaLibraries** – This folder contains support libraries for JDBC drivers or Java-based tag or data source modules. Any libraries in this folder can be copied into the corresponding folder in your Lasso 8 installation.

The folder structure for Lasso has changed with each release so your installation may not have all the folders which are listed above.

## 3

## Chapter 3

# Configuring Lasso Professional Server

This chapter includes instructions for how to install and configure Lasso Professional Server. The instructions in this chapter apply to both Mac OS X and Windows platforms. Platform differences are noted when required.

## Server Administration

Lasso Professional server has a multi-site architecture. The settings and preferences for the server as a whole are established using Server Administration. The settings and preferences for each individual site are established using Site Administration.

Server Administration can be accessed at the following URL. You will need the server administrator username and password that you established in the initialization of Lasso Professional server in order to access this application.

`http://localhost/serveradmin.lassoapp`

A basic installation of Lasso Professional Server does not require any settings within Server Administration to be modified. This section only documents a few of the sections that are of general interest. Consult the documentation in the Setup Guide for information about each of the sections of Server Administration.

## Serial Numbers

The serial number for Lasso Professional Server is set in Server Administration in the *Setup > Server > Admin* section. If you initialized Lasso with an evaluation serial number, the full serial number can be entered here after your purchase a license.

## Software Update

The *Setup > Server > Updates* section of Server Administration allows you to check for updates to Lasso Professional Server. Whenever a new version of Lasso is released it will show up in this section including a download link and description of what's been fixed in the update.

## Support

The *Support* section of Server Administration contains links to Site Administration for each of the sites that have been created as well as links to support resources and the Lasso Reference.

## Site Administration

Site Administration allows all of the preferences, data source settings, and security permissions of a site to be established. It also provides access to a SQL browser, email queue, scheduled event queue, error database, and more.

Site Administration can be accessed at the following URL. You will need the site administrator username and password that you established in the initialization of Lasso Professional server in order to access this application.

`http://localhost/siteadmin.lassoapp`

Site Administration includes the current site ID and name in the title of the Web browser and at the bottom of each page. Initially, only one site is defined so these will indicate the Default site with ID 1.

## Setup

The *Setup > Site* section of Site Administration allows basic site preferences to be established including whether Classic Lasso actions should be allowed, how errors should be reported, what browser authentication method should be used, recursion and time limits for format files, session settings, allowed file format extensions, and more.

## Data Sources

The *Setup > Data Sources* section of Site Administration is where new data source hosts can be added for any of the supported connectors. This section includes panels for modifying connectors, hosts, databases, tables, and fields.



## Security

The *Setup > Security* section allows users and groups to be maintained. All permissions to access data sources, tags, or files are granted to groups. Each user can belong to as many groups as required in order to be granted the permissions required.

## SQL Browser

The *Utility > SQL* section includes the SQL browser which allows SQL statements to be issued to either the internal SQLite data source or to an external installation of MySQL.

## Email

The *Utility > Email* section allows the email queue to be inspected, email preferences to be modified, and email messages to be sent through the default SMTP host.

## Events

The *Utility > Events* section allows the current queue of scheduled events to be inspected and new events to be scheduled. All scheduled events in Lasso are URLs that are triggered either at a specific time or at intervals.

## Errors

The *Utility > Errors* section allows the errors databases to be inspected. This database includes a record of errors that have occurred since Lasso was started. By default only critical errors are stored in the databases, but the error level routing can be changed in this section to log additional errors as needed.

## Support

The *Support* section of Site Administration contains links to the Database Browser and Lasso Reference as well as links to support resources and the Lasso Reference.

## Database Browser

The Database Browser provides a simple way to access data in any Lasso-compatible data source. Database records can be searched, added, updated, deleted, or imported and exported. In addition, SQLite and MySQL data sources can be modified by creating new databases, tables, fields, and indices.

The Database Browser can be accessed at the following URL. You will need the site administrator username and password that you established in the initialization of Lasso Professional server in order to access this application.

`http://localhost/databasebrowser.lassoapp`

### Browse

The **Browse** section allows data in any Lasso-compatible data source to be searched and for records to be added, updated or deleted. Select the desired the data source on the **Settings** page then visit any of the other tabs to perform the desired action.

### Build

The **Build** section allows the schema of SQLite or MySQL databases and tables to be modified. It also allows databases to be duplicated and tables of any Lasso-compatible data source to be imported into a SQLite or MySQL data source.

## Lasso Reference

The Lasso Reference provides documentation of all of the tags in Lasso, the language of Lasso Professional Server. The Lasso Reference allows tags to be searched for and detail for each tag to be viewed including parameters, syntax example, extended examples, and related tags. Tags can also be browsed by category.

OmniPilot hosts an online version of the Lasso Reference at the following address.

`http://dml.omnipilot.com/`

The Lasso Reference can be accessed locally at the following URL. You will need the site administrator username and password that you established in

the initialization of Lasso Professional server in order to access this application.

`http://localhost/ldmlreference.lassoapp`

# 4

## Chapter 4

# Getting Started

This chapter includes instructions for creating an Lasso page which will be served dynamically by Lasso Professional Server. For this chapter you will need a text editor such as TextEdit, NotePad, BBEdit, HomeSite, emacs, pico, etc.

## Web Server Root

Lasso pages are served from your Web server root just like plain HTML files and images. In order to create an Lasso page for Lasso to serve it needs to be placed in your Web server root.

The default location for your Web server root depends on what platform and Web server you are using. The most common locations are listed here.

Mac OS X (Apache) - /Library/WebServer/Documents/

Mac OS X (WebSTAR V) - /Applications/4DWebSTAR/WebServer/DefaultSite/

Windows - C:\inetpub\wwwroot\

If you have configured virtual hosts in your Web server then the location of the Web server root will depend on those settings.

## Lasso Page

Create a text file in your text editor named `start.lasso` and save it into your Web server root. Include only the following text within it.

```
[String: 'Hello World']
```

This is a very simple Lasso tag that outputs the string Hello World.

Now, load the following URL through your Web browser on the same machine that Lasso was installed on.

```
http://localhost/start.lasso
```

If you have configured virtual hosts in your Web server then you will need to access the page through a URL appropriate to the virtual host which you placed the file in.

The result in your Web browser should be simply the words Hello World without the square brackets or [String] tag. This means that Lasso processed the page, executing the simple Lasso command to output a string, and returned the proper results.

→ Hello World

If you see anything other than this output then something has gone wrong.

- If you get a File Not Found error from your Web server then double check to make sure that you have placed the start.lasso file in your Web server root.

Some Web servers are case sensitive. Make sure that you type the name of the file in the same case as the file name on disk.

- If you get a Server Not Found error make sure that you typed the URL exactly as it appears above. It should not be `www.localhost.com`, but simply `localhost` as the server name. You might also try this alternate URL.

`http://127.0.0.1/start.lasso`

If your Web server has virtual hosts configured you will need to use the appropriate host name to access your server.

Now, this simple page can be expanded by adding any of the tags from the Lasso Reference. Here are some example tags to get you started. Each includes a brief description of what it does, the expected result, and some related tags to explorer.

## Date Tags

The [Date] tag outputs the current date and time to the current page in United States format with 24-hour time.

[Date]

→ 12/2/2004 11:34:50

Different parts of the date can be output using the various date member tags. Other tags include [Date->Hour], [Date->Minute], [Date->Second], and [Date->DayOfWeek], [Date->DayOfYear], and more.

[Date->Year] - [Date->Month] - [Date->Day]

→ 2004 - 12 - 2

## Client Tags

Lasso has a collection of tags that provide information about the current Web client. [Client\_IP] returns the IP address of the current visitor. [Client\_Type] returns their browser type.

[Client\_IP] - [Client\_Type]

→ 192.168.0.1 - Mozilla/5.0 (Macintosh; U; PPC Mac OS X; en) AppleWebKit/125.5.5 (KHTML, like Gecko) Safari/125.11

## Math Calculations

Lasso can perform math calculations simply by writing them out within square brackets. The standard math symbols include + - \* / and % for modulus. The result will be an integer if all the parameters are integers or a decimal if any parameter is a decimal.

[1 + 2 - (3 \* 4) / 5.0]

→ 0.6

[24 \* 60 \* 60]

→ 86400

## String Calculations

Lasso can perform many string calculations. The + - \* symbols can be used to manipulate strings. There are also a great many string member tags. Here are some examples.

[('Omni' + 'Pilot ') \* 4]

→ OmniPilot OmniPilot OmniPilot OmniPilot

[String\_UpperCase('Omni' + 'Pilot ')]

→ OMNIPILOT

[String\_ReplaceRegExp('OmniPilot', -Find='[a-z]', -Replace='\*')]

→ O\*\*\*P\*\*\*\*

## Database Search

Lasso can perform a database search using the [Inline] ... [Inline] tags. This example searches the included LDML8\_Reference database for tags that contain the string math. Only partial results are shown here, but in your page you should get the complete listing of [Math...] tags in the reference.

This example uses `<?LassoScript ... ?>` delimiters to embed an entire multi-line LassoScript in the page rather than individual tags in square brackets.

```
<?LassoScript
Auth_Admin;
Inline: -Search,
 -Database='LDML8_Reference',
 -Table='Tags',
 -Op='cn', 'tag_name'='math';
Records;
 Field: 'tag_name'; '
';
/Records;
/Inline;
?>
→ [Math_Abs]
 [Math_Add]
 [Math_Ceiling]
...
```

**Note:** The `[Auth_Admin]` tag ensures that you have Site Administrator authorization on the page. The Site Administrator can perform any database actions without configuring security.

## What's Next?

Now that you have created a sample Lasso page and executed it through the Web browser you can explore all the options that are available in Lasso.

The Lasso Reference includes a complete listing of all the tags that are available in Lasso. The online version of the reference can be visited at this address. By browsing the tag categories and viewing the related tags you can get an idea of what tags are available.

<http://ldml.omnipilot.com/>

The Lasso 8 Language Guide is the primary reference guide for Lasso. It includes sections on database actions, programming topics, data types, common protocols, and even information about creating new custom tags, data types, and data source connectors. The Lasso 8 Language Guide can be found in the Documentation folder in every installation of Lasso Professional Server 8.