LassoSoft

Lasso 8.5
Getting Started

Contents

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Chapter 1
Introduction

This guide provides instructions for how to install, configure, and get started with Lasso Professional Server. This guide can be printed out and consulted while you are installing and configuring Lasso.

- *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 8.5 Language Guide. These guides can be found in the documentation folder within the Lasso Professional 8 application folder after Lasso has been installed or can be downloaded from the following URL. This guide provides documentation of the most common installation configurations. For details about custom installation and configuration options, please consult the Setup Guide.

http://www.lassosoft.com/Documentation/

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, Oracle, PostgreSQL, Microsoft SQL Server, ODBC or JDBC, and FileMaker Pro or Server Advanced. 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.

Lasso Professional Server can be installed without a serial number and will run in developer mode. Developer mode includes all of the functionality of Lasso, but will only serve pages to the first five clients which connect and has a per-minute limit on the number of connections it will serve. Developer mode allows you to develop sites using Lasso and to demonstrate those sites to colleagues or clients without purchasing Lasso.

A serial number is required in order to deploy a site with Lasso. See the LassoSoft store for more information.

http://store.lassosoft.com/

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 establishing a server administrator username and password and entering your serial number if you have one.
- 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 8.5 Setup Guide** – This is the first guide to the Lasso 8.5 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 8.5 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. The "Fundamentals" chapters within this guide provide overviews of Web application server technology, data source interactions, and programming.
- **Lasso 8.5 Reference** – Provides detailed documentation of each tag in Lasso 8.5. This is the definitive reference to the language of Lasso 8.5. Provided as a LassoApp installed with Lasso, and is also available as an online resource from the LassoSoft Web site.

    http://reference.lassosoft.com/

Comments, suggestions, or corrections to the documentation are appreciated and may be sent to

documentation@lassosoft.com.

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Chapter 2
Installing Lasso Professional Server

This chapter includes instructions for how to install Lasso Professional Server. Consult the system require-
ments 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 computer with Intel, or PowerPC G5, G4, or G3 processor.

• 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 10.5, 10.4 or 10.3.9 or Mac OS X Server 10.5, 10.4 or 10.3.9 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 the latest version of WebSTAR V.

• X11 for Mac OS X must be installed for the [Image] tags in Lasso Professional Server to function. For
information on obtaining and installing X11, see the Mac OS X install DVD or Apple's Web site.

    http://www.apple.com/

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.

• 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 Lasso tags which are dependent upon Java. For details on which Lasso tags
are dependent upon Java, see the Lasso 8.5 Reference. For more information on LJAPI, see the Lasso 8.5
Language Guide.

Note: ImageMagick is automatically installed with Lasso Professional 8.5.2 and higher.

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) 6 for Red Hat Linux is required for Java-based tags and JDBC data sources to function. Installation instructions are included below.

Note: ImageMagick is automatically installed with Lasso Professional 8.5.2 and higher.

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 version of Lasso 7 or earlier, 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 installed from the Mac OS X install DVD.
- Install Lasso Professional Server using the provided installer.
- Initialize Lasso Professional Server in your Web browser.
- If upgrading from a version of Lasso 7 or earlier, import Lasso's settings into the default site.
- If upgrading from a version of Lasso 7 or earlier, copy or get updates to any startup items, and third-party data source modules or tag modules.

Note: If you are upgrading from a version of Lasso 7 or earlier your settings databases will **not** be automatically copied into your Lasso 8.5 installation.

Exporting Settings From Lasso 7 or Earlier

Important: These steps must be performed before the new version of Lasso Professional 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 (X Window System version 11) 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 can be optionally installed as part of Mac OS X 10.4/10.5. It is recommended that X11 be installed prior to installing Lasso Professional Server. If X11 is not installed, errors will be logged to Lasso's error log whenever Lasso Service is started and errors will be returned whenever the [Image] tags are used.

To install X11 for Mac OS X:

- Mac OS X 10.4/10.5 users should install X11 from the installation DVD.

- Mac OS X 10.3.9 users can download the X11 installer from Apple's Web site:

  http://www.apple.com/

  Double-click the X11 installer application, and then follow the instructions to install X11.

Installing Lasso Professional Server

1 Double-click the Lasso Pro 8.5 Installer.mpkg application. This launches the Lasso Professional Server window.

2 The Lasso Professional Server release notes will be displayed. The release notes contain important late breaking information that might not be covered in the documentation. After reading the release notes which describe what is included with Lasso Professional Server, select Continue.

3 The Lasso Professional Server License Agreement will be displayed. After reading and agreeing to the terms, select the Continue and then the Agree button.

4 Select the drive you wish to install Lasso Professional Server on. This should be the drive that Mac OS X or Mac OS X Server is installed on. Then select Continue.

5 The next steps depends on which of the supported Web servers is being used.

   Most users will want to simply select the Install or Upgrade button. This will install the connector for the default version of Apache included with Mac OS X 10.5 or Mac OS X Server 10.5, Mac OS X 10.4, or Mac OS X 10.3.9.

   Users with Mac OS X Server 10.4, Mac OS X Server 10.3.9, or with one of the other supported Apache 2 installations or WebSTAR V should select the Customize button. Deselect Lasso Connector for Apache and select the appropriate Web server connector (see above for descriptions). Finally, select the Install or Upgrade button.

6 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.

7 Select Quit when the installer has completed. Upon quit the installer automatically restarts the Apache 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 If you have one, enter the Lasso Professional Server serial number in the Serial Number field. This must be entered exactly as it appears in your LassoSoft invoice or email using the following format:

   LP8.5-MAC-123456789

   Serial numbers are case-sensitive. Make sure that all capitalization is correct and that all letters and numbers are entered, including the LP8.5 prefix.

2 Enter your desired server administrator username in the Administrator Username field. This username will be used by the Lasso server administrator to log in to the administration interface, as discussed in the *Using Server Administration* chapter.

   Note: The server administrator username and password in Server Administration are independent of Mac OS X administrator usernames and passwords, and do not have to match.

3 Enter your desired server administrator password in the Administrator Password field and re-enter the server administrator password in the Confirm Password field.

4 Select Submit Information to continue.

After the initialization information has been successfully submitted, an Initialization Complete panel is displayed stating that Lasso Professional Server has been successfully initialized.

Selecting the Open Server Administration button will open Server Administration, where server preferences can be established. Server Administration also provides access to the Site Administration interface for the default site.

Import Settings From Lasso 7 or Earlier

This step only needs to be performed if you exported settings using the Lasso Settings Migrator from a version of Lasso 7 or earlier.

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 8.5 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 8.5.

- **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 8.5 installation.

- **LassoModules** – This folder contains data source and tag modules. Any third-party modules can be copied into the corresponding folder in your Lasso 8.5 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 8.5 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 8.5 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 version of Lasso 7 or earlier, 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 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 version of Lasso 7 or earlier, import Lasso's settings into the default site.
- If upgrading from a version of Lasso 7 or earlier, copy or get updates to any startup items, and third-party data source modules or tag modules.

Note: If you are upgrading from a version of Lasso 7 or earlier your settings databases will **not** be automatically copied into your Lasso 8.5 installation.

Exporting Settings From Lasso 7 or Earlier

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 Java

This section discusses installing Sun's Java Runtime Environment (JRE) 6. This installation 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 8.5 Reference. It is unnecessary to install Java if these features will not be used.

To install JRE 6:

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

http://java.sun.com/javase/downloads/index.jsp

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

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 Site Administration. See the *Setting Site Preferences* chapter *Java* section for more information.

Installing Lasso Professional Server

Upgrading Note: A previous installation of Lasso Professional 8 or 8.5 must be removed prior to installing the new version. Use the Remove option in the installer to remove the previous installation then re-run the installer to install the new version. No databases or settings files will be removed by this procedure.

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 8.5 Installer.msi application. This launches the Lasso Professional Server Setup window.

2 You must agree to the license agreement before installing Lasso. The release notes screen includes some late-breaking information that may not be contained in the documentation.

3 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 these folders not be changed. Select Next.

4 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.

5 Select Finish when the installer has completed.

Lasso Service will automatically start after the installer has finished and a Web browser window will automatically open to the Lasso Initialization page, which is described in the next section.

Windows Server 2003 Configuration

Windows Server 2003 requires additional configuration of IIS 6. Lasso must be explicitly allowed in the Web Service Extensions configuration in order for IIS to serve .lasso or .lassoapp files.

1 Open the Internet Information Services (IIS) Manager.

2 Expand the local computer item and select Web Service Extensions.

3 Select Add a new Web service extension... from the tasks list or the Action menu.

4 Type Lasso Professional for the Extension Name. Click the Add... button and locate the file at the path below; Check the Set extension status to Allowed checkbox. Click OK to continue.

   C:\\WINDOWS\system32\Lasso8ConnectorforIIS.dll

5 A new item Lasso Professional with status Allowed is created.

Additional Configuration

These additional steps are necessary to finish configuring IIS.

1 Get Properties on the WebSites folder in the Internet Information Services (IIS) Manager. Under the ISAPI Filters, make sure there is a LassoFilter and its priority is High.

2 On the Home Directory tab under Configuration, make sure that both .lasso and .LassoApp are listed. Make sure that both Extensions point to the C:\WINDOWS\system32\Lasso8ConnectorforIIS.dll. For the .LassoApp extension, make sure that the Check that File Exists box is **not** checked.

3 Repeat the instructions in step 2 for the Home Directory of the Default Site as well.

Note: Setting the option All Unknown ISAPI Extensions to Allow will also allow Lasso processed Web pages to be served by IIS, but is not recommended since it essentially defeats the Web Service Extensions security feature offered by IIS 6.

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 LassoSoft invoice or email using the following format:

   LP8.5-WIN-123456789

   Serial numbers are case-sensitive. Make sure that all capitalization is correct and that all letters and numbers are entered, including the LP8.5 prefix.

2 Enter your desired server administrator username in the Administrator Username field. This username will be used by the Lasso server administrator to log in to the administration interface, as discussed in the *Using Server Administration* chapter.

   Note: The server administrator username and password in Server Administration are independent of Mac OS X administrator usernames and passwords, and do not have to match.

3 Enter your desired server administrator password in the Administrator Password field and re-enter the server administrator password in the Confirm Password field.

4 Select Submit Information to continue.

After the initialization information has been successfully submitted, an Initialization Complete panel is displayed stating that Lasso Professional Server has been successfully initialized.

Selecting the Open Server Administration button will open Server Administration, where server preferences can be established. Server Administration also provides access to the Site Administration interface for the default site.

Import Settings From Lasso 7 or Earlier

This step only needs to be performed if you exported settings using the Lasso Settings Migrator from a version of Lasso 7 or earlier.

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 8.5 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 8.5.

• **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 8.5 installation.

• **LassoModules** – This folder contains data source and tag modules. Any third-party modules can be copied into the corresponding folder in your Lasso 8.5 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 8.5 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 8.5 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 version of Lasso 7 or earlier, 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 Lasso Professional Server using the provided RPMs.

- Initialize Lasso Professional Server in your Web browser.
- If upgrading from a version of Lasso 7 or earlier, import Lasso's settings into the default site.
- If upgrading from a version of Lasso 7 or earlier, copy or get updates to any startup items, and third-party data source modules or tag modules.

Note: If you are upgrading from a version of Lasso 7 or earlier your settings databases will **not** be automatically copied into your Lasso 8.5 installation.

Exporting Settings From Lasso 7 or Earlier

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. The required packages are summarized in the following table.

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-8.5.1-1.i386.rpm

If a package requirement is not met, then the Lasso-Service-8.5.1-1.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 release notes.

Installing Java

This section discusses installing Sun's Java Runtime Environment (JRE) 6 for Red Hat Linux. JRE 6 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 8.5 Reference. It is not necessary to install Java if these features will not be used.

To install JRE 6:

1 Download Sun's JRE installer for Linux at the following URL. Download the "Linux RPM in self extracting file" e.g. jre-6-linux-i586-rpm.bin.

http://java.sun.com/javase/downloads/index.jsp

2 Use the following commands to decompress and install the RPM:

chmod a+x jre-6-linux-i586-rpm.bin
sudo ./jre-6-linux-i586-rpm.bin
sudo rpm -ivh jre-6-linux-i586-rpm.bin

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 the *Setting Site Preferences* chapter *Java* section for more information.

Alternate JRE Versions

Lasso will look in the following location for the latest installation of Java. If a different version of Java is installed then a symlink can be created to select what version of Java Lasso finds. Lasso expects to find libawt.so, libjava.so, and libverify.so in this directory and libjvm.so in a server subdirectory.

/usr/java/latest/lib/i386/

Certification Note: While versions of Java other than JRE 6 may work with Lasso Professional Server, not all can be officially supported.

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-8.5.1-1.i386.rpm** – This package will install the Lasso Service and Modules as all support files for Lasso Professional Server 8.5. This does not install the Web Server connector or the documentation for Lasso Professional Server.
- **Lasso-Documentation-8.5.1-1.i386.rpm** – This package will install the documentation and source files for LassoApps and Modules.
- **Lasso-Apache2Connector-8.5.1-1.i386.rpm** – This package will install the appropriate files and configure Apache 2 to connect to Lasso Professional Server 8.5.

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-8.5.1-1.i386.rpm, LassoDocumentation-8.5.1-1.i386.rpm, Lasso-Apache2Connector-8.5.1-1.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-8.5.1-1.i386.rpm
rpm -ivh Lasso-Documentation-8.5.1-1.i386.rpm
rpm -ivh Lasso-Apache2Connector-8.5.1-1.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 LassoSoft invoice using the following format:

LP8.5-LIN-123456789

Serial numbers are case-sensitive. Make sure that all capitalization is correct and that all letters and numbers are entered, including the LP8.5 prefix.

2 Enter your desired server administrator username in the Administrator Username field. This username will be used by the Lasso server administrator to log in to the administration interface, as discussed in the *Using Server Administration* chapter.

3 Enter your desired server administrator password in the Administrator Password field and re-enter the server administrator password in the Confirm Password field.

4 Select Submit Information to continue.

After the initialization information has been successfully submitted, an Initialization Complete panel is displayed stating that Lasso Professional Server has been successfully initialized.

Selecting the Open Server Administration button will open Server Administration, where server preferences can be established. Server Administration also provides access to the Site Administration interface for the default site.

Import Settings From Lasso 7 or Earlier

This step only needs to be performed if you exported settings using the Lasso Settings Migrator from a version of Lasso 7 or earlier.

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 8.5 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 8.5.

• **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 8.5 installation.

• **LassoModules** – This folder contains data source and tag modules. Any third-party modules can be copied into the corresponding folder in your Lasso 8.5 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 8.5 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 8.5 installation.

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

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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 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.

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

    http://reference.lassosoft.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/reference.lassoapp

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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, emacs, pico, etc.

Finding the 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.

Creating a 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 Helllo 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. Paste the following tags into the test page you created above and see if the output matches what is shown after the arrow.

[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

Additional date tags allow dates to be added, subtracted, or formatted in any method desired. See the Lasso 8.5 Language Guide or the Lasso Reference at the following URL for a complete list of date tags in Lasso.

http://reference.lassosoft.com/reference.lassoapp?Date

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. Paste the following tags into the test page you created above and see if the output matches what is shown after the arrow.

[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

Additional clients tags allow the current page request to be inspected including cookies, HTTP headers, POST and GET parameters, and more. See the Lasso 8.5 Language Guide or the Lasso Reference at the following URL for a complete list of client tags in Lasso.

http://reference.lassosoft.com/reference.lassoapp?Client

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. Paste the following expressions into the test page you created above and see if the output matches what is shown after the arrow.

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

➜ 0.6

[24 * 60 * 60]

➜ 86400

Additional math tags allow for advanced calculations including trigonometric function, square roots, and more. See the Lasso 8.5 Language Guide or the Lasso Reference at the following URL for a complete list of math tags in Lasso.

    http://reference.lassosoft.com/reference.lassoapp?Math

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. Paste the following tags into the test page you created above and see if the output matches what is shown after the arrow.

    [('Lasso' + 'Soft ') * 4]

➜ LassoSoft LassoSoft LassoSoft LassoSoft

    [String_UpperCase('Lasso' + 'Soft ')]

➜ LASSOSOFT

    [String_ReplaceRegExp('LassoSoft', -Find='[a-z]', -Replace='*')]

➜ L****S***

Additional strings tags allow for advanced regular expression operations, the manipulation of Unicode strings, character set conversions, and more. See the Lasso 8.5 Language Guide or the Lasso Reference at the following URL for a complete list of string tags in Lasso.

    http://reference.lassosoft.com/reference.lassoapp?String

Performing a Database Search

Lasso can perform a database search and present the results of that search in-line within the current page. The tag Lasso uses to trigger a search is thus called the [Inline] tag. The opening [Inline] tag contains the specification for the database search. The contents of the [Inline] ... [/Inline] tags is used to format the results of the search.

The following code shows a simple database search. The opening tag contains the action -Search, the database to search -Database='LDML8_Reference', the table within that database to search -Table='Tags', the number of records to return -MaxRecords='All', and the specification of the search query. The query has one term consisting of two parameters. The first parameters specifies that we want to do a contains search -Op='Cn' and the second parameter specifies that we want to find records where the field Tag_Name contains the sub-string math.

```
[Inline: -Search,
    -Database='LDML8_Reference',
    -Table='Tags',
    -MaxRecords='All',
    -Op='cn', 'Tag_Name'='math']
[/Inline]
```

In order to format the results of the search it is necessary to add tags to the inside of the [Inline] ... [/Inline] tags. In the following code the [Error_Msg] tag is used to report if an error occurred performing the search, the [Found_Count] tag is used to report how many records were found. The contents of the [Records] ... [/Records] tags are repeated for each record that is found by the query and the database field Tag_Name is output using the [Field: 'Tag_Name'] tag.

Finally, we need to tell Lasso to authorize the search of the data source. The [Auth_Admin] tag tells Lasso to request administration authorization from the current site visitor. If you have been browsing Lasso Site Administration then you are probably already authorized as an administrator, otherwise you will be prompted for a username and password by the browser and will need to enter either your site or server administrator credentials.

Paste the following tags into the test page you created above and see if the output matches what is shown after the arrow. Only the first several tags are shown below, but your output should have all 29 tags.

```
[Auth_Admin]

[Inline: -Search,
    -Database='LDML8_Reference',
    -Table='Tags',
    -MaxRecords='All',
    -Op='cn', 'Tag_Name'='math']

  Error Message: [Error_Msg]<br />
  Found [Found_Count] Records<br />
  [Records]
    [Field: 'tag_name']<br />
  [/Records]

[/Inline]
```

➜ Error Message: No Error
  Found 29 Records
  [Math_Abs]
  [Math_Add]
  [Math_Ceiling]
  ...

By modifying the query in the [Inline] above you can perform additional searches of the database and by outputting additional [Field] tags you can return more information about each record in the database. See the Lasso 8.5 Language Guide for more information about searches, operators, and other database actions.

Searching a FileMaker Server Advanced Database

This section demonstrates how you can access a database hosted on FileMaker 7/8 Server Advanced through Lasso. If you have not yet installed and configured FileMaker Server Advanced then you should follow the instructions in the Quick Start guide available from the following URL:

http://www.lassosoft.com/filemaker

In order to access your FileMaker Server you need the IP address or hostname of the machine hosting FileMaker Server and a username and password which will be used to access the databases. You will also need to know the name of the database you want to access and a layout within the database. Paste the following tags into your test page and replace the sample values (in all caps) with the actual values for the server and database you want to access. Do not change the connector name or port.

The contents of the inline will display the error message (if any), the found count, the field names from the selected layout, and the value from the first field on the layout. You can customize the inline by adding search terms, [Field] tags for specific fields within the [Records] ... [/Records] tags, etc.

```
[Inline: -Host=(Array:
        -Connector='FMServerAdvancedDataSource',
        -Name='HOSTNAME',
        -Port=80,
        -Username='USERNAME',
        -Password='PASSWORD'
    -Search,
    -Database='DATABASE',
    -Table='LAYOUT',
    -MaxRecords=10]

   Error Message: [Error_Msg]<br />
   Found [Found_Count] Records<br />
   Fields [Field_Names->(Join: ', ')]<br />
   [Records]
     [Field: (Field_Name: 1)]<br />
   [/Records]

[/Inline]
```

By modifying the query in the [Inline] above you can perform additional searches of the database and by outputting additional [Field] tags you can return more information about each record in the database. See the Lasso 8.5 Language Guide for more information about searches, operators, and other database actions.

Searching a MySQL Database

This section demonstrates how you can access a database hosted on MySQL 3 through 5 through Lasso. If you have not yet installed and configured MySQL then you should follow the instructions on the MySQL AB Web site:

http://dev.mysql.com/

In order to access your MySQL server you need the IP address or hostname of the machine hosting MySQL and a username and password which will be used to access the databases. You will also need to know the name of the database you want to access and a tables within the database. Paste the following tags into your test page and replace the sample values (in all caps) with the actual values for the server and database you want to access. Do not change the connector name or port.

The contents of the inline will display the error message (if any), the found count, the field names from the selected table, and the value from the first field in the table. You can customize the inline by adding search terms, [Field] tags for specific fields within the [Records] ... [/Records] tags, etc.

```
[Inline: -Host=(Array:
        -Connector='MySQLDS',
        -Name='HOSTNAME',
        -Port=3306,
        -Username='USERNAME',
        -Password='PASSWORD'
    -Search,
    -Database='DATABASE',
    -Table='LAYOUT',
    -MaxRecords=10]

   Error Message: [Error_Msg]<br />
   Found [Found_Count] Records<br />
   Fields [Field_Names->(Join: ', ')]<br />
   [Records]
     [Field: (Field_Name: 1)]<br />
   [/Records]

[/Inline]
```

Sending an Email Message

Lasso makes it easy to send an email message from a Web page. The following tag will send an email message to john@example.com from john@example.com. If you paste this code into your Lasso test page, modify the to and from email addresses to be your own, and visit the page through a Web browser then you should receive the email message in your inbox shortly.

```
[Email_Send: -To='John@example.com',
    -From='John@example.com',
    -Subject='A Test Message From Lasso',
    -Body='This test message was generated by Lasso at ' + Date]
```

If you do not receive the test email message within a few minutes then you should check the *Utility > Email* section of Lasso Site Administration to make sure that Lasso has been configured properly to send email. You can find additional information about configuring Lasso in the Lasso 8.5 Setup Guide.

```
http://localhost/SiteAdmin.LassoApp
```

Examples Pack

The Lasso Examples Pack is a set of easy-to-use example Web sites which demonstrate some of the capabilities of Lasso. Each example uses modern Web design practices including XHTML and CSS. Asynchronous JavaScript and XML are used to provide dynamic user interfaces. The examples include documentation and extensive commenting within each Lasso page.

The examples are included with the download for Lasso (where you found this guide) or can be downloaded from the LassoSoft Web site.

```
http://download.lassosoft.com/pub/ExamplesPack/ExamplesPack.zip
```

The examples include:

- **Message Board** – This example is for a standard message board application. Users are allowed to create new messages under a topic, or to reply to existing messages. It permits the administrator to create and delete various grouped forums, and within those forums, various discussion topics.
- **Collaborate** – The collaborate example is a Web site that several different editors can create together. The site is a collection of pages in categories. Each page can be edited by any visitor who is allowed.
- **Blog** – This Blog example shows how to create an online diary, or web log. Once authenticated, a user is permitted to create new entries for their personal blog. An entry consists of a time-stamp, a title and a message body. Other users are permitted to post comments relating to the entry.
- **Quick Poll** – The poll example allows a Web developer to place a poll on their home page. The poll can have a few questions with multiple choice or text answers. When the poll is submitted its results are shown in a pop-up window.

Installation

Copy the ExamplesPack folder into your Web server root. Access the examples by visiting the following URL (with localhost replaced by the Host name or DNS address of your server if necessary).

```
http://localhost/ExamplesPack/index.lasso
```

The documentation for each example is linked from the splash screen for the Examples Pack. We encourage you to open up the individual examples and examine the .lasso code to see how they were put together.

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://reference.lassosoft.com/

The Lasso 8.5 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 8.5 Language Guide can be found in the Documentation folder in every installation of Lasso Professional Server 8.5.