

Using LSSDB Setup

This program comes as multiple Python scripts packed in an archive file along with the LSSDB program also packed in an archive.

If you already have a work folder or some type of temporary folder, this will suffice, all contents can be deleted when the process is complete. If you do not have a folder to work in, created one. Import the tar file and unpack the all files. Leave the LssDatabase program inside its tar.gz file. You should have a total of ten files outside the tar file, seven python scripts, the tar.gz database file and two documents.

At the command line enter: **python LssDBsetup.py**

For Ubuntu systems enter: **sudo python LssDBsetup.py**

If your system does not have the python database connector, you will be prompted to load it. It must be installed before the rest of the program can operate. If you do not wish to load the connector, answer N or return and proceed to the portion of this document concerning manual installation.

The program will check for each component required and if a specific component is missing, you will be prompted to either load that component automatically or exit the program and install it manually. If you elect the manual option you must restart the program to continue checking for the remaining components.

The program will pause each time you answer Y to loading a component. This pause is caused by the apt-get, yum, or dnf command issued to the operating system. Please allow enough time for the load to complete. If the setup program appears to be stalled at any time you may use a control-C to exit and rerun the program. It will resume at the beginning and continue checking for installed components.

If your system already has the components installed, the setup program will run very quickly.

At the completion of the program you should follow the directions provided on the screen. If the results have scrolled off the screen, they may be viewed by opening the **lssdb_log.txt** file.

If you have created a prototype virtual host directive you must edit the directive to put in the name of the host website (your base website) and the name of the lssdb extension if you do not wish to use lssdb. After editing you must enable the virtual host directive if on a Debian system and restart the Apache server on all systems.

Success will be indicated by using a browser and entering the command <http://lssdb.yourwebsitename.com>.

If you are not successful, re-examine the screen output looking for yellow or red warnings or closely examine the log file for warnings. Your system administrator should be able to determine the problem from log information or examination of the system configuration files. Should it be necessary to contact USL to resolve a problem, the log file will be useful to have available.

Manually setting up LSSDB

The following instructions define what is required for proper installation of the LSSDB product.

While CentOS and Fedora are basically the same, Debian systems use different commands. Ubuntu systems do not have a root login so all commands must be preceded by the Super User directive **sudo**. To define each command the line will start with a C: for CentOS, F: for Fedora and D: for Debian. If only one command is shown it is good for all three systems

1. Check for MySQL. It is known as mysql and maria and is interchangeable in systems. Either database will suffice as long as the major revision number is 5 or higher.

find / -noleaf -type f -name mysql

find / -noleaf -type f -name mariadb

U: sudo -S find / -noleaf -type f -name mariadb

2. If mysql or maria does not exist, install the server with the following command:

C: sudo yum install mariadb-server

F: dnf install mariadb-server

D: apt-get install mysql-server

U: sudo apt-get install mysql-server

3. Determine the revision number of the database.

mysql -V

If you do not get a result for the command ensure the service is running. A revision level of 5.X or higher is sufficient.

4. Check for Apache2 or httpd.

C: find / -noleaf -type f -name httpd

F: find / -noleaf -type f -name httpd

D: find / -noleaf -type f -name apache2ctl

U: sudo find / -noleaf -type f -name apache2ctl

5. If Apache2 or httpd do not exist, install with the following command:

C: sudo yum install httpd

F: dnf install httpd

D: apt-get install apache2

U: sudo apt-get install apache2

6. Ensure the Apache service is running and retrieve the version.

C: httpd -v

F: httpd -v

D: apache2ctl -v

U: sudo apache2ctl -v

Version 2.2 to 2.4 have been tested. If you have less than 2.2 you might consider an update.

7. Retrieve the modules installed in Apache.

C: httpd -M

F: httpd -M

D: apache2ctl -M

U: sudo apache2ctl -M

The required modules are `rewrite_module` and `ssl_module` if you wish to do a secure site. The httpd versions usually already contain the `rewrite_module`. For Debian the module can be installed with the following command:

D: a2enmod rewrite

U:sudo a2enmod rewrite

8. Ensure that PHP5 is installed. On all systems use the following command:

php -i

In the results of the command look for "PHP Version => 5.X.X" and "MySQL Support => enabled".

9. If PHP or php-mysql are not present they may be added with the following commands:

C: sudo yum install php

C: sudo yum install php-mysql

F: dnf install php

F: dnf install php-mysql

D: apt-get install php

D: apt-get install php-mysql

U: sudo apt-get install php

U: sudo apt-get install php-mysql

10. Unpack the lssdb_default_YYMMDD.sql database from the gz release package.

11. Using either the PHPadmin webtool or MySQL create a user with the username **lssdb** having the password **lssdb**. Provide this user with all privileges.

12. With the same application import the lssdb_default_YYMMDD.sql database by executing it as a SQL command.

13. In the **/var/www** directory create the **lssdb** folder. You can create the lssdb folder in any other directory path that you want but remember its location for use later when defining the virtual host. Extract from the release gz all the folders and files in the LssDatabase folder in place them in the lssdb folder.

14. Locate the Apache conf file and open it in an editor. Search for the XML tag

<IfModule dir_module>. Inside the tag are the accepted index files for Apache. Ensure that index.php exists. If not, add the file name with a space delimiter. Type filenames look like:
index.html index.htm index.php. Save the conf file but do not exit the editor.

Towards the end of the file, the way the HTTP server accesses virtual host definitions is defined. Virtual Host definitions are defined as an "Include". On Apache2 installations the virtual hosts are usually defined as sites-enabled and the following statement is present:

```
# Include the virtual host configurations:
Include sites-enabled/
```

On httpd installations the virtual hosts are usually defined as conf files that are contained in the conf.d folder. The conf file usually contains the following statement:

```
# Load config files in the "/etc/httpd/conf.d" directory.
IncludeOptional conf.d/*.conf
```

Remember the method used by your server.

If your server uses the sites enabled method you must create a virtual host file in the **sites-available** folder and link the file to the **sites-enabled** folder. This file will have a name that matches your website name or extension. In this case 'lssdb'.

If your server uses the conf.d folder then you will create the virtual host file directly in the conf.d folder. And this file can have any name you like but must have a .conf extension. In this case 'lssdb.conf'

A typical virtual host definition file defines the name of the web site and the location of the files used by the web server. For httpd servers it also defines some directory access rights if desired. The use of directory access rights depends on what rights files in general have on your server. It is good practice to

keep rights local to a specific site. A xxx.conf file has a form similar to the following:

```
<VirtualHost *:80>
    ServerName lssdb.webtest.com
    ServerAlias *.webtest.com
    DocumentRoot /var/www/lssdb
</VirtualHost>

<Directory "/var/www/lssdb">
    #
    # Possible values for the Options directive are "None", "All",
    # or any combination of:
    #   Indexes Includes FollowSymLinks SymLinksifOwnerMatch
    #
    # Note that "MultiViews" must be named *explicitly* ---
    # "Options All" doesn't give it to you.
    #
    # The Options directive is both complicated and important.
    #
    Options Indexes FollowSymLinks MultiViews
    #
    # AllowOverride controls what directives may be placed in
    # .htaccess files.
    # It can be "All", "None", or any combination of the keywords:
    #   Options FileInfo AuthConfig Limit
    #
    AllowOverride All
    #
    # Controls who can get stuff from this server.
    #
    Require all granted
</Directory>
```

While an Apache virtual host configuration has a format similar to the following:

```
<VirtualHost *:80>
    ServerName lssdb.webtest.com
    ServerAlias *.webtest.com
    DocumentRoot /var/www/lssdb
</VirtualHost>
<Directory /var/www/lssdb>
    Options Indexes FollowSymLinks
    AllowOverride All
    Require all granted
    Satisfy Any
</Directory>
```

In the above examples you must set the webtest.com definition to that matching your website. The document root must point to the location of the web files in case you have moved them from the default location.

15. You should either reboot the system or restart the SQL server and the HTTP server before testing.
16. The site can be tested using a browser and directing it to: lssdb.yourwebsite.com.

The following errors may be observed for improper installation.

1. Funny characters appearing at the top left corner of the webpage.
 - a. This is due to the PHP5 installation being wrong or not enabled.
2. Web page does not appear and default Apache page appears:
 - a. Virtual Host definition is missing or improper.
 - b. The document directory specified in the Virtual Host definition points to the wrong location.
 - c. The index.php initial page directive is not in the conf file.
 - d. Satisfy Any has not been specified in the Virtual Host definition.
3. The web page appears but does nothing.
 - a. The rewrite module is not included in the Apache setup.
 - b. The SQL server is not running.
 - c. The php-mysql module is not installed.
 - d. The AllowOverride All has not been specified for the lssdb directory.
4. There is an error notice when Apache is restarted indicating Host cannot be located using 127.0.0.1.
 - a. In either the configuration file for Apache or the default host directive the ServerName must be declared as 'ServerName yourwebsite.com' where the actual name of your site appears.