



LISTSERV® Maestro 10.1 Installation Manual for Microsoft® Windows

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This document describes the installation of the **Version 10.1** release of LISTSERV® Maestro for Microsoft® Windows in form of an **Individual Setup**.

The individual setup allows you to install only LISTSERV Maestro (without also installing LISTSERV itself), and it also gives you the option of choosing which LISTSERV Maestro components to install, so that you can distribute the components over several servers.

(For the alternative option of performing an “Express Setup”, which installs all LISTSERV Maestro components and LISTSERV itself on one server, please see the Setup-Suite Manual for LISTSERV Maestro instead.)

WARNING: Upgrade with patience!

Upgrading from LISTSERV Maestro 9.0 or older can take a substantial amount of time, if you have a lot of data in your LISTSERV Maestro instance!

Schedule the upgrade for a time when it does not disrupt your usage of Maestro, even if it should take longer than expected.

Be patient during the first start of LISTSERV Maestro after the upgrade. At this time, the system will convert some of the data into a new format that is necessary to support the new features in this version. Check the log files to see when the startup is finished. Do not be impatient if this takes longer than expected.

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Table of Contents

1	Quick Installation Guide	1
1.1	Install LISTSERV.....	1
1.2	Install External Database (optional)	1
1.3	Install LISTSERV Maestro 10.1	2
2	Upgrading an Existing Installation.....	4
3	Modifying or Uninstalling an Existing Installation	4
4	Running LISTSERV Maestro	5
4.1	Starting LISTSERV Maestro	5
4.2	Stopping LISTSERV Maestro.....	6
4.3	Accessing LISTSERV Maestro	6
4.3.1	Supported Browsers	6
5	Prepare LISTSERV Maestro for First Use	7
5.1	First Steps with the LISTSERV Maestro Sample Account.....	7
5.2	Additional User Accounts	7
5.3	Configuring the LISTSERV Connection	8
5.4	Preparing LISTSERV Maestro for Subscriber Lists.....	9
5.4.1	Enable Usage of Subscriber Lists	9
5.4.2	Grant Right to Administer Subscriber Lists and Lookup Tables	10
5.4.3	Define Database Server in LISTSERV	10
	Appendix A: Required Resources.....	14
	Appendix B: The Internal MySQL Database	15
	Appendix C: Using an External Database	16
	Appendix D: Upgrading an Existing 32-Bit Installation	17

1 Quick Installation Guide

For a complete installation of LISTSERV Maestro 10.1, several components are required that may be installed on one server, or distributed over several servers. The following sub-sections give a quick overview of how to install each of these components when doing a fresh installation of LISTSERV Maestro. For more in depth information, or for information on upgrading an existing LISTSERV Maestro installation, please see the later sections of this document.

1.1 Install LISTSERV

LISTSERV Maestro 10.1 requires an instance of LISTSERV. For a new installation, **LISTSERV 17.0** or later is recommended¹.

If you already have such a LISTSERV instance installed, you may use it for LISTSERV Maestro.

If you do not have a LISTSERV instance installed, or want to use a freshly installed instance, you can install a new LISTSERV 17.0 directly from the LISTSERV Maestro 10.1 Setup-Suite. The Setup-Suite allows you to either install the LISTSERV instance on a separate server (by performing a “Custom Setup”) or together with all other LISTSERV Maestro components on a single server (by performing an “Express Setup”). Please see the Setup-Suite Manual for LISTSERV Maestro for details.

IMPORTANT: The bundled LISTSERV 17.0 requires a version 17.0 License Key (LAK). If you use this bundled LISTSERV to upgrade an existing LISTSERV of a previous version, you must obtain and install a LISTSERV version 17.0 product LAK **prior to upgrading**, or LISTSERV will not start after the upgrade! Note also, that LISTSERV 16.x web interface customizations and branding are **not compatible** with LISTSERV 17.0. Before using the bundled LISTSERV 17.0 to upgrade an existing LISTSERV of a previous version, please back up your LISTSERV installation and read the “LISTSERV 17.0 What’s New” document.

1.2 Install External Database (optional)

Only necessary if you do **not** want to use the internal database that is deployed together with LISTSERV Maestro 10.1 (an instance of MySQL 8.0.25, see [Appendix B](#) for details). In this case, you need an external database that LISTSERV Maestro can use as its system database.

¹ The minimum supported LISTSERV version is LISTSERV 16.0 with build date “10 Dec 2009”.

Supported databases are:

- **Microsoft® SQL Server 2000 or later**
- **MySQL™ 4.1 or later**
- **Oracle® 9i or later²**
- **IBM DB2® V8.2 or later**

If you already have an instance of such a database installed, you may use it as the LISTSERV Maestro system database.

If you do not have a database installed, or want to use a freshly installed database, install the database of your choice with the corresponding installation package provided by the database vendor.

Important: If you want to use your own database, see the [Admin Tech Doc 3 – Database Configuration](#) for details about each database, and the specific requirements made by LISTSERV Maestro. Also see [Appendix C](#) for more details.

1.3 Install LISTSERV Maestro 10.1

LISTSERV Maestro 10.1 itself consists of three components:

- The **Maestro User Interface** component is the actual user interface for mail jobs, tracking data, and subscriber lists.
- The **Maestro Tracker** component is the component that collects the tracking events that are generated by recipients of emails that were sent with the Maestro User Interface component.
- The **Administration Hub** component is a central component that stores registry and account information both for the Maestro User Interface and for Maestro Tracker.

For a complete LISTSERV Maestro 10.1 installation, each of the above components must be installed, and each of them only once. However, the components do not have to be installed on the same server, they can be distributed over several servers.

On each server where you want to install one or several of the components, execute the LISTSERV Maestro installation package:

Log in as a Windows administrator and execute the setup file

`"LISTSERVMaestro10.1-N-SetupSuite-x64.exe"`³ (where "N" is the applicable build number).

If necessary, select "Custom Setup", then on the Individual Products Setup page click the button for the LISTSERV Maestro product to start the custom setup wizard.

² Starting with version 7.0, LISTSERV Maestro no longer fully supports Oracle 8i as the system database. If you are using Oracle as the system database, please make sure to upgrade it to 9i or later before upgrading LISTSERV Maestro. If you absolutely have to continue using Oracle 8i as the system database during a transition period, please contact L-Soft support before you upgrade LISTSERV Maestro.

³ Starting with version 7.3, LISTSERV Maestro is only available for 64-bit operating systems. A version for 32-bit Windows is no longer released.

(Alternatively, if you want to make a default installation with all LISTSERV Maestro components together with LISTSERV itself on a single server, you may perform an “Express Setup”, which is however not described in this manual but in the “Express Setup” section of the Setup-Suite Manual for LISTSERV Maestro.)

Once started, the Setup wizard will guide you through all the necessary setup steps. During this process, you will be queried for the target folder into which LISTSERV Maestro shall be installed.

You will also be asked which kind of setup you want to perform:

- **Standard Setup:** When performing a Standard Setup, all three LISTSERV Maestro components plus the internal MySQL database (but not LISTSERV) will be installed on the current server. Default values will be assumed for most of the configuration settings.

In addition, if an instance of LISTSERV is already installed on the current server, then the Standard Setup will automatically configure the freshly installed LISTSERV Maestro to use this LISTSERV instance as the default LISTSERV. For this, Setup will also perform any necessary changes to the configuration of the existing LISTSERV.

If no existing LISTSERV is found, you will be asked to supply the connection information for the default LISTSERV manually.

- **Custom Setup:** When performing a Custom Setup, you will have the choice of which LISTSERV Maestro components you actually want to install on the current server. You will also have to specify more configuration settings than during a Standard Setup.

If an instance of LISTSERV is already installed on the current server, then during Custom Setup you can choose to either use the existing LISTSERV as the default LISTSERV for the freshly installed LISTSERV Maestro (for which Setup will also perform any necessary changes to the configuration of the existing LISTSERV) or to supply the connection information for the default LISTSERV manually (which you will be asked for in any case if no existing LISTSERV is found).

Please read section [6 Prepare LISTSERV Maestro for First Use](#) for further steps you might have to execute after a successful installation.

Note: All settings can be changed at a later time either in the Administration Hub or by editing the corresponding configuration file. Please see for example the “LMA Admin Tech Doc 1 – Configuration Files” and other applicable LMA Admin Tech Docs for details.

Note: Setup will query only those settings which it cannot determine automatically, depending on the current configuration of the server and the choices you make in the wizard. Therefore, during different installations you may be queried for different values and generally you will be queried for more values during a Custom Setup than during a Standard Setup.

2 Upgrading an Existing Installation

The installer can be used to upgrade an existing installation of LISTSERV Maestro⁴ to the current version 10.1 as well as to apply the bug fixes in a later 10.1 build to an already existing 10.1 installation that has an older build. In both cases:

Log in as a Windows administrator and execute the setup file “LISTSERVMaestro10.1-N-SetupSuite-x64.exe”⁵ (where “N” is the applicable build number) on all hosts to be upgraded.

Once started, the Setup wizard will guide you through all the necessary upgrade steps. It will automatically recognize the existing installation and will give you the option to upgrade it to the current version of LISTSERV Maestro 10.1.

Also, depending on the current installation, the setup wizard may offer the option of an “Express Upgrade” (which will upgrade all installed products) and/or an upgrade via a “Custom Setup”, where you can individually select the products to upgrade on the Individual Products Setup page.

The Setup wizard will upgrade exactly the components that are already installed on this server. Setup will upgrade the installation in the folder where it is currently installed.

Please read the section [6 Prepare LISTSERV Maestro for First Use](#) for further steps you might have to execute after a successful upgrade.

Caution: Upgrading an installation is an invasive process during which files of the current installation are replaced, removed or modified and new files are added. Since any such operation may potentially abort unexpectedly (power outage, computer crash, other error), there is a potential for an unexpected and incomplete termination of the upgrade process that could leave the data in a partially upgraded state, from which no consistent state could be recovered. It is therefore **strongly recommended** that you make a backup copy of the old installation folder before you run the upgrade.

Note: If the upgrade process does indeed fail, for example under some circumstances it may abort with a message like “Unable to delete file Tomcat.exe, file is in use” or some other similar message, then restart the computer and rerun the Setup wizard to reapply the upgrade. If the first upgrade attempt has already proceeded beyond a certain point, then during this second attempt, you will not see the normal upgrade wizard, but instead a version of the wizard that offers a “Repair” option. Select this option to complete the previously aborted upgrade.

3 Modifying or Uninstalling an Existing Installation

This section explains how to modify an existing installation of LISTSERV Maestro 10.1 on a certain server by either adding new components that had previously not been installed on this server, or by removing some of the installed components.

⁴ Starting with version 9.0-2, the LISTSERV Maestro installer can only upgrade an existing installation of LISTSERV Maestro 5.0 or later. If you should have an older LISTSERV Maestro installation, you first need to upgrade to an intermediate version, before you can upgrade to version 10.0 in a second step. Please contact L-Soft support for help.

⁵ Starting with version 7.3, LISTSERV Maestro is only available for 64-bit operating systems. Do not use the 64-bit installation package to upgrade an existing older 32-bit version. See Appendix D on how to upgrade such an existing 32-bit installation.

Important: If you modify an existing installation in the course of moving a component from one server to a different server, please do first consult the “LMA Tech Doc 4 – Moving LISTSERV Maestro” about other important steps that need to be performed when moving components!

To perform a modify or uninstall of LISTSERV Maestro (but not LISTSERV, if a LISTSERV instance is also installed), log in as a Windows administrator and start the LISTSERV Maestro Setup wizard by executing the file:

```
[Maestro install folder]\setup-data\Setup.exe
```

(Alternatively, start the setup wizard via the Windows Control Panel.)

The LISTSERV Maestro Setup wizard will recognize the existing installation and will allow you to add or remove LISTSERV Maestro components.

The wizard will also allow you to completely uninstall LISTSERV Maestro from the server.⁶

Note: The above procedure applies only to LISTSERV Maestro itself. If an instance of LISTSERV is also installed on the server, then you need to modify or uninstall it separately by running the individual LISTSERV setup wizard.

To do so, start the LISTSERV setup wizard via the Windows Control Panel. Alternatively, if the LISTSERV instance was initially installed via the LISTSERV Maestro Setup-Suite, then you can also start the individual LISTSERV setup by executing the same Setup-Suite again, and selecting the “LISTSERV” button on the Individual Products Setup page. For details about uninstalling or modifying LISTSERV, please see the LISTSERV manuals.

4 Running LISTSERV Maestro

LISTSERV Maestro can be run either as a Windows Service or as a console application.

Running as a service has the advantage that LISTSERV Maestro is running silently in the background (it cannot be stopped accidentally by closing the console window), that it will start automatically when the server is booted up, and that it will continue running when the current user logs off. This should be the normal run mode for a production environment.

Running in a console window has the advantage that you can see LISTSERV Maestro’s output in the window directly, and not just indirectly by looking at the log files. This run mode is normally used only when trying to diagnose problems with the server.

Note: The sections below deal only with how to start and stop LISTSERV Maestro itself. Of course you will also need to start and stop the LISTSERV instance (or instances) that are used by LISTSERV Maestro. Please see the LISTSERV manuals for details.

4.1 Starting LISTSERV Maestro

You can find the shortcuts for the different run modes (service or console) in the Windows Start Menu.

⁶ If you choose to completely uninstall LISTSERV Maestro, the whole installation folder will be deleted, with all files in it. Therefore, if you want to keep some of the files (for example log files or custom files in the “webapps” subfolder), you must copy or move them to a location outside of the installation folder **before** you perform the uninstall.

Remember that if you start LISTSERV Maestro in a console, then it will automatically stop running when you log out. If you want LISTSERV Maestro to continue running even after you log out, then you must start it as a service.

After starting LISTSERV Maestro, you can send a remote version query to each component to verify that your installation is up and running. Open a [compatible browser](#) and type each of the URLs listed below into the address field (where you replace the correct server name in each URL). The result of the query will be displayed in the browser.

- To query LUI: `http://LUI_SERVER/lui/build`
- To query LUI's "list" context: `http://LUI_SERVER/list/build`
- To query HUB: `http://HUB_SERVER/hub/build`
- To query TRK: `http://TRK_SERVER/trk/build`

4.2 Stopping LISTSERV Maestro

Always stop LISTSERV Maestro with the shortcut from the Windows Start Menu (even if LISTSERV Maestro is running as a service) or the `StopServer.cmd` in the "commands" folder in LISTSERV Maestro's installation folder.

If you are running LISTSERV Maestro in a console, do not shut it down by simply closing the console window. If you attempt to "kill" LISTSERV Maestro in this way some processes that belong to LISTSERV Maestro may continue to run in the background. If you happen to close the console window by accident, then you can still run the **Stop** command shortcut from the Windows Start Menu – this will stop the processes that may still be running in the background.

4.3 Accessing LISTSERV Maestro

To access LISTSERV Maestro, open a web browser and access the URL:

```
http://<YOUR_MAESTRO_USER_INTERFACE_HOST>/lui
```

This URL provides access both to the Maestro User Interface (for normal users and the administrator) and to the Administration Hub (for the administrator only).

On the server where the Maestro User Interface component (LUI) is installed, you will find a convenient shortcut to this URL in the Windows Start Menu.

In the URL above, you need to replace "<YOUR_USER_INTERFACE_HOST>" with the hostname of the server running the Maestro User Interface component (LUI). In addition, if the server uses a different HTTP-port than the standard port "80", then you need to include this different port with the host name, separated with a colon ":", like this: "http://HOSTNAME:PORT/lui".

4.3.1 Supported Browsers

Access to the Maestro User Interface and Administration Hub requires a web browser running on the client computer⁷.

⁷ The client does not necessarily have to use the same operating system as the LISTSERV Maestro server. You may for example use a Linux client to access LISTSERV Maestro on a Windows server or any other combination.

It is strongly recommended that you use the **latest version**, or at least a relatively recent version, of one of the major browsers: Google Chrome, Firefox, Edge, Safari or Opera (Internet Explorer is not supported). If another browser, or an older version of one of these browsers is used, it is possible that some features of LISTSERV Maestro may not work as expected and/or that the application pages may suffer display problems.

5 Prepare LISTSERV Maestro for First Use

The following subsections discuss steps that you need to perform in order to prepare a fresh installation of LISTSERV Maestro for first use. If you have already provided values for certain settings during the installation process, or if you have upgraded an existing installation, some of these steps may not be necessary. Read through the sections anyway, because some steps may deal with new features that were not previously available and therefore must be performed even after an upgrade of an existing installation.

5.1 First Steps with the LISTSERV Maestro Sample Account

LISTSERV Maestro is installed with a pre-defined example account. You can access this account by opening the Maestro User Interface and logging in with the user name “**sample**” (no group name) and the password that you supplied for the sample account during the setup wizard (if you did not supply a password during the setup wizard, then you first have to login with the administrator account – see below – and assign a password to the sample account before you can login with the sample account).

The sample account contains two example jobs in the list of delivered jobs, one plain text and one HTML mail job, along with the collected tracking data from these jobs, viewable with three pre-defined tracking reports. Feel free to browse through these jobs and their tracking data and to create some “test-jobs” of your own by using the sample jobs as starting points (making copies of the sample jobs).

The sample account also contains one example newsletter subscriber list, which you may browse through and experiment with to try out the subscriber warehouse features. (Note, that the subscribers on the sample list are dummy subscribers with addresses that will all bounce back to the sender, should you actually try to deliver a mail job to these subscribers.)

5.2 Additional User Accounts

In addition to the sample account, the setup wizard gives you the option to create your first normal user account. If you use this option, then this account will be ready for your use right after installation.

Over time, you will likely need additional user accounts. To create them, access the Administration Hub with a browser, using the LISTSERV Maestro access URL (see [above](#)), and log in with the user name “**admin**” (no group) and the administrator password that you supplied during the setup wizard.

Then select **New -> User Account** from the main menu. Next, enter the account name (and, optionally, group) and the password and other account details. Click on **[Save]**.

Note: The LISTSERV Maestro login page is used for login both to the Maestro User Interface (LUI) and to the Administration Hub (HUB). Once logged in, you can switch freely between the two by selecting **Switch to LUI** or **Switch to HUB** from the main menu. The configuration steps described below are all performed in the Administration Hub, so after the initial login, you may have to select **Switch to HUB** to reach these settings.

5.3 Configuring the LISTSERV Connection

If you used the “**Express Setup**” option when installing LISTSERV Maestro, then the default LISTSERV connection has already been configured automatically. In this case, you can skip this section.

Depending on your choices in the setup wizard, the default LISTSERV connection may already be configured or not. Especially if you selected the “**Custom Setup**” option, it is usually not yet configured.

To check, and if necessary configure, the LISTSERV connection details, login to the Administration Hub with the administrator account (user name “`admin`”).

The LISTSERV connection settings are necessary to make the Maestro User Interface aware of the LISTSERV instance with which it is supposed to collaborate.

Since this setting can be defined individually for different accounts and groups, you can connect the Maestro User Interface to separate LISTSERV instances (even in parallel), depending on which account is currently logged in and using the Maestro User Interface. You do so by defining each account’s/group’s individual LISTSERV connection settings.

If, on the other hand, you have only a single LISTSERV instance that you want to share among all accounts, then it is easiest to configure this LISTSERV instance as the application-wide default and leave the settings of the individual accounts and groups empty.

- To configure the default LISTSERV connection: Select **LUI Settings -> Application Default Settings -> LISTSERV Connection** from the main menu.
- To configure the LISTSERV connection of a specific account: On the **Accounts and Identities** page, click on the account, then select **Account Settings -> LISTSERV Connection** from the main menu.
- To configure the LISTSERV connection of a specific group: On the **Accounts and Identities** page, click on the group, then select **Group Settings -> LISTSERV Connection** from the main menu.

Enter information for the following parameters:

- **LISTSERV Host:** The host name of the server running the LISTSERV component. This LISTSERV host will be used for the following purposes:
 - Delivery of all mail jobs sent with the account(s) to which this setting applies.
 - Bounce reporting for all jobs sent with the account(s) to which this setting applies (unless a dedicated bounce handling server is defined).
 - Creation and maintenance of all LISTSERV lists that are used to back the advanced subscriber lists created with the account(s) to which this setting applies (in case the Advanced Subscriber Lists feature is used – see section “5.4 Preparing LISTSERV Maestro for Subscriber Lists” for more details).
- **External Host Name:** If the LISTSERV host is known externally with a different host name than the one above, enter this external host name here.
- **LISTSERV TCPGUI Port:** The port number on the LISTSERV host on which the LISTSERV component accepts TCPGUI connections (the standard port is 2306).

- **Client Address for Mail Delivery and Bounce Reporting:** The address you configure here is used by the Maestro User Interface when transferring a mail job to the LISTSERV host configured above and when retrieving bounce information from that LISTSERV host.
 - **Address:** An email address that is known to the LISTSERV host configured above either as a postmaster address or as an address that is listed under the LISTSERV configuration parameter “`DIST_ALLOWED_USERS`”, meaning an address that has the `DISTRIBUTE` right.
 - **Password:** The address’ password, associated with it at the LISTSERV component. Please see the LISTSERV documentation about how to set a personal password for an email address.
- **Client Address for LISTSERV Server Administration:** The address configured here is used by the Maestro User Interface to communicate with the LISTSERV host to perform server administrative tasks.
 - **Address:** An email address that is known to the LISTSERV configured above as a postmaster address.
 - **Password:** The address’ password, associated with it at the LISTSERV component.

5.4 Preparing LISTSERV Maestro for Subscriber Lists

The subscriber warehouse of LISTSERV Maestro allows you to store and maintain your subscriber lists (and all subscriber profile values) directly inside of LISTSERV Maestro, without the need for additional software.

To use subscriber lists, you have to perform the following general steps (or confirm that they have been performed earlier). For each of these steps, see the following sub-sections for details:

1. Enable Usage of Subscriber Lists

In a freshly installed LISTSERV Maestro, usage of subscriber lists is already enabled by default.

2. Grant “Data Administrator” Right

Even after usage of subscriber lists has been enabled in general, only accounts that are granted the right to **Administer Subscriber Lists and Lookup Tables** are actually allowed to use the feature.

If you want to use **advanced subscriber lists**, you also have to perform an additional step (or confirm that it has been performed earlier). Again, see the following sub-sections for details about this step:

3. Define Database Server in LISTSERV

If **advanced subscriber lists** are to be used, then the LISTSERV host configured in the LISTSERV connection settings of the corresponding account/group needs to be connected to the system database of LISTSERV Maestro.

5.4.1 Enable Usage of Subscriber Lists

If you want to use subscriber lists, confirm that their usage has been enabled in the Administration Hub (this is by default the case in a freshly installed LISTSERV Maestro):

- To enable subscriber lists by default: Select **LUI Settings -> Application Default Settings -> Subscriber Data Settings** from the menu.

- To enable subscriber lists for a specific account: On the **Accounts and Identities** page, click on the account, then select **Account Settings -> Subscriber Data Settings** from the menu.
- To enable subscriber lists for a specific group: On the **Accounts and Identities** page, click on the group, then select **Group Settings -> Subscriber Data Settings** from the menu.

The Subscriber Data Settings screen allows you to define if an user account is allowed to create subscriber lists in the first place, and if so, if the account may also switch subscriber lists into advanced mode, i.e. if the account is also allowed to create advanced subscriber lists.⁸

5.4.2 Grant Right to Administer Subscriber Lists and Lookup Tables

For a non-group account, once usage of subscriber lists has been enabled (either specifically in the account settings or as an inherited default setting), it is still necessary to also grant the account the right to actually use this feature.

Similarly for a group, once usage of subscriber lists has been enabled for the group (either specifically in the group settings or as an inherited default setting), it is still necessary to define which accounts in the group are actually granted the right to use this feature.

To define this right for a specific account (either an account in a group or a non-group account): On the **Accounts and Identities** page, click on the account, then select **Account Settings -> User Right Settings**. The User Right Settings screen allows you to grant or revoke the right to **Administer Subscriber Lists and Lookup Tables** for the selected account⁹.

5.4.3 Define Database Server in LISTSERV

Note: This configuration step is only necessary if usage of advanced subscriber lists has been enabled. It is not necessary if only standard subscriber lists are allowed.

Advanced subscriber lists are backed by actual LISTSERV lists. These LISTSERV lists are in turn “database backed” by tables in the LISTSERV Maestro system database. This means, that the subscribers on these lists are not stored in LISTSERV itself, but in tables in the backing database (in this case, the LISTSERV Maestro system database). With such a database backed list, LISTSERV must have access to the backing database in order to be able to retrieve the list subscribers during delivery.

To enable LISTSERV to access the LISTSERV Maestro system database, you need to configure a **specific** database server name in the LISTSERV instance.

You need to do so for **every** LISTSERV instance that is configured in the LISTSERV connection settings of any account/group for which the feature to use advanced subscriber lists is enabled.

In other words, if for an account/group you have enabled the feature to use advanced subscriber lists, then you **must** configure the LISTSERV instance that this account/group has defined in its LISTSERV connection settings (or inherited from the default settings) to be able to connect to the LISTSERV Maestro system database.

⁸ The applicable right may also be inherited from the default level, if not overridden on the individual account/group level.

⁹ If the **Administer Subscriber Lists and Lookup Tables** user right is granted, then the right to **Administer Target Groups** is also always granted by default. Any user who is allowed to administer subscriber lists will always also be allowed to administer target groups.

Also, if this user right is granted but usage of subscriber lists is still disabled (see the previous sub-section), then the account will still not be able to administrate subscriber lists until subscriber lists are enabled as described above.

The following instructions describe how to configure a LISTSERV instance on a Windows 10 host, so that it is correctly enabled to connect to the LISTSERV Maestro system database. For other Windows operating systems, the procedure is very similar. For LISTSERV on a non-Windows host, please refer to the LISTSERV documentation on how to create a database server name. Use the description below as a guideline and modify it to apply to your operating system.

On Windows, LISTSERV's database connection happens by way of ODBC. You must first create a system-wide ODBC data source on the host where the LISTSERV instance is installed. This may or may not be the same host where LISTSERV Maestro or its system database is installed.

For example on Windows 10: Select "Settings" from the start menu, then in the settings window, type "ODBC" into the search box in the top right corner. The search results should show the tool to configure ODBC data sources. Open this tool.¹⁰

In the tool, select the **System DSN** tab, and then click **[Add...]**. Select the appropriate driver and fill out the driver-specific form with the database specific values, using the same values as you supplied for the system database connection in the Administration Hub of LISTSERV Maestro (the same database host name, port and any additional settings required by the driver). L-Soft does **not** recommend supplying a user name and password in a system-wide DSN (if offered by the driver at all). Instead of supplying these values in the DSN, you will supply them in the LISTSERV configuration (see below). Give the DSN a meaningful name.

Now you need to configure this DSN as a database server name in LISTSERV. To do so, add the following lines to the `SITE.CFG` file of the LISTSERV instance:

```
ODBC_DSN_SERVERNAME=DSN_NAME
ODBC_UID_SERVERNAME=USERNAME
ODBC_AUTH_SERVERNAME=PASSWORD
```

where you replace "SERVERNAME" with the specific server name (see below for details), "DSN_NAME" with the name of your DSN and "USERNAME" and "PASSWORD" with the same database user name and password that you have also supplied for the system database connection in the Administration Hub of LISTSERV Maestro.

The "SERVERNAME": The value for the specific server name to be used in the above configuration is a special value that you can find on the LISTSERV Connection screen in the Maestro Administration Hub:

- Default LISTSERV Connection: Select **LUI Settings -> Application Default Settings -> LISTSERV Connection** from the menu.
- LISTSERV Connection for a specific account: On the **Accounts and Identities** page, click on the account, then select **Account Settings -> LISTSERV Connection** from the menu.
- LISTSERV Connection for a specific group: On the **Accounts and Identities** page, click on the group, then select **Group Settings -> LISTSERV Connection** from the menu.

¹⁰ On a 64-bit system, the search result should show two such tools, one for 32 bit, one for 64 bit. You need to use the tool that matches the bit-ness of your LISTSERV instance. If LISTSERV is 32 bit, you need to use the 32 bit tool, if LISTSERV is 64 bit, you need to use the 64 bit tool.

The server name is given as the value labeled **Database Server Name** in the **Advanced Subscriber Lists Settings** section. This name always starts with “MAESTRODB_”, followed by a unique string of characters. For example, “MAESTRODB_dtn7nzn3”. So the entry in the `SITE.CFG` might look like this:

```
ODBC_DSN_MAESTRODB_dtn7nzn3=DSN_NAME
ODBC_UID_MAESTRODB_dtn7nzn3=USERNAME
ODBC_AUTH_MAESTRODB_dtn7nzn3=PASSWORD
```

On your own server, you would replace “dtn7nzn3” with the correct value for your `SERVERNAME`.¹¹

Important: LISTSERV requires that if you are using a database server name, the “default database interface” must also always be defined, even if it is not used. If you do not already have the default database interface defined, you need to do this now. Otherwise, the above configuration of the database server name for Maestro will be ignored by LISTSERV. However, for the default database interface, you may supply dummy values as shown below.

Add the following lines to the `SITE.CFG` file of the LISTSERV instance:

```
ODBC_DSN=DUMMY
ODBC_UID=DUMMY
ODBC_AUTH=DUMMY
```

Note for Users of the Internal System Database: LISTSERV Maestro comes with an out-of-the-box version of MySQL as the internal system database. If you use this internal database as the system database and need to connect LISTSERV to it as described above, do this as follows:

- If LISTSERV is installed on the same host as the internal database – that is the host where the Maestro User Interface (LUI) component is installed – then you need an ODBC-driver for MySQL on that host, and when creating the DSN you need to supply the host name “localhost”, the port “3306” and the database name “LUI”. Also, in the `SITE.CFG`, supply “luiuser” as the user name and “lui” as the password.

OR

- If LISTSERV is installed on a different host than the internal database, then you need an ODBC-driver for MySQL on that host, and when creating the DSN you need to supply the host name where the internal database is installed (the host where the Maestro User Interface component is installed), the port “3306” and the database name “LUI”. Then in the `SITE.CFG`, supply a database user name and password of your choice.

As a second step, you need to grant the right to access the internal database to this user that you have defined. Do so here:

On the server where the Maestro User Interface component is installed, start the MySQL client program:

```
[Maestro install folder]\lui\database\bin\mysql.exe -u root
```

Then enter the following command:

```
grant all on lui.* to 'USERNAME'@'LISTSERVHOST' identified by 'PASSWORD';
```

¹¹ It is important to use exactly the same server name as given on the LISTSERV Connection screen of the Administration Hub, using the exact spelling (all letters must be in lowercase, which is also useful to discern between the letter “O” and the digit “zero”: The letter is shown in lowercase as “o” while the digit is shown as “0”).

where you replace "USERNAME" with the database user name you have defined (this is your self-defined user name, see above), "LISTSERVHOST" with the name of the host where LISTSERV is running and "PASSWORD" with the database password you have defined (again, your self-defined password, see above).

Take care to use the same upper/lowercase spelling of the username and password as you have defined them in the `SITE.CFG`. Also take care to type "lui.*" in lowercase and to use the apostrophe quotes as shown above.

Appendix A: Required Resources

This manual assumes that you have access to the setup file of **LISTSERV Maestro 10.1**:

```
LISTSERVMaestro10.1-SetupSuite-x64.exe
```

LISTSERV Maestro requires a computer running Windows XP or later, or Windows Server 2003 or later. Only 64-bit Windows versions are supported.

For the installation, you will also need to have **Administrator login access to the computer(s) where the LISTSERV Maestro components will be installed**

When installing the components on their hosts, the following restrictions must be met:

- All hosts that contain any of the three LISTSERV Maestro components must be interconnected with a network in such a way that the components can communicate using TCP/IP ports. In addition, the host where the Maestro User Interface component is installed must be interconnected with the LISTSERV host, as well as with the host of any optional database(s).
- The host where the Maestro Tracker component is installed must have a registered DNS host name and the HTTP port (typically port "80") on that host must be available to external users from the Internet.
- The host where the Maestro User Interface component is installed must be accessible on the HTTP port for all intended users of the Maestro User Interface. If there are only internal users, then the host may be protected by a firewall. However, if external users are also supposed to access the Maestro User Interface, then the host must to have a registered DNS host name and the HTTP port must be available to external users from the Internet, even through a firewall.

Note: If the Subscriber Warehouse feature is to be used in such a way that subscribers will be able to use the subscriber access pages to independently subscribe to and unsubscribe from lists, as well as to edit their subscription profiles, then the Maestro User Interface **must** be accessible to external users as described above.

- The host where the Administration Hub component is installed must be accessible on the HTTP port for all intended users of the Administration Hub interface. If there are only internal users, then the host may be protected by a firewall. However, if external users are also supposed to access the Administration Hub, then the host must to have a registered DNS host name and the HTTP port must be available to external users from the Internet, even through a firewall.
- For standard installations, the three LISTSERV Maestro components all require use of the HTTP port. On a host where any of these three components is installed, there may not be any other software running that also requires use of the same HTTP port (such as a web server, for example). The three LISTSERV Maestro components themselves may however share one host and the same HTTP port. The standard port for HTTP is port "80". However, a different port may be configured as the HTTP port during setup or at a later time.
- Other restrictions may apply to the LISTSERV host, depending on LISTSERV's setup requirements. See the LISTSERV manuals for details.

Remember that if any of the components share a host, then **all** restrictions from **all** components on that host apply.

Appendix B: The Internal MySQL Database

By default, LISTSERV Maestro 10.1 is installed with an instance of MySQL 8.0.25 as the internal system database.¹²

Using this internal system database is optional. See [Appendix C](#) for details on how to use an external database instead.

Please see <http://www.mysql.com> for details about MySQL 8.0.25 and its features to determine if it meets your requirements and expectations for a production database. Reviewing the features will help you decide if you want to use the internal database or if you prefer to install a different external system database.

With LISTSERV Maestro, the internal MySQL database is installed on the same server as the Maestro User Interface component (if installation of MySQL was not deselected during setup). You can find the database binaries, including some selected server and client tools, in the folder

```
[Maestro install folder]\lui\database
```

on that server.

Upgrade Note: LISTSERV Maestro 9.0 (and older) was installed with an internal MySQL database of version 5.5.16. When upgrading such an existing older installation to version 10.1, the internal MySQL database will **not** automatically be upgraded to 8.0.25. Instead, the upgraded LISTSERV Maestro 10.1 will continue to use the internal MySQL 5.5.16 database.

MySQL 5.5.16 is still fully supported and compatible. But if you also want to upgrade the internal database, then please contact L-Soft support for instructions on how to do this.

¹² The internal MySQL 8.0.25 database included with LISTSERV Maestro 10.1 requires that the *Microsoft Visual C++ Redistributable for Visual Studio 2015-2019* is installed on the computer. If not already present, you need to install this redistributable for the x64 platform (can be obtained from Microsoft) or otherwise the MySQL database will not start. The installer warns you if the redistributable is not installed. In this case, it is recommended to abort the LISTSERV Maestro installation and return to it after installing the redistributable.

Appendix C: Using an External Database

You may decide during setup to not install the internal system database at all, in which case you must install a separate external system database. Information about the supported system database types and the necessary steps to prepare such a database for use as LISTSERV Maestro system database can be found in [Admin Tech Doc 3: Database Configuration](#).

Even if you are starting with a fresh installation and therefore with a system without the groups and user accounts that you will typically need later during production operation, LISTSERV Maestro is installed together with a set of initial system data in a format much similar to how a LISTSERV Maestro production backup is structured. Just as with any other backup that is being restored, LISTSERV Maestro also restores this initial, seemingly empty, set of data into its system database during the initial startup routine.

The initial set of data that comes with the install kit is prepared to be restored into the default internal MySQL system database. Therefore, if you decide to also install the default MySQL database during setup, this initial backup restoration works without problems, and, since the initial set of data is very small, delays the initial startup for only a few seconds.

Contrary to this, if you do not install the internal MySQL database already during initial setup, the initial startup routine will fail to complete and the LISTSERV Maestro LUI component will not be accepting logins yet. In this state, the Administration Hub, however, will already allow logins. To make LISTSERV Maestro connect to your desired external database, continue with the startup routine and (upon completion) accept LUI logins, execute the following steps:

1. Log into the Administration Hub. Select **Main Menu → LUI Settings → System Database Status**. This screen will report an error message similar to the one that is reported in the LUI log file. Now click the **Change Connection Settings** link.
2. Select the database plugin that matches your database and JDBC driver configuration (if you do not see the required plugin in this list, you first must provide the JDBC driver jar file provided by your database vendor – please see [here](#)).
3. Fill out the connection parameters as required by the plugin. The type and semantics of these parameters depend on the database you want to use. Usually, this are parameters like the host name where the database server is running, the database name, the username and password, and the connection port.
4. Submit your settings with “OK”. LISTSERV Maestro now validates your input and checks if the desired target system database is empty. If these checks pass, LISTSERV Maestro then proceed with restoring the initial set of data into the database, only now not into the default internal MySQL database but into your desired external system database. Once this restoration is complete, LISTSERV Maestro is ready for use (no additional restart required).

Regardless of whether you are initially running LISTSERV Maestro with the default MySQL internal system database or an external system database of your choice, you can easily switch to a different external system database at a later time, which is described in [Admin Tech Doc 3: Database Configuration](#).

Appendix D: Upgrading an Existing 32-Bit Installation

Starting with version 7.3, LISTSERV Maestro is only released as a 64-bit version. This means that if you have an existing 32-bit installation of LISTSERV Maestro, then you cannot upgrade it directly with the LISTSERV Maestro 10.1 installer.

Note: The latest version that is still available in a 32-bit variant is LISTSERV Maestro 7.2-2. If desired, and if your current installation is even older, you can first upgrade to 7.2-2 to have at least the most recent version for 32-bit, before proceeding with the steps described below.

If your existing 32-bit installation is on a 32-bit Windows, then you cannot upgrade it at all. To upgrade to LISTSERV Maestro 7.3 or later, you will have to move the whole LISTSERV Maestro installation to a new server with one of the supported 64-bit operating systems. See “Admin Tech Doc 4 – Moving LISTSERV Maestro” for details.

If your existing 32-bit installation is on a 64-bit Windows, then you can transfer the existing installation to a new 64-bit installation on the same server:

- Trigger a backup in LISTSERV Maestro.
- Wait until the backup has completed successfully.
- Immediately after backup completion, shut down LISTSERV Maestro (on all servers where a LISTSERV Maestro component is installed – the following also applies to each server that has a LISTSERV Maestro component installed).
- Copy the LISTSERV Maestro backup files (three in total – one for each component) to a safe location outside of the installation folder.
- As a fallback, make a copy of the LISTSERV Maestro installation folder itself.
- Uninstall the current (old) LISTSERV Maestro instance.
- Install a fresh LISTSERV Maestro instance using the 10.1 installer.
- Restore the backup of above into this new LISTSERV Maestro instance. See “Admin Tech Doc 2 – Backups” for more details. Remember that you need to restore the backup of all three components.
- Transfer all special configuration settings, for example in “commands\UserConfig.cmd” and in “conf\tomcat.ini”, from the old version’s installation folder copy that you made above. Remember to also transfer all necessary SSL certificates (if any) and, if you want, transfer the accumulated log files. Also transfer any additional web content that you added to the webapps folder (if any, see “Admin Tech Doc 12” for details).
- Restart LISTSERV Maestro on all servers. This restart also completes the backup restoration by restoring the data in the system database. Be patient for this step to finish.
- Once you have verified that LISTSERV Maestro is running properly again (now in a 64-bit version) and no data has been lost, you can delete the special backup copy of the old version’s installation folder that you made above.