L-Soft Sweden AB

Data Administrator's Manual

LISTSERV® Maestro, version 3.0

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Preface - About This Manual

Every effort has been made to ensure that this document is an accurate representation of the functionality of LISTSERV® Maestro. As with every software application, development continues after the documentation has gone to press so small inconsistencies may occur. We would appreciate any feedback on this manual. Send comments via email to: manuals@lsoft.com

The following documentation conventions have been used in this manual:

- Menus, options, icons, fields, and text boxes on the screen will be bold (e.g. the **Dataset** menu).
- Clickable buttons will be bold and within brackets (e.g. the **[OK]** button).
- Clickable links will be bold and underlined (e.g. the **Edit** link).
- Directory names, commands, and examples of editing program files will appear in Courier New font.
- Emphasized words or phrases will be underlined.
- Some screen captures have been cropped for emphasis or descriptive purposes.

- This symbol denotes an important note or warning.

- This symbol denotes optional advice that can help you save time.

- This symbol denotes a new feature for LISTSERV Maestro 3.0.

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What's New in LISTSERV® Maestro 3.0

The following sections describe the new features for LISTSERV Maestro, version 3.0.

LISTSERV and LISTSERV Maestro Integration

LISTSERV is a powerful email list management software solution that sets the industry standard. It allows you to easily manage opt-in email lists, such as email newsletters, announcement lists, and discussion groups.

LISTSERV Maestro is a highly intuitive, advanced email communication solution. It allows you to manage and track sophisticated, database-driven opt-in email campaigns with a powerful, yet easy-to-use Web interface.

LISTSERV Maestro started out in version 1.0 as a user-friendly interface to LISTSERV's DISTRIBUTE command, making it easy to take recipient data from nearly any source (databases, text files, and LISTSERV lists) and process targeted and personalized messages through LISTSERV's powerful mail-merge engine.

In version 2.0, LISTSERV Maestro added a data warehouse to collect and store recipient data for itself and for LISTSERV lists. The Maestro data administration interface now included an easy to use Wizard for creating simple database-backed LISTSERV lists within Maestro.

Meanwhile, the LISTSERV 14.x series added some integration with LISTSERV Maestro. The List Wizard became aware of Maestro hosted LISTSERV lists, and LISTSERV Maestro's powerful HTML message import applet became part of the LISTSERV Web Interface's new message sending interface. The LISTSERV 14.x series also added important deliverability, anti-spam, and anti-virus features that benefited both products.

Now, in LISTSERV 15.0 and LISTSERV Maestro 3.0, the two interfaces have been completely redesigned, merging the best features of each into the other, and allowing free flow from one application to the other.

LISTSERV 15.0 can still function independently of Maestro, but the two products together offer the most comprehensive email communications package on the market. With the recent addition of HDMail, L-Soft's new High Deliverability mail engine, the L-Soft software suite has become an email communications solution unmatched in deliverability, speed, and ease of use.

The following features are a result of this integration between LISTSERV 15.0 and LISTSERV Maestro 3.0, and they are described in the sections below.

Single Sign-On

LISTSERV Maestro now provides an option to map LISTSERV Maestro accounts or identities to email addresses and to trust LISTSERV's login mechanism. Thus, once logged into the LISTSERV Web interface, a user can select a Maestro menu option and go directly into LISTSERV Maestro without having to login again. If a LISTSERV Maestro identity is mapped to an email address, then the user can select which account within that identity to use.

For more information, see the Administrator's Manual for LISTSERV Maestro 3.0.

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LISTSERV Access to LISTSERV Maestro Subscriber Pages

The Maestro data administrator (if given that right in HUB account management) may request that the subscriber pages for any datasets be made accessible from the Subscriber's Corner in the LISTSERV Web interface. In that case, the Subscriber's Corner menu option becomes a pull-down menu with links to each of the available datasets in LISTSERV Maestro. Single Sign-On can also be available to subscribers so that, having logged into LISTSERV, they can be automatically logged in to the LISTSERV Maestro subscriber pages that they visit.

For more information, see Section10.1.2 Accessing the LISTSERV Maestro Subscriber Pages from LISTSERV and Section 4.1.1.1 General Settings. For more information on the LISTSERV and LISTSERV Maestro integration, see the Administrator's Manual for LISTSERV Maestro 3.0.

LISTSERV Maestro Subscriber Pages Access to LISTSERV Archives

For datasets containing HLLs with archives, the subscriber pages provide links to the lists' home page and archives within the LISTSERV Web Interface.

For more information, see Section10.1.1 Accessing LISTSERV Archives and Section 4.1.1.1 General Settings. For more information on the LISTSERV and LISTSERV Maestro integration, see the Administrator's Manual for LISTSERV Maestro 3.0.

Usability Enhancements

Several enhancements have been made to improve a user's ability to easily maneuver through the LISTSERV Maestro User Interface and to quickly summarize the job, recipient, membership, and subscriber statistics. These enhancements are described in the following sections.

Toolbar

Navigation within LISTSERV Maestro now uses the same type of toolbar with pull-down menus as the LISTSERV 15.0 Web interface. The Toolbar for LISTSERV Maestro contains menus and icons that give you quick access to the different functions of LISTSERV Maestro. These menus adapt to context; for example, when working in a dataset, the **Dataset** menu becomes available for performing dataset operations.

For more information, see Section 1.2.1 The Toolbar.

Dashboard

The new Dashboard displayed upon logging in provides a quick summary of job status – what happened recently and what is due to happen in the future.

The Dashboard is divided into several sections, which can be rearranged or hidden so that the information most important to each user is shown at the top of the dashboard.

The Dashboard sections are:

- **Currently In The System** shows general statistics such as the number of jobs in progress, number of jobs completed, etc.
- **Recently Visited** provides shortcuts to the most recently used jobs, reports, etc. This lets you easily resume work in one area if you interrupted it to visit another area. These are also available in the **Back To** menu.

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- **Jobs Due Next** shows the jobs that are due soon or overdue for authorization. Each job may now be assigned an authorization due date so that Maestro can help you stay on schedule.
- **Current and Upcoming Deliveries** shows a list of jobs that are currently being delivered and that are scheduled next for delivery.
- **Recent Deliveries** shows the status of jobs that were recently delivered or had attempted delivery and failed.

For more information, see Section 1.2.2 The Dashboard.

Interactive Drill-Down Reporting

Several new types of reports are available in the LISTSERV Maestro User Interface. These reports are interactive charts and let you drill down for details; simply hover the mouse over the chart to pick a particular day and get the stats for that day or drill down to get an hourly chart for that day. The job-based reports below, besides being available to individual accounts, are also available to the site admin over all groups and accounts.

- **Recipients Distribution over Time**: A line chart that shows the distribution over time of the recipients that were processed in the defined period, sub-divided in delivered and bounced recipients.
- **Recipients Per Job in Period**: A bar diagram that shows the successful delivered and bounced recipients of each job in the selected period.
- **Delivered Jobs Distribution over Time**: This line chart shows the distribution over time of the jobs that were processed in the display period supplied above, sub-divided in delivered and failed jobs.
- **Membership and Subscriber Statistics**: These line charts show dataset and list subscriptions and signoffs over time.

For more information on the Recipients Distribution over Time, Recipients Per Job in Period, and Delivered Jobs Distribution over Time reports, see the User's Manual for LISTSERV Maestro 3.0. For information on the Membership and Subscriber Statistics reports, see Section 9.5 Member and Subscriber Statistics.

Hosted LISTSERV Lists Enhancements

Extensive improvements have been made to Maestro Hosted LISTSERV Lists (HLLs), including advanced configuration features, a new list type, a LISTSERV list wizard for cloning or converting standard lists, and the ability to create links to traditional LISTSERV lists.

HLL Definition Wizard - New List Type

A new "user defined" list type is available for creating lists that do not fall neatly into the first three list types (announcement, moderated, and unmoderated). Creating user defined lists is an advanced feature that requires knowledge of LISTSERV list headers and keywords; therefore, this list type is most suited for those experienced LISTSERV users. The behavior of this list depends entirely on the value that is entered for the "Send" keyword.

For more information, see Section 7.4 Creating LISTSERV User Defined Lists.

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HLL Definition Wizard - New Advanced Configuration Tab

The new Advanced Configuration tab makes it easy for the traditional LISTSERV experts to configure lists by setting the keywords they are familiar with, while the list creation Wizard makes it easy for people new to LISTSERV to create even the most complex lists without needing to know anything about LISTSERV's list header syntax.

Note: A small number of special-purpose or obsolete keywords, such as Peers= and New-List=, are unsupported in LISTSERV Maestro.

For more information, see Section 7.1.4.1 Advanced Configuration, Section 7.2.4.1 Advanced Configuration, Section 7.3.4.1 Advanced Configuration, and Section 7.4.4.1 Advanced Configuration.

Convert or Clone Standard LISTSERV Lists

A new wizard lets you convert a traditional LISTSERV list and turn it into an HLL. This allows you to add data fields and provide default values. The subscribe time from the LISTSERV list is imported as well; therefore, the interactive Subscriber Statistics report can be used effectively on lists that have existed for years. Alternatively, you can clone an existing LISTSERV list, creating a new list with the same configuration and importing its subscribers.

For more information, see Section 8.1.1 Converting or Cloning a Standard LISTSERV List.

Linked LISTSERV Lists

Now you can create a "link" from your dataset to any existing traditional LISTSERV lists. Once linked, the list is integrated into the membership area so that the subscribers can perform the usual tasks from within the membership area, i.e. subscribe / unsubscribe / edit settings. As with all the Maestro subscriber pages, the list pages for linked LISTSERV lists are customizable.

With these linked LISTSERV lists and the ability to import traditional LISTSERV lists into HLLs, it is easy to transition from LISTSERV to LISTSERV Maestro. Existing lists can be kept exactly as they are or imported into HLLs, and new HLLs and HRLs can be added as well. Lists of all types can be presented to subscribers from a single subscriber interface or split among multiple subscriber datasets, each with its own set of subscriber pages.

Note: This feature is a result of the LISTSERV and LISTSERV Maestro integration. Be sure to read the information on this integration before linking lists.

To establish the user's right for this feature, see the Administrator's Manual for LISTSERV Maestro 3.0. For more information on using this feature, see Section 8.3 Managing Linked LISTSERV Lists.

Subscriber Interface and Data Administration Enhancements

Several enhancements have been made to improve the data administrator's ability to manage both data and subscriber information, including a setting that lets members' signup without a password, a setting that lets members save their password for a quick login, and a new way for members to unsubscribe to a list. These enhancements, plus more, are described in the following sections.

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Signup without a Password

If desired, it is now possible to request that the password field not be displayed on the automatically generated pages for joining a dataset or subscribing to a list. In that case, a password is automatically assigned and sent to the subscriber in the subscription confirmation email. Of course, for security and privacy, existing subscribers are still required to provide a password for making changes to their subscriptions and data.

For more information, see Section 4.1.1.1 General Settings.

Quick Login

An option is now available for saving the password in a cookie so that the subscriber is automatically logged on at each visit.

For more information, see Section 4.1.1.1 General Settings.

Unsubscribe Pages

Previously, unsubscribing from a list required either logging in to the membership pages or clicking on an unsubscribe link in a message. New pages, which can be linked from any web page, have been added specifically for unsubscribing from lists without first logging into the membership pages.

For more information, see Section 11 Subscriber Access Web Page URLs and Customization.

Subscriber Options

The automatically generated subscriber pages now provide functions that allow subscribers to change their subscriber options, such as mail headers.

For more information, see Section 10.2.1 Subscribing from the Membership Area.

In addition, subscriber profiles now contain a section that lets the data administrator have access to these options, just as the subscriber would.

For more information, see Section 9.1.1 Editing Member and Subscriber Profiles.

Special List Mailing Condition

In a LISTSERV condition (LISTSERV list target groups with the special list message defined), it is now possible to prefix the parameter name with the "text:" string. Because of this, a parameter that is immediately enclosed with quotes will be interpreted as a text-parameter, and a parameter that is not immediately enclosed with quotes will be interpreted as a number-parameter unless the parameter name starts with "text:"; in which case, it will also be interpreted as a text-parameter.

For more information, see Section 14.3.2 Special List Messages.

Job Management Enhancements

Numerous enhancements have been made to make job management easier to perform. These enhancements include:

- A due date can now be assigned to each job. The Dashboard lists the jobs that are due next and the Open Jobs list shows the due date, making it easy to find the jobs that require attention.

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- Jobs can now be assigned to categories.
- The three job lists – Open Jobs, Ongoing Jobs, and Completed Jobs – can be made to show jobs in specific categories.
- Jobs can be automatically archived a set number of days after delivery. The administrator can provide a default setting for all users as well as for each group or single user. Job owners can change the auto-archive setting for individual jobs.

  For more information, see the Administrator's Manual for LISTSERV Maestro 3.0 and the User's Manual for LISTSERV Maestro 3.0.
- All three job lists – Open Jobs, Ongoing Jobs, and Completed Jobs – have a filter that can be used to narrow down the list of jobs displayed. This makes it easier to find jobs fitting certain characteristics.
- In all three job lists (Open Jobs, Ongoing Jobs, and Completed Jobs), it is now possible to select several jobs at once to perform group actions such as deleting or archiving the jobs, or assigning them to a category.

  For more information, see the User's Manual for LISTSERV Maestro 3.0.

Account Administration Enhancements

Several enhancements have been made to improve the administrator's ability to manage and protect a user's accounts. These enhancements are described in the following sections.

User Identities

The LISTSERV Maestro administrator may now define "identities" in the Administration Hub. An identity is a collection of several accounts, which may be single user accounts or group accounts, within the same group or in different groups. When logged in to an account that is a member of an identity, a user may switch to any of the other accounts in that identity without having to log out and log back in again.

For example, a university may have a group that handles admissions-related mailings, another group for faculty communications, and yet another group for alumni relations. Though the groups are distinct, they may share one technical staff member who handles the data administration for all three groups. An identity may be defined for the three data administrator accounts owned by this staff member to facilitate moving between the three accounts. Additionally, non-privileged accounts owned by the same staff member could also be assigned to that identity so that the data administrator can easily check what is available to the other accounts in the group.

For more information, see the Administrator's Manual for LISTSERV Maestro 3.0. For information about switching to other accounts within an identity, see the documentation about the **Logout** menu option on the Toolbar (Section 1.2.1 The Toolbar).

Advanced Security

The LISTERV Maestro administrator may now define the number of allowed unsuccessful login attempts a user can have before being locked out of the LISTSERV Maestro User Interface or for the Administration Hub. This additional security is a good way to protect against dictionary attacks, which is a technique used to gain illegal access to a system by automatically employing a list of words in a dictionary to determine the

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login password for a given user account. The effectiveness of such an attack can be reduced by only allowing a limited number of invalid login attempts and by locking access to the account for a certain period of time.

For more information, see the Administrator's Manual for LISTSERV Maestro 3.0.

Remote Log Access

The three main LISTSERV Maestro components all write their own log files. These files can be found in the "logs" subfolder of each component's home folder inside of the installation folder.

However, in some situations the administrator does not have access to these folders, but still wants to access the log files.

To solve this, LISTSERV Maestro offers remote log file access. The remote access allows an administrator to download the log files from the server, directly in the web-browser.

For more information, see the Administrator's Manual for LISTSERV Maestro 3.0.

Globally Closing Datasets for Maintenance

The LISTERV Maestro administrator can now define whether or not all datasets are closed for maintenance. This will globally close all datasets for maintenance (in preparation of a server upgrade, etc.). This setting overrides all individual dataset settings.

For more information, see the Administrator's Manual for LISTSERV Maestro 3.0.

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Section 1 Introduction to LISTSERV Maestro 3.0

Designed specifically to work with LISTSERV 15.0, LISTSERV Maestro allows users to collect and store recipient data so it can be used to easily create and send personalized email messages. All interaction with LISTSERV Maestro takes place using an intuitive Web interface. Incorporated into the powerful tool is a tracking component that can collect data when a recipient opens an email message or clicks on a URL contained within the message.

The LISTSERV Maestro program is comprised of three components that work together:

- **The Administration Hub** – Controls all user and program settings. The HUB is the central component that stores registry and account information. It is accessed both by the Maestro User Interface and by Maestro Tracker to store and retrieve settings. It has its own administrator user interface.
- **The Maestro User Interface** – The actual user interface. Individuals and groups use it to create and distribute customized email messages. It is also used to access, view, and download the collected tracking data, and to manage the Recipients Warehouse.
- **The Maestro Tracker** – Receives and compiles tracking data from delivered email messages.

In addition to LISTSERV Maestro's three components, LISTSERV Maestro also relies on the existence of an installation of **LISTSERV® 15.0**.

LISTSERV Maestro 3.0 is installed by default with an internal system database using MySQL® 4.1.7. LISTSERV Maestro can use a separate, external database to store its internal data. LISTSERV Maestro can also use separate databases to provide recipient lists from database tables. Supported DBMS programs for storing the system database are:

- Oracle® 8*i*, 9*i*, 10*g*, and compatible versions
- DB2® V7.2, V8.2, and compatible versions
- MySQL® 4.x and compatible version, as well as 3.23.42 and later 3.23x builds
- SQL® Server 7.0 and 2000

In addition, any ODBC-compatible database can be used as a source of recipients.

LISTSERV and LISTSERV Maestro also require access to one or more SMTP servers to perform the actual delivery of email jobs for LISTSERV Maestro and LISTSERV. Any standards-compliant SMTP server will work.

The three LISTSERV Maestro components, LISTSERV, the SMTP server(s), and the optional database(s) may be installed on any combination of hosts, from one single host shared by all components to six or more dedicated hosts, one for each component (it is possible to have multiple LISTSERV servers and multiple SMTP servers). For more information on host restrictions, installing LISTSERV Maestro, and starting and stopping the LISTSERV Maestro service, see the LISTSERV Maestro Installation Manual. For more information on preparing databases to work with LISTSERV Maestro, see the LISTSERV Maestro Administrator's Manual.

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1.1 System Requirements

Depending on the operating system of the client used for the access, the following browsers are supported when accessing the Maestro User Interface or Administration Hub:

- Client with Windows – Microsoft® Internet Explorer 5.5 or later, Mozilla® 1.0.0 or later, other browsers based on a compatible Mozilla version (e.g., Firefox 1.0 or later, Netscape® 7.0 or later).
- Client with Linux – Mozilla® 1.0.0 or later, other browsers based on a compatible Mozilla version (e.g., Firefox 1.0 or later, Netscape® 7.0 or later).
- Client with Mac OS X – Mozilla Firefox or the Mac native Safari browser (version 2.0, build 412 or later).

To access the Maestro User Interface or the Administration Hub, we strongly recommend that only Windows, Linux, or Mac OS X is used with the browsers and browser versions listed. Other operating systems, browsers, or browser versions are *not* supported.

The client does not necessarily have to have the same operating system as the LISTSERV Maestro server. A Linux client can be used to access LISTSERV Maestro on a Windows server and vice versa. Similarly, the different components of LISTSERV Maestro may run on different operating systems, if they are installed on separate servers. For example, the Maestro User Interface and Administration Hub components may be installed on a Windows server, while the Maestro Tracker is installed on a Linux server.

Important: Recipients of email being tracked by LISTSERV Maestro may use whatever browser they wish to access the URLs contained in the messages sent by LISTSERV Maestro. Tracking occurs no matter which browser is used by email recipients.

1.2 LISTSERV Maestro Data Administration Interface

The first thing to understand is that LISTSERV Maestro's functionality centers on characterizing the various parts of an email "job." A "job" refers to all of the elements that make up the creation, scheduling, delivery, and tracking of customized email messages. Throughout the LISTSERV Maestro documentation, "job", "email job", and "mailing" are used interchangeably and represent the same thing – the summation of the multiple functions that make up the definition and distribution of customized email messages.

Next, The LISTSERV Maestro Interface contains two main features that enable users to easily navigate from one area to another. These two features are the Toolbar and Dashboard. The following sections describe each in detail.

1.2.1 The Toolbar

The Toolbar contains menus that give you quick access to the different functions in LISTSERV Maestro.

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Figure 1-1 The Toolbar

The **Mail Job** menu lets you create a new job, view a list of open jobs (jobs that you have not finished setting up the criteria for), view a list of ongoing jobs (jobs that repeat), and a list of completed jobs. The options available vary depending on where you are in the application and what function you are performing. The possible options are:

- **New** – Create a new job.
- **Import** – Import a previously archived job from the archives.
- **Open Jobs** – Display the list of open jobs that have not been authorized for delivery.
- **Ongoing Jobs** – Display the list of ongoing jobs that are authorized for delivery and that are currently being processed or awaiting delivery.
- **Completed Jobs** – Display the list of completed jobs that have been delivered or closed after a delivery failure.
- **Archived Jobs** – Display the list of archived mail jobs.
- **Job Info** – Define the general information of the email job, such as the job title.
- **Authorize Delivery** – Authorize the job for delivery.
- **Team Collaboration** – Define the team collaboration settings for the job.
- **Revoke Send Authorization** – Revoke the delivery authorization of the job.
- **Stop Sending** – Stop delivery of the job.
- **Re-Open Job** – Re-open the job for further editing.
- **Close Job** – Close the job in its failed state.
- **Retry Sending** – Retry the delivery of the failed job.
- **Resume Sending** – Resume the delivery of the job to the pending recipients.
- **Move Job to Archive** – Move the selected mail job to the archive. An archived job will no longer be accessible in the normal LISTSERV Maestro User Interface; it will appear as if the job was deleted. Only the LISTSERV Maestro administrator can import an archived job. Also, an imported job will be “frozen” into the state that it had when it was initially archived (for example, no more tracking events will be collected for this job).
- **Delete Job** – Delete the job.
- **Multiple Job Actions** – Work with one or several jobs at once with one of the following options:
    - **Edit Category of All Selected Jobs** – Edit the job category of all selected jobs.

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- **Edit Team Collaboration of All Selected Jobs** – Edit the team collaboration settings of all selected jobs.
- **Move All Selected Jobs to Archive** – Move all selected jobs to the archive.
- **Delete All Selected Jobs** – Delete all selected jobs (not recoverable).
- **Select All** – Select all jobs in the current job list.
- **Unselect All** – Unselect all jobs in the current job list.
- **Enable Multiple Job Actions** – Enable the multiple job actions. Checkboxes will appear next to every job, allowing multiple job selection, and the **Multiple Job Actions** menu will be displayed.

Note: By default, multiple job actions are disabled and the menu contains only the **Enable Multiple Job Actions** option. By selecting this option, multiple job actions become enabled, which has two effects: The menu now contains more options (with various actions that can be applied to several jobs at once), and in the job list, a checkbox is shown in front of each listed job. Check those jobs that you want to manipulate, then select the desired option from the **Multiple Job Actions** menu. This action will then be applied to all selected jobs.

For the administrator, the multiple job actions are always enabled and can not be disabled.

- **Disable Multiple Job Actions** – Disable the multiple job actions. Checkboxes and the **Multiple Job Actions** menu will be hidden.
- **Change Owner of All Selected Jobs** – Change the owner of all selected jobs.
- **Import all Selected Jobs** – Import all selected jobs from the archive.

The **Report** menu lets you create a new report, view any existing reports, and open the Delivered Jobs Statistics and Delivered Recipients Statistics reports. The options available vary depending on where you are in the application and what function you are performing. The possible options are:

- **New Report** – Create a new tracking statistic report.
- **Reports** – Display the list of currently available tracking statistics reports.
- **Completed Jobs Statistics** – Display the statistical report about the previously delivered jobs.
- **Delivered Recipients Statistics** – Display the statistical report about the recipients of previous jobs.

The **Recipient Warehouse** menu lets you create new and manage datasets, lookup tables, and target groups. You can also edit the bounce process settings for the warehouse. The options available vary depending on where you are in the application and what function you are performing. The possible options are:

- **New Dataset** – Create a new recipient dataset.
- **Datasets** – Display a list of currently available recipient datasets.

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- **Datasets & Lookup Tables** – Display the administrator's page for recipient datasets and lookup tables.
- **Lookup Tables** – Display the list of currently available lookup tables.
- **New Recipient Target Group** – Create a new target group using one of the following options:
  - **Based on Hosted Recipient List** – Create a new target group that is based on a hosted recipient list.
  - **Based on Classic LISTSERV List** – Create a new target group that is based on a classic LISTSERV list.
  - **Based on Uploaded Text File** – Create a new target group that is based on an uploaded text file (CSV-file).
  - **Based on Database Access by LISTSERV Maestro** – Create a new target group based on a database accessed by LISTSERV Maestro.
  - **Based on Database Access by LISTSERV** – Create a new target group based on a database accessed by LISTSERV.
- **Target Groups** – Display the list of currently available target groups.
- **Bounce Processing** – Define the bounce processing strategy for the Recipient Warehouse.

The **Utility** menu lets you create new and manage drop-in content and sender profiles; plus, it lets you change your account password. The options available vary depending on where you are in the application and what function you are performing. The possible options are:

- **New Drop-In Content** – Create a new drop-in.
- **Drop-Ins** – Display the list of currently available drop-ins.
- **New Sender Profile** – Create a new sender profile.
- **Sender Profiles** – Display the list of currently available sender profiles.
- **Change Password** – Change the password of the current user account.
- **Print Page** – Print the current page.

The **Dataset** menu lets you manage the datasets, categories, and members. The options available vary depending on where you are in the application and what function you are performing. The possible options are:

- **Dataset Overview** – Return to the Recipient Dataset Details screen.
- **Edit Dataset Settings** – Edit the dataset settings.
- **Edit Category** – Edit the settings of the category that is currently selected in the dataset tree.
- **Create** – Create hosted lists and categories using one of the following options:
  - **Create Hosted Recipient List** – Create a new Hosted Recipient List in this dataset.

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- **Create Hosted LISTSERV List** – Create a new Hosted LISTSERV List in this dataset.
- **Create Category** – Create a new category (either in the currently selected category or in the root of the dataset tree).
- **Convert or Clone Standard LISTSERV List** – Covert an existing, non-hosted LISTSERV list into a Hosted LISTSERV List or creates a Hosted LISTSERV List as a clone of an existing non-hosted LISTSERV list without changing the original list.

- **Browse/Edit Confirmed Members** – Browse through the members of the dataset and edit them manually.
- **Browse Confirmed Members** – Browse through the members of the dataset.
- **Add Single Member** – Add a single, new member to the dataset.
- **Modify Members by Upload** – Add, update, or delete members in the dataset by uploading a file.
- **Download all Members** – Download the current members of the dataset.
- **Team Collaboration** – Define the team collaboration settings for the dataset.
- **Refresh and Manage Linked LISTSERV Lists** – Define which of the non-hosted LISTSERV lists at the LISTSERV server to include in the dataset as Linked LISTSERV Lists. This option will also refresh the settings of the already linked LISTSERV lists by reading their current settings (as defined in the list headers) from LISTSERV so that LISTSERV Maestro will be aware of any changes to the lists.
- **Subscriber Access URLs** – Display the URLs for the Subscriber Access pages of the dataset's member area.
- **Tree Structure** – Manage operations in a dataset tree using one of the following options:
  - **Cut** – Cut the selected category from the dataset tree in preparation for a Cut & Paste operation (more precisely, the node will be marked as "cut", but it will only be removed from its current parent node once you select **Paste** in another node).
  - **Copy (Categories Only)** – Copy the selected category (and its subcategories) in the dataset tree in preparation for a Copy & Paste operation (more precisely, the category will be marked as "copied", but it will only be created once you select **Paste** in another node).

Note: Any hosted lists in the category or sub category will not be copied.

  - **Paste** – Paste a node into the currently selected node or root of the dataset tree. The node to paste must have been marked for "cut" or "copy" (see the **Cut** and **Copy** options above).
  - **Clear Cut/Copy State** – Clear the current "cut" or "copy" state and unmarks the node that was to be "cut" or "copied" (see the **Cut** and **Copy** options above).

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- **Delete all Members** – Delete all members (including unconfirmed ones) from the dataset.
- **Delete Dataset** – Delete the dataset, including all members and lists contained within it.
- **Delete Category** – Delete the category that is currently selected in the dataset tree.

The **Hosted List** menu contains options that are related to the hosted list currently selected in the dataset tree. The options available vary depending on where you are in the application and what function you are performing. The possible options are:

- **Dataset Overview** – Return to the Recipient Dataset Details screen.
- **Edit List Details** – Edit the hosted list.
- **Browse/Edit Confirmed Subscribers** – Browse through the subscribers of the hosted list and edit them individually.
- **Browse Confirmed Subscribers** – Browse through the subscribers of the hosted list (view only).
- **Add Single Subscriber** – Add a single, new subscriber to the hosted list.
- **Modify Subscribers by Upload** – Add, update, and delete subscribers in the hosted list by uploading a file.
- **Download all Subscribers** – Download the current subscribers of the hosted list.
- **Tree Structure** – Manage operations in a dataset tree using one of the following options:
  - **Cut** – Cut the selected hosted list from the dataset tree in preparation for a Cut & Paste operation (more precisely, the node will be marked as “cut”, but it will only be removed from its current parent node once you select **Paste** in another node).
  - **Clear Cut/Copy State** – Clear the current “cut” or “copy” state and unmarks the node that was to be “cut” or “copied”
- **Delete all Subscribers** – Delete all subscribers from the hosted list.
- **Delete List** – Delete the hosted list with all subscribers.

The **Linked LISTSERV List** menu contains options that are related to the Linked LISTSERV List currently selected in the dataset tree. The options available vary depending on where you are in the application and what function you are performing. The possible options are:

- **Dataset Overview** – Return to the Recipient Dataset Details screen.
- **List Configuration** – Open the corresponding LISTSERV Web Interface page for management of the selected Linked LISTSERV List.
- **Convert To or Clone As Hosted List** – Convert the selected Linked LISTSERV List into a Hosted LISTSERV List or clone a Hosted LISTSERV List from it (cloning will not change the original Linked LISTSERV List).

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- **Manage Linked LISTSERV Lists** – Define which of the non-hosted LISTSERV lists at the LISTSERV server to include in the dataset as Linked LISTSERV Lists.
- **Tree Structure** – Manage operations in a dataset tree using one of the following options:
  - **Cut** – Cut the selected Linked LISTSERV List from the dataset tree in preparation for a Cut & Paste operation (more precisely, the node will be marked as “cut”, but it will only be removed from its current parent node once you select **Paste** in another node).
  - **Clear Cut/Copy State** – Clear the current “cut” or “copy” state and unmarks the node that was to be “cut” or “copied”
- **Remove Link to LISTSERV List** – Remove the link to this LISTSERV List (removes the Linked LISTSERV List node from the dataset tree and the actual list at LISTSERV will remain the unchanged).

The **LISTSERV** menu takes you to specific areas in the LISTSERV Web Interface. The options available vary depending on where you are in the application and what function you are performing. The possible options are:

- **Server Administration Dashboard** – Open the Server Administration Dashboard of the LISTSERV Web Interface.
- **List Administration Dashboard** – Open the List Administration Dashboard of the LISTSERV Web Interface.
- **Site Configuration** – Open the site configuration page of the LISTSERV Web Interface.
- **LISTSERV Archives** – Open the LISTSERV archives page of the LISTSERV Web Interface.
- **Server Reports** – Contains options for reports in the LISTSERV Web Interface.
  - **Server Usage Reports** – Open the server usage reports page of the LISTSERV Web Interface.
  - **Anti-Virus & Anti-Spam Reports** – Open the anti-virus and anti-spam reports page of the LISTSERV Web Interface.
  - **Server Activity Reports** – Open the server activity reports page of the LISTSERV Web Interface.

The **Back To** menu is a quick way to return to the previous screen or to one of the recently visited screens. The possible options are:

- **Dashboard** – Go back to the Dashboard screen.
- **Selected Job "JOB NAME HERE"** – Go back to the job with the given name.
- **Create New Job** – Go back to the Start New Job screen.
- **Selected Report "REPORT NAME HERE"** – Go back to the tracking report with the given name.
- **Create New Report** – Go back to the Define Report screen.

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- **Selected Dataset "DATASET NAME HERE"** – Go back to the dataset with the given name.
- **Create New Dataset** – Go back to the Recipient Dataset Definition wizard.
- **Selected Lookup Table "LOOKUP TABLE NAME HERE"** – Go back to the lookup table with the given name.
- **Create New Lookup Table** – Go back to the Lookup Table screen.
- **Selected Target Group "TARGET GROUP NAME HERE"** – Go back to the target group with the given name.
- **Create New Target Group** – Go back to the Target Group Definition wizard.
- **Selected Drop-In "DROP-IN NAME HERE"** – Go back to the drop-in with the given name.
- **Create New Drop-In** – Go back to the Drop-In Content Element screen.
- **Selected Sender Profile "SENDER PROFILE NAME HERE"** – Go back to the sender profile with the given name.
- **Create New Sender Profile** – Go back to the Sender Profile screen.

The **Preferences** menu contains options for defining various user preferences. The possible options are:

- **User Interface** – Contains options for defining preferences for the User Interface.
  - **Date and Number Formats** – Define the date, time, and number preferences for the User Interface.
  - **Display** – Define the display preferences for the User Interface.
- **Mail Jobs** – Contains options for defining job-related preferences.
  - **New Mail Job** – Define the preferences for a new job, including the team collaboration preferences.
  - **Recipients** – Define the preferences for the recipient definition of a job.
  - **Content** – Define the preferences for the content definition of a job.
  - **Tracking** – Define the preferences for the tracking definition of a job.
  - **Delivery Test** – Define the preferences for the delivery test of a job.
  - **Scheduling** – Define the preferences for the schedule definition of a job.
- **Reports** – Contains options for defining preferences for reports.
  - **New Report** – Define the general tracking report preferences.
- **Datasets** – Contains options for defining recipient dataset preferences.
  - **Team Collaboration** – Define preferences for the team collaboration settings for recipient datasets.

The **Logout** menu logs you out of the LISTSERV Maestro Interface. For a user account that is not part of an identity, then this menu appears as a single item, which, if you click

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on it, allows you to log out from LISTSERV Maestro. For a user account that is part of an identity, then this menu has the following options:

- **Logout this Account** – Log out from LISTSERV Maestro.
- **Switch Account** – Switch to a different account in the same identity (without the need to logout and login again).

The **Help** icon is used to access the help associated with the current screen.

1.2.2 The Dashboard

New

The opening screen of LISTSERV Maestro's interface is called the Dashboard, providing a quick summary of what has happened recently and what is due to happen in the future.

The Dashboard contains five sections that may be displayed, hidden, or rearranged. This allows for a convenient and easy way to customize the information shown, making it possible for you to see what is most important to you.

Note: The administrator has the option to show a summary of all user accounts, certain user accounts, or just your user account on the Dashboard.

The Dashboard sections are:

- **Currently in the System** – This section contains the general statistics for your account, such as jobs in progress, number of jobs completed, etc.
- **Recently Visited** – This section provides shortcuts to the most recently used jobs, reports, etc., making it easy for you to resume work in one area if you interrupted it to visit another area. The areas visited may also be available in the **Back To** menu on the Toolbar
- **Jobs Due Next** – This section contains a list of jobs that are currently open and that are due next for authorization. This section does not show any jobs that have a "Authorize Due By" date configured.
- **Current and Upcoming Deliveries** – This section contains a list of jobs that are currently being delivered and that are scheduled for an upcoming delivery. From this section, you can also view any failed jobs that have yet to be closed or re-opened.
- **Recent Deliveries** – This section contains a list of jobs that have been recently delivered and jobs that have attempted delivery but failed.

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Figure 1-2 The Dashboard

To update the data displayed on the Dashboard, click the **Refresh** link. The date and time of the data being viewed is shown next to this link.

To rearrange the order in which the sections are displayed on the Dashboard, click the up or down arrows that are located in the top and bottom right corners of each section.

To hide or show a section, click the **Hide/Show Dashboard Sections** link. This link opens the Hide/Show Dashboard Sections screen. To show a section, check the box associated with that section. To hide a section, uncheck the box.

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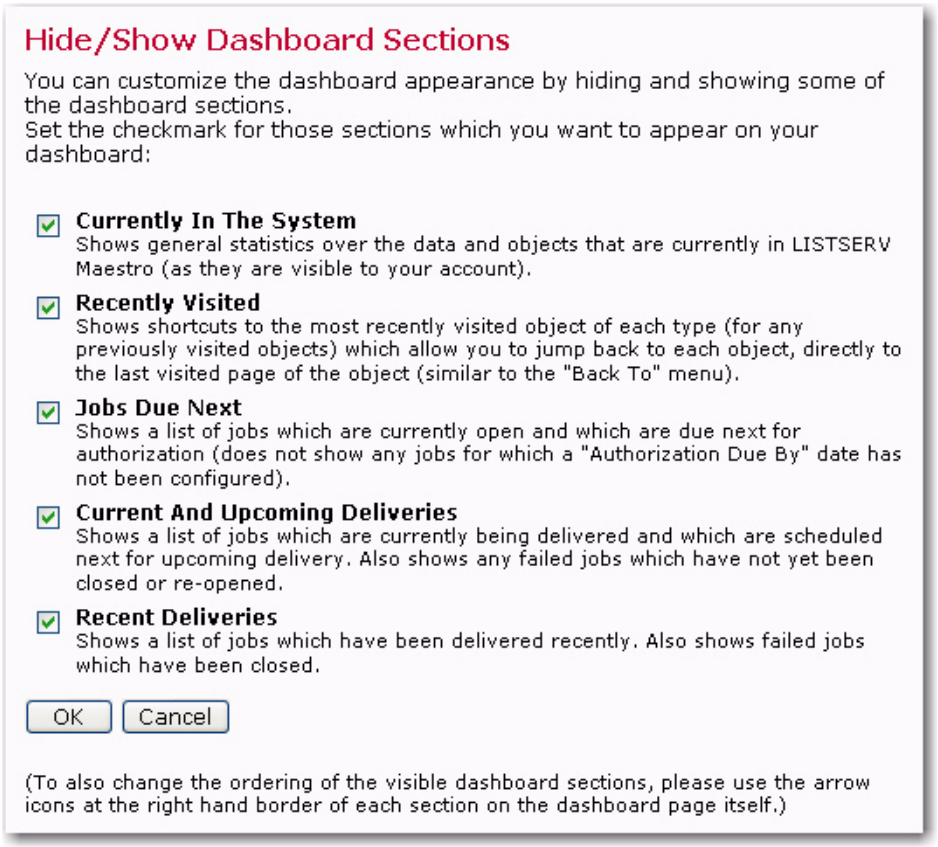
Figure 1-3 The Hide/Show Dashboard Sections screen



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Section 2 Data Administration in LISTSERV Maestro

The data administrator account can simplify and streamline the use of recipient data and databases for email jobs to the point where users do not need to know anything about how and where data is stored in order to define recipients for a mailing. This can be done in several ways. LISTSERV Maestro can be set up to collect and store recipient data using its own interface. Once configured, it is not necessary to interact directly with the database within the DBMS. Recipient lists can be created from this information for users to employ when sending email jobs.

LISTSERV Maestro can also use an existing external database to select recipients for email jobs. The collecting and storing of recipient data takes place independently of LISTSERV Maestro. To utilize this method of selecting recipients requires a working knowledge of the DBMS involved, as well as knowledge of how the data is organized and how to query the database. A web form or other means to gather recipient data and populate the database is also necessary. This may entail HTML coding and scripting, depending on the individual needs of each organization.

Once a source for collecting recipients and recipient data is established and connected to LISTSERV Maestro, end users need a simple means of selecting recipients and creating personalized messages. The data administrator can build and save reusable and parameterized queries within LISTSERV Maestro; these reusable queries are called **recipients target groups**. End users can then use these target groups to select the recipients for their jobs from a variety of places including external databases, internal hosted lists, uploaded text files and more. The data administrator builds the recipient target groups by writing SQL statements to retrieve data from a data source. The data administrator also designs the methods end users employ to select the data (in a series of check boxes, drop-down menus, or text boxes).

There are many advantages to using recipient target groups.

- Using recipient data stored in a database can save time and system resources.
- The database can be continually updated until the time the job is sent, ensuring that the most current data is used for the job.
- Recipient target groups are shared among group members and can be reused for multiple jobs.
- Parameters can be inserted into recipient target groups so that end users have some control over what recipients are retrieved from the database for each job. Using parameters also reduces the number of individual SQL statements that need to be written for jobs.
- The data administrator does not need to be involved with any other parts of email jobs.
- Specific recipient target groups can be removed from use without deleting them. They can be reinstated whenever desired.
- Recipient target groups can be organized into categories for easy recognition.

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2.1 Role of the Data Administrator

In order to assume effectively the role of a data administrator in LISTSERV Maestro, it is necessary to have access to, and information about, the systems involved. It is also helpful to understand the types of recipient data being collected and how it may be used in email jobs. All data administrators need is a LISTSERV Maestro user account with the **administer target group and hosted recipient data** option selected. The LISTSERV Maestro administrator can create this type of account. For more information, see the Administrator's Manual for LISTSERV Maestro 2.1.

2.2 External Database Requirements

Data administrators who set up connections with an external database and send queries through LISTSERV Maestro or through LISTSERV in order to retrieve recipients need:

- To understand how the institution's data is stored and organized, including table names and relationships as well as column types and names. This impacts the ability to write SQL statements and parameters within SQL statements to retrieve specific data.
- Working knowledge of SQL.
- In the case of LISTSERV Maestro accessing an external database:
  - To know the type of database and specific name of the database used. This determines the database plugin that LISTSERV Maestro uses to communicate with the specific type of database, for example IBM DB2 or MySQL. For more information on database plugins, see Section 5.2 Registering a Database Plugin in the LISTSERV Maestro Administrator's Manual.
  - Access to the database user account that is set up to work directly with LISTSERV Maestro including the username and password for the account.

Tip: For more information on preparing specific databases for use with LISTSERV Maestro, see the Administrator's Manual for LISTSERV Maestro 2.1.

- In the case of LISTSERV accessing the database:
  - Database server name, if not the default.
  - Name of the **Email** column.
  - Name of the **Name** column (this is optional).
  - Names of any additional columns in the database to be used for mail merging.

Being familiar with Section 15.2 Creating and Managing Drop-In Content Elements and Section 16 Advanced Use of System Drop-Ins in the LISTSERV Maestro User's Manual can also be helpful to data administrators. The concepts used in defining and creating drop-in elements are very similar to defining and creating parameters in SQL statements. Both use special tags to set the name of the element or parameter off from the rest of the text. Tags for drop-ins and parameters follow very similar rules.

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2.3 Hosted Data Requirements

2.3.1 Hosted Data Requirements

The data administrator's role in collecting recipient data hosted within LISTSERV Maestro is to establish the types of data collected and design the way this information is gathered. The data administrator also creates and designs mailing lists used to send email messages to recipients.

LISTSERV Maestro takes the hard work out of creating a dataset and lists, but it cannot do the planning. Before creating a dataset and lists, the data administrator needs to think about the answers to these questions:

- How will this dataset be used?
- What data will the subscribers need to provide so that the mailings can be precisely targeted and customized? What data will they be willing to provide? What data will need to be collected for all members, and what data are needed only for particular lists?
- What kinds of target groups will be needed? What questions will the job reports need to be able to answer?
- What types of lists will be needed? Only announcement lists or will there also be a need for discussion lists?
- For announcement lists, will mailings always be sent to all subscribers or will there be a need to target subsets of the lists?
- Will archives be needed for any LISTSERV lists?
- Will auto-deletion of bouncing addresses be needed?
- Will subscribers be allowed to manage their own subscriptions and subscribe and unsubscribe themselves, or will only the database administrator have access to the membership data?
- Will the subscriber pages need to be customized or is the "out-of-the-box" look acceptable?

For each data item to be collected (for the dataset or the list) the data administrator needs to think about the answers to these questions:

- What **type** is it? (Text, Number, Boolean, Single Select, Multiple Select)
- If **Single Select** or **Multiple Select**, what are the possible selections?
- Is it optional or mandatory? If optional, should the subscriber be able to enter and change it? If not, should it be shown to the subscriber as a read-only or hidden field?
- Are there any legal requirements associated with the kind of data to be collected? That is, are they subject to various financial, health, and other privacy laws of the country or state where the data will be stored as well as where the subscribers themselves are located (for example HIPAA, GLB Act, European Commission's Directive on Data Protection, and so on)? If so, does the facility meet the data

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protection requirements? If it does not, reconsider the data to be collected or upgrade the facility to meet legal requirements.

It is important to think about the data that will be collected before creating the dataset. Careful dataset design includes consideration of ease of creating target groups as well as making it easy for subscribers to enter and maintain their data. The dataset should contain all data fields that are shared by multiple lists, so that the subscriber does not have to enter or update the same information in several places. Data fields that are specific to a single list should be in that list. Careful consideration should be given to limiting the number of data fields that the subscriber must enter: subscribers faced with several pages worth of data entry fields may decide that they are not that interested in subscribing after all.

Important: From the technical point of view, one choice that must be decided before creating the dataset is whether there will ever be a need to support traditional LISTSERV lists. LISTSERV lists currently have two restrictions: there must be at least one name field, and there cannot be any selection menus in the base dataset or in the list data for the LISTSERV list.

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Section 3 Introduction to Hosted Data

Collecting and storing recipient data is one of LISTSERV Maestro's most powerful features. Organizations without a separate database can collect information from their mail recipients and store that data directly inside LISTSERV Maestro. This information can be used to create customized email messages and give recipients control over their subscription settings. Incorporated into this feature is the ability to create classic LISTSERV lists from the LISTSERV Maestro interface, combining the powerful features of LISTSERV with the easy-to-use LISTSERV Maestro interface.

The data administrator structures the way recipient data is collected by designing the dataset. Designing the dataset involves selecting the types of data to be collected and the names for each column of data. It also involves setting limitations and input validation rules for the collected data.

As the data administrator is designing the fields for recipient data, LISTSERV Maestro is also creating a form that can be made available on the Web so that recipients can sign up to receive mail and control their list subscriptions. Scripting is done automatically by the system so that information collected on the form is automatically placed in the host data database, called a **Recipient Warehouse**.

For those users who already have recipient data stored in a separate DBMS and do not wish to use hosted recipient data, the sections on hosted recipient data can be skipped. Proceed to Section 12 Introduction to Recipient Target Groups for information and instructions on how to create flexible yet powerful queries that can be used to retrieve data from other sources when defining recipients for a mail job.

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Section 4 The Recipient Warehouse

The Recipient Warehouse is LISTSERV Maestro's name for the method of creating, storing, and retrieving data within the system. Every group or single user account has its own recipient warehouse that is the repository for recipient datasets, lookup tables, and recipient target groups. Use the **Recipient Warehouse** menu on the Toolbar, and then select either **Datasets**, **Lookup Tables**, or **Target Groups** to begin working with recipient data. Creating and administering recipient target groups is covered beginning in Section 12 Introduction to Recipient Target Groups.

Figure 4-1 The Recipient Warehouse Menu

4.1 Recipient Datasets

A recipient dataset is a collection of data organized into fields and pertaining to recipients. The fields making up a dataset can have different types of properties that determine the kind of data within them, such as text, numbers, menu selections, dates and so on. The data administrator designs the datasets within a recipient warehouse, defining each field and the type of data it holds. The recipient dataset also contains mailing lists created by the data administrator that use the recipient data for job definition. The data is shared across all mailing lists that are created within the dataset. Individual lists within the dataset are allowed to have additional fields of data that pertain just to those lists.

As the dataset is being created, a web form is also being created that reflects the exact design of the dataset, including the order of the fields, the descriptions of each field, and the types of data to be collected. Each organization has to decide what kinds of data to collect, including the acceptable format of that data, and how the data is entered into the web form by anyone wishing to join a mailing list. Careful consideration of the dataset design will produce user-friendly web forms, and will collect the types of recipient data that can be used to send personalized and targeted messages to subscribers.

A link to the dataset web form can be placed on a web site where anyone can fill it out, entering the requested data, and then joining any available mailing lists. Data collected from the web form is automatically placed in the matching dataset, where it becomes available for use when sending email jobs to subscribers. Subscribers and their data can also be added to the dataset directly by the data administrator. Managing subscribers and subscriber data is covered in Section 9.1 Managing Dataset Members and List Subscribers.

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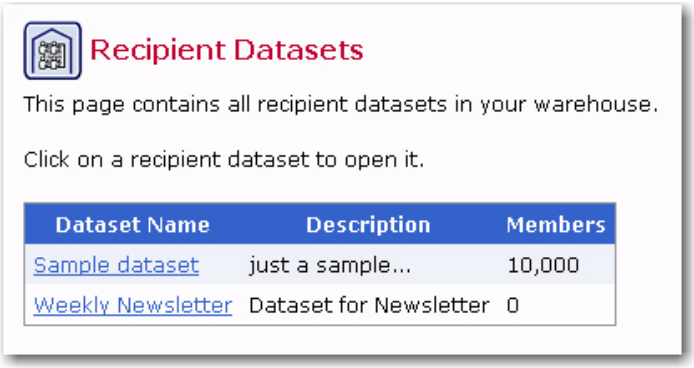
The Recipient Datasets screen contains a listing of the names of any existing datasets, their descriptions, and the number of members in each. Each dataset name is a link that opens the dataset for editing, member management, and customization of the web form.

Figure 4-2 Recipient Datasets



Part of the dataset design process is deciding the format of the data collected and how it is presented on the web form. One type of data that needs special mention is the selection list. A selection list is presented as a drop-down menu where one (single select) or more (multi select) items can be chosen. LISTSERV Maestro handles the creation of selection lists under the function of Lookup Tables. A lookup table is a collection of entries for a selection list. Lookup tables can be used by any dataset in the warehouse. When designed well, they can serve multiple functions across a warehouse. For example, a listing of university departments in one dataset can be used as a list of college majors in another. A listing of years can be used for graduation year in one dataset and anniversary year in another. Creating Lookup tables is covered in depth in Section 4.2.1 Creating a Lookup Table.

Tip: If your dataset is going to use selection menus, to save time, create the lookup tables first and the then create the dataset.

4.1.1 Creating a New Dataset

The Recipient Dataset Definition wizard guides you through all the steps of designing a dataset with its accompanying web form. From the **Recipient Warehouse** menu, select the **New Dataset** option. The Recipient Dataset Definition wizard opens. Use the **[Next ->]** and **[<- Back]** buttons to navigate through the wizard. Use the links at the top of the screen to open a particular page of the wizard. The **[Save & Exit]** button will save the current dataset settings of the open dataset even though the wizard may not be completed. The **[Cancel]** button will void any current selections and return to the Recipient Datasets screen.

The Recipient Dataset Definition wizard is comprised of four main screens – General, Profile Fields, Profile Fields Details, and Summary.

4.1.1.1 General Settings

The General screen defines the general information pertaining to the dataset.

- **Name** – The name of the dataset will appear on all the “public” subscriber pages. It is important to select a name that is reflective of the organization sponsoring the web pages and descriptive of the types of mailing lists available for members.

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- **List Administrator** (email address) – The list administrator email address is the address that confirmation email messages come from. Confirmation email is sent to all subscribers who join a member area and/or subscribe to a mailing list in the dataset. Confirmation email is also sent to members to when they change their passwords. It is important that this address be an authentic email address that can receive mail from subscribers.
- **Internal Description** – This description information is used internally on the Recipient Datasets tab for identification purposes.
- **Access Pages Language** – Select the language to use on the subscriber access pages of the dataset (and lists within the dataset). The drop-down list contains the languages that are currently available on your system. Choose English (Default) to use the system default language text. If available, choose English (Customized) to use your own customized English text. Other languages may also be available (depending on the foreign language translations you've created using the Resource Translation Tool; for more information on the Translation Tool, see the Interface Customization Manual for LISTSERV Maestro 2.1).

- **Member Password** – Select how the membership area password is to be defined for each member. You can choose between **Must be defined by the member when joining** and **The member will get a system defined password**. This option only affects how the initial password is defined when a member joins the membership area. In both cases, it is still possible for the member to change the password at a later time.

Note: If the LISTSERV Interface Link option (see below) is enabled, then the only available choice for the member password is the **The member will get a system defined password** option.

- **Quick Login** – Define if a special "quick login" option will be available on the login page of the membership area. If checked, then an additional checkbox will appear on the membership area login page. If a member checks this additional option during login, then their login information will be remembered by the system; therefore, when the member visits the login page again (with the same browser on the same computer), the email address and password fields are already filled out and the member only needs to click the **[Login]** button to login.

- **LISTSERV Interface Link** – Define if additional links to the LISTSERV Archive pages will appear in the membership area. If checked, then these additional links can be used by members to switch over to the LISTSERV Archive pages without having to login separately; therefore, they can view any LISTSERV list archive that are accessible. Consequently, enabling this option only makes sense if the dataset contains any Hosted LISTSERV Lists or Linked LISTSERV Lists for which an archive is available.

Notes: This option is only available if it has previously been enabled by the LISTSERV Maestro administrator (this is a setting in the Administration Hub). In addition, if you enable this option for a dataset, then the **Member Password** option (see

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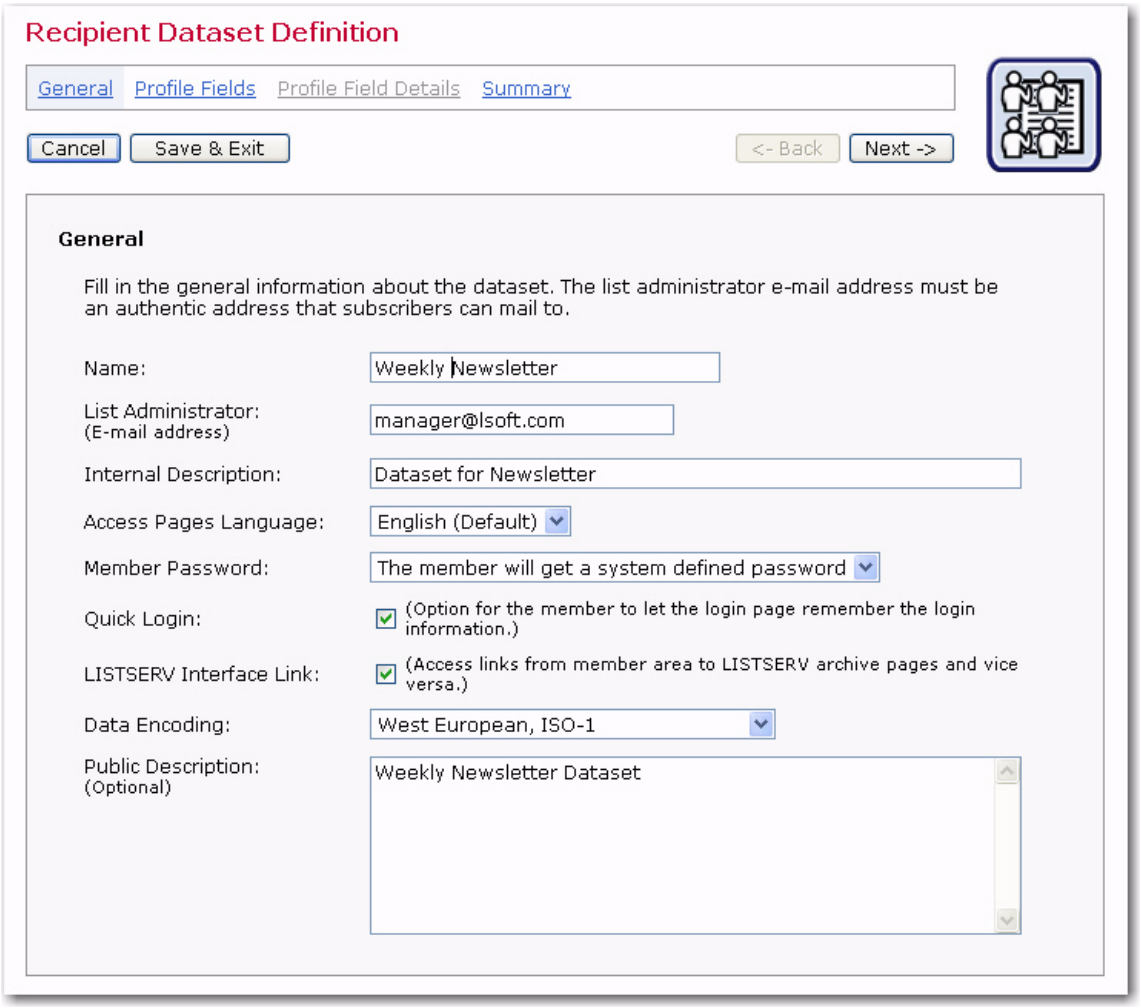
above) will automatically be set to **system defined password** and can no longer be changed to **user defined password**.

- **Data Encoding** – Select the type of encoding for the data entered in the dataset from the drop-down menu. This encoding will also be inherited by all mailing lists in the dataset, meaning that it also determines the encoding used to store the profile values of all list subscribers in all lists of the dataset.

Note: The encoding can no longer be changed once there is at least one member or list in the dataset. It can only be changed while the dataset is still empty.

- **Public Description** – This optional information appears on the web form and will assist anyone wanting to join a member area and subscribe to a mailing list to understand what the benefits of membership are. Any additional information about the organization can be placed here.

Figure 4-3 The Recipient Dataset Definition Wizard – General Screen



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4.1.1.2 Profile Fields

The Profile Fields screen displays a list of shared dataset fields. Every new dataset begins with one mandatory field, called **EMAIL**. With just this one field, it is possible to create an entire dataset. The email address of each member will be shared among all the lists created in this dataset. Other fields can be added to the dataset, and they too will be shared among all of the lists in the dataset. To add a new field, click the **Add Field** link.

For each new field, enter the following information:

- **Name** – The name of the field as it will be used internally by the system for mail merging and querying. Field names can only use upper and lower case letters A-Z and a-z, the numbers 0 – 9 and the underscore "_". Spaces and other special characters are not allowed.
- **Display Name** – The label that identifies the field on the web form. The display name will be seen by anyone accessing the public web pages to the membership area. It is also used in the data entry forms used in the Recipient Warehouse for entering and changing subscriber data. All alphanumeric characters are permitted, as well as spaces and special characters allowed by the encoding scheme selected in the General Settings for the dataset.
- **Data Type** – Choose the type of data to be entered in the field from the drop-down menu. Five different classifications of data are available:
  - **Text** – Text fields can accept any type of text, including dates in specific formats such as dd/mm/yyy or mm.dd.yyyy.
  - **Number** – Number fields accept any whole integers.
  - **Boolean** – Boolean fields are based on two states – true or false.
  - **Single Select** (lookup table) – A single selection field consists of a drop-down menu from which one item may be chosen. It may optionally be represented as a set of radio buttons.
  - **Multiple Select** (lookup table) – A multiple selection field consists of a drop-down menu where one or more items may be chosen. It may also be represented as a set of checkboxes.

Important: If you have any profile fields of the **Single Select** or **Multiple Select** type in your dataset, then you will not be able to add a Hosted LISTSERV List to the dataset (only Hosted Recipient Lists) because all profile fields defined in the dataset are shared by all lists in the dataset and Hosted LISTSERV Lists cannot have fields of these types.

- **Input Type** – Decide whether the data is mandatory for subscribers to enter into the web form or optional. Optional fields can be designated as hidden or read-only if the subscribers are not allowed to enter or change the data in those fields. Boolean fields cannot be optional due to the nature of the data type. Boolean fields may be visible or hidden.

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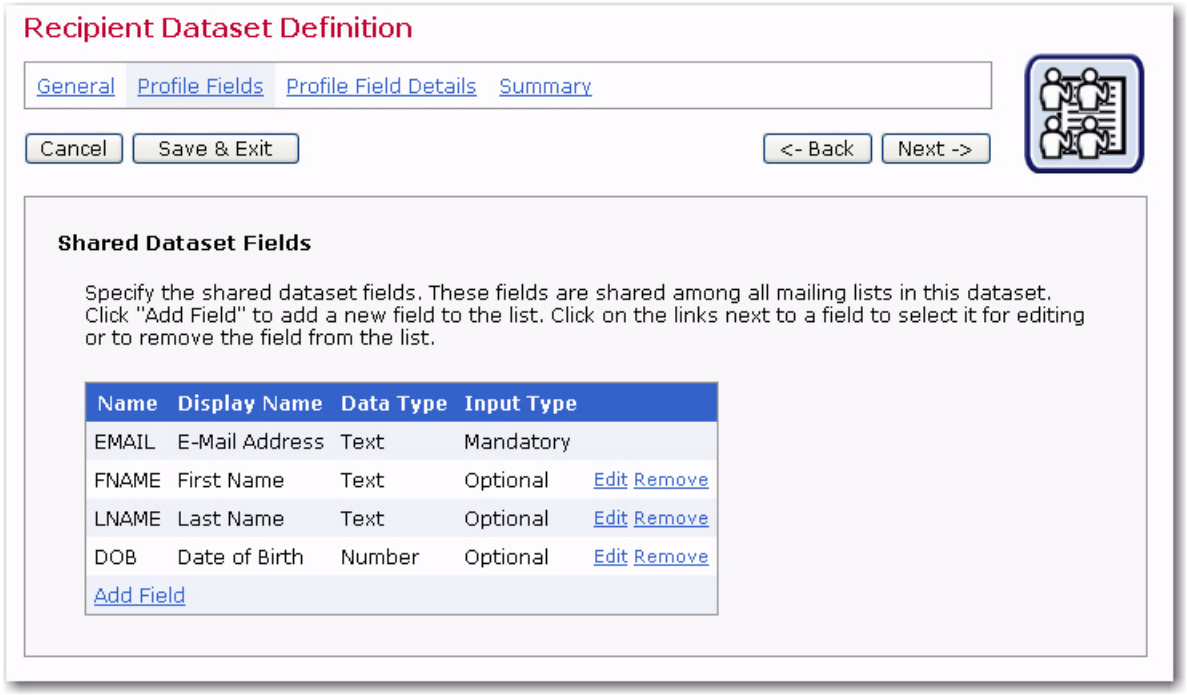
Figure 4-4 The Recipient Dataset Definition Wizard – Profile Fields Screen



Profile field rows are displayed in the edit state or in the display state. Any row in the display state has two associated links, **Edit** (sets the row into the edit state) and **Remove** (deletes the row after confirmation). Any row in the edit state appears with the corresponding edit controls so that it can be edited. It also has four associated links, **Reset** (forgets the changes made to the row and resets all row values to their state when the edit mode was last entered), **Up** (moves the row up in the ordering), **Down** (moves the row down in the ordering), and **Remove** (deletes the row, after confirmation).

4.1.1.3 Profile Field Details

The Profile Field Details screen appears differently depending on the data types in the dataset. Datasets containing selection fields need the relevant Lookup Table assigned to the field.

If the dataset contains profile field that are of the **Single Select** or **Multiple Select** type, then the Selection Field Details tab is displayed. This tab displays the name of each such profile field together with a drop-down menu that contains all lookup tables that can be used together with the profile field. Select a lookup table from the drop-down menu to associate it with the corresponding profile field. The description of the selected lookup table appears beneath the drop-down menu so that the selected lookup table can be verified as the desired one.

Notes: This step needs to be performed for each profile field that has one of the two types listed above.It is possible to assign the same lookup table to several different profile fields (if that is desired).

Only lookup tables that are using the charset encoding "ASCII" or that are using the same charset encoding as was specified for the dataset (or in case of a list,

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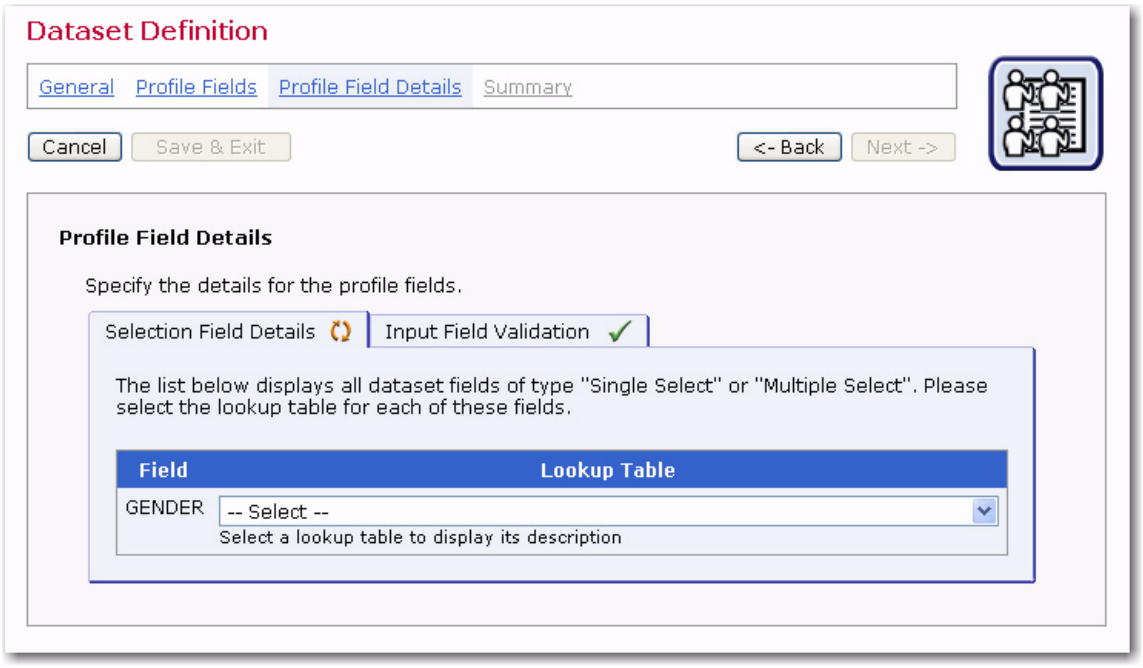
the encoding that was specified for the dataset the list belongs to) can be selected.

For a dataset that already contains members or lists, or for a list that already contains subscribers, then the lookup tables assigned to the already existing profile fields can no longer be changed. If a new field is added to such a dataset or list (on the Profile Fields screen), then the lookup table for this new field can be assigned, but the lookup tables of the other fields still cannot be changed.

Figure 4-5 The Recipient Dataset Definition Wizard – Profile Field Details Screen with Selection Field Details and Input Field Validation Tabs



This Input Validation tab only appears if there are any profile fields of the **Text** type (other than the **EMAIL** column of the dataset) or the **Number** type in the dataset or mailing list. In this case, the tab allows for optionally defining additional input validation rules for each of these fields.

The tab displays the name of each such profile field together with a drop-down menu containing the possible input validation types.

For Text Fields:

- **Accept all values** – No validation will be applied, all text input is valid (with a maximum length of 100, which is imposed by LISTSERV Maestro). Note that for some encodings, like UTF-8 or asian language encodings, the maximum character length may even be less than 100, depending on the specified value.
- **Date with format** – Input will be validated as a date (day, month, and year) according to the date format specified. For the date format, four different formats are available:
  - **yyyy-mm-dd** – Year, followed by month, followed by day, separated by a hyphen.

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- **mm/dd/yyyy** – Month, followed by day, followed by year, separated by a slash.
- **dd/mm/yyyy** – Day, followed by month, followed by year, separated by a slash.
- **dd.mm.yyyy** – Day, followed by month, followed by year, separated by a dot.

The input will only be accepted if the subscriber input can be interpreted as a valid date according to the chosen format. Note that for an optional field an empty input is also accepted.

- **Full Name** – Input will only be accepted if it can be interpreted as a valid "Full Name", meaning a first name followed by a last name. To fulfill this requirement, the input must consists of at least two text strings separated by at least one space character. Examples for valid "Full Names" include: "John Doe", "Frank N. Furter", "Dr. Dolittle" but also "a b".
- **String length range** – Text input will be validated so that the entered text is no shorter than the supplied minimum length and no longer than the supplied maximum length. Minimum and maximum length can both be the same value, in which case the entered text must have exactly the given length. Any input that does not fall into the given length range is not accepted. The given minimum must be 1 or more, the given maximum must be 100 or less, and the maximum must not be less than the minimum. Note that for an optional field an empty input is also accepted.
- **String length minimum** – Text input will be validated so that the entered text is no shorter than the supplied minimum length. Any input that is less than this value is not accepted. The given minimum must be between 1 and 100 (including). Note that for an optional field an empty input is also accepted.
- **String length maximum** – Text input will be validated so that the entered text is no longer than the supplied maximum length. Any input that is greater than this value is not accepted. The given maximum must be between 1 and 100 (including). Note that for an optional field an empty input is also accepted.

For Number Fields:

- **Accept all values** – No validation will be applied, all number input is valid (in the range of -9223372036854775808 to 9223372036854775807, which is imposed by LISTSERV Maestro).
- **Number range** – Number input will be validated so that the entered number is not less than the supplied minimum and not greater than the supplied maximum. Any input that does not fall into the given range is not accepted. The given minimum must be less than the given maximum. Note that for an optional field an empty input is also accepted.
- **Number minimum** – Number input will be validated so that the entered number is not less than the supplied minimum. Any input that is less than the minimum is not accepted. Note that for an optional field an empty input is also accepted.
- **Number maximum** – Number input will be validated so that the entered number is not greater than the supplied maximum. Any input that is greater than the maximum is not accepted. Note that for an optional field an empty input is also accepted.

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For a dataset that already contains members or lists, or for a list which already contains subscribers, then the input validation of already existing profile fields can no longer be changed. If a new field is added to such a dataset or list (on the Profile Fields page), then the input validation for this new field can be defined, but the input validation of the other fields still cannot be changed.

The Default Values tab is only visible when modifying a dataset or list that already contains subscribers and additional profile fields on the Profile Fields screen have been added. In this case, it is necessary to define defaults for the new fields that will be used for the already existing subscribers.

This tab lists all fields that have been added. Each field has a **Define** link. Click the link to define the default value for the given field. (For fields of the **Single** or **Multiple Select** type, before the default can be defined, a lookup table must first be assigned on the Selection Field Details tab.)

If the field is of the **Multiple Select** type (or **"visible"**, which is a variation of **Mandatory**), then a default will have to be supplied before leaving the wizard. For optional fields (or **"read-only"** or **"hidden"**, which are variations of **Optional**), then a default doesn't need to be supplied. If the default of such a field is left empty, then the empty value will be used for all existing subscribers.

4.1.1.4 Summary

The Summary screen is the final step in the Recipient Dataset wizard. This screen summarizes the settings of the dataset. If necessary, click the **[<- Back]** button to makes changes to the dataset settings.

Once the dataset is acceptable, set the access level using the drop-down menu. Datasets can have one of three levels of member area access:

- **Open to everyone** – Anyone can click on the membership area URL and have access to the membership area in order to join the area and subscribe to mailing lists.
- **Access for members only** – Only those who are current members can login and access the membership area.
- **No public access** – The membership area is not open for access to anyone.

The membership area can be temporarily closed for maintenance such as updating the membership list or other tasks by checking **Closed for maintenance**. Closing the member area for maintenance will prevent anyone from joining or existing members from changing their settings while the system is temporarily closed. Click the **[Finish]** button to save all the settings of the dataset. The Recipient Dataset Details screen opens.

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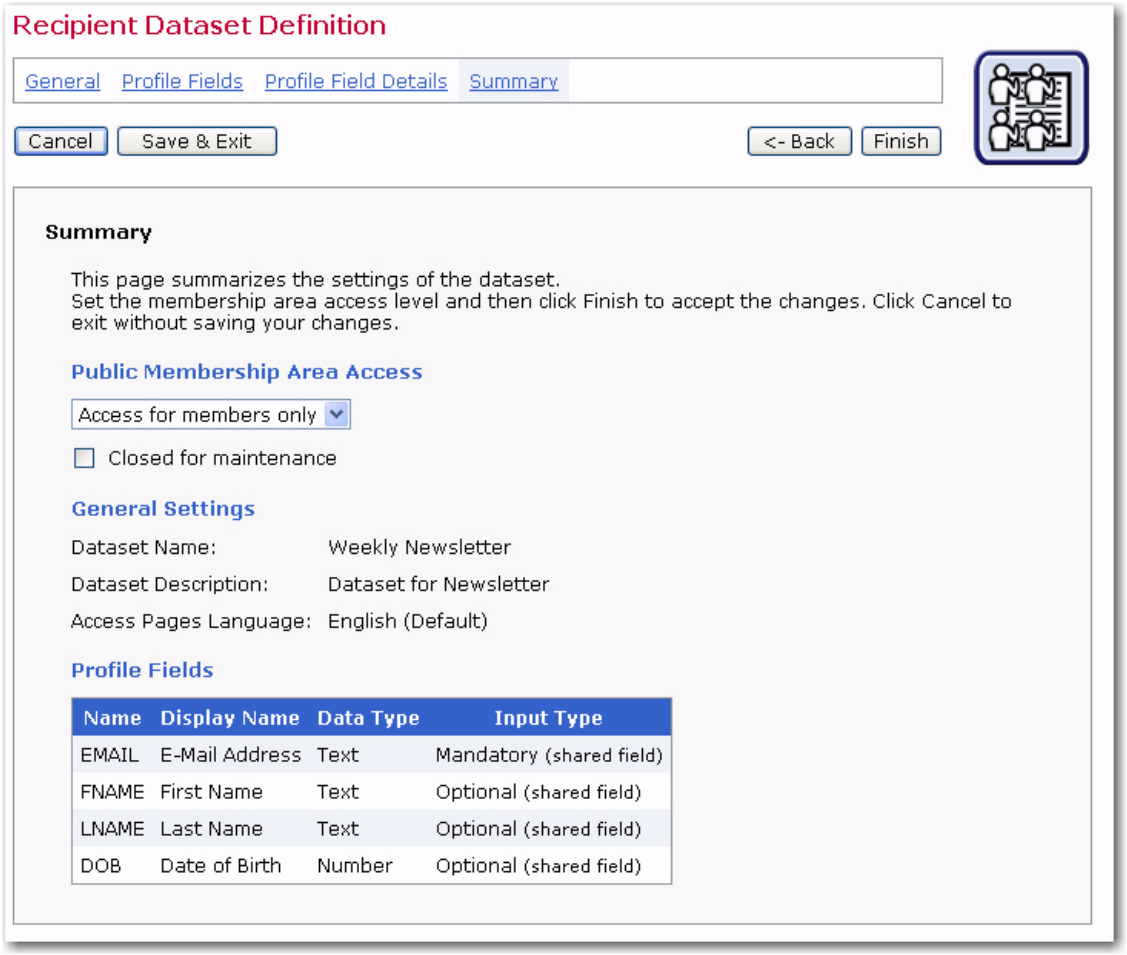
Figure 4-6 The Recipient Dataset Definition Wizard – Summary Screen



For more information on membership areas, see Section 10 Allowing Members to Join a Dataset. For information on customizing the membership area, see Section 11 Subscriber Access Web Page URLs and Customization.

4.1.2 Editing Existing Datasets

Once you have existing datasets in the Recipient Warehouse, their settings can be fully edited until there are lists or members added to them. After lists or members become part of a dataset, only limited editing capabilities are available. To edit the settings of an existing dataset, click on the dataset name from the Recipient Dataset screen. A split screen will appear showing the dataset and any lists in the left frame and the dataset information in the right frame. The **Dataset** menu is now available on the Toolbar. The **Edit Dataset Settings** option will open the Recipient Dataset Definition wizard so its settings can be changed.

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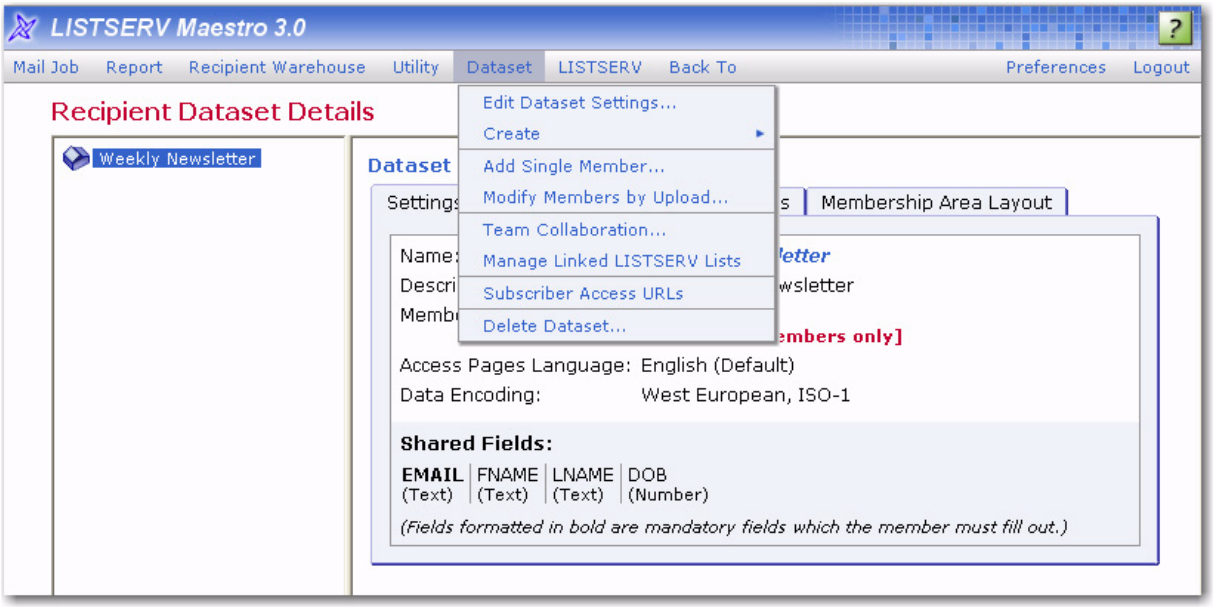
Figure 4-7 The Dataset Menu



If there are no members, mailing lists, or layout customizations in the dataset, all of the dataset settings may be changed without any repercussions.

If there are members or mailing lists in the dataset, the following settings can be changed without significant impact on the dataset: the name of the dataset, the list administrator email address, the public description, field display names, the access level of the membership area, and the closed for maintenance check box.

If there are members or mailing lists in the dataset, it is possible to add new fields, remove existing fields, reorder fields, or rename fields. However, as this requires a change in the structure of the underlying database tables, the dataset may be unavailable for a significant time while the entire dataset is rebuilt with the new structure. In order to prevent unanticipated disruptions to the dataset, these types of changes are disabled by default. In order to make such changes, it is necessary to first click on the **Enable advances changes** link on the Profile Fields screen of the Recipient Dataset wizard.

If there are Membership Area Layout customizations of templates that include data fields, then adding, removing, reordering, or renaming fields will break these customized templates and the customizations must be reapplied.

4.2 Lookup Tables

Lookup tables are fields of data that are shared across datasets in a warehouse. When used wisely, they can save time and resources by reusing a single set of data for many datasets and lists. For example, a list of countries of the world can be used to create a lookup table. If this information is collected by several lists or datasets in a warehouse, making a lookup table containing a list of countries once will make this available to all datasets and lists.

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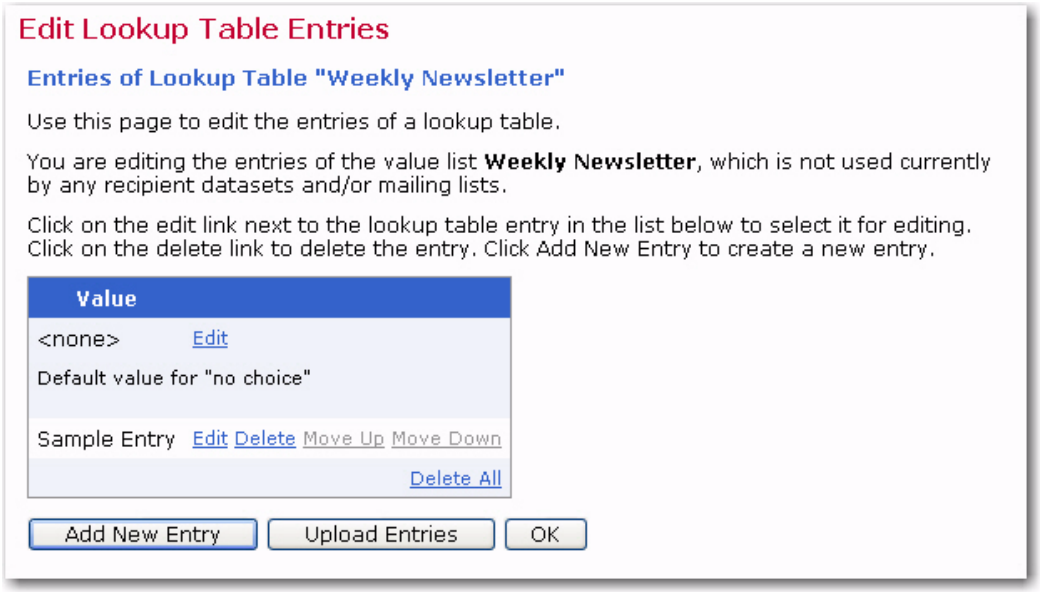
4.2.1 Creating a Lookup Table

To create a new lookup table, click **Recipient Warehouse** > **New Lookup Table** from the Toolbar. The Lookup Table screen opens. Enter a name for the lookup table, select the encoding for the data in the table, and then type in a description of the contents of the table. Click **[OK]** to continue.

Each lookup table requires an entry that becomes the default value for "*no choice*", meaning the value assigned to a field when members do not select from any of the items presented on the selection list. This entry can also be the first selection on the list, or the most popular or common selection on the list. LISTSERV Maestro defaults to an entry that says "*<none>*", but this can be changed by clicking the **Edit** link and adding different text.

Figure 4-8 Edit Lookup Table Entries



To change the default value for "no choice", click the **Edit** link. The Edit Lookup Table Entry screen opens. The default, <none>, is used if a subscriber does not select a choice from the lookup table. To use a value other than the default, enter a new value in the **Entry Text** field. This value may be up to 100 characters. The **Entry Text** field can not be empty.

Lookup table entries can be added manually one by one, or they can be uploaded from a text file that contains one entry per line. The number of entries for any single lookup table is limited to 1000 items. To add single entries, click the **[Add New Entry]** button. Type one item in the text box, and then click **[OK]**. Click the **[Add New Entry]** again to add the next item. To upload a text file, click the **[Upload Entries]** button. Browse for the file on a local drive, select it, and then click **[OK]**.

Once there are items listed in the lookup table, they can be edited, deleted, moved up, or moved down in the list. Use the adjacent links – **Edit**, **Delete**, **Move Up**, **Move Down** – to change the item in the table.

Click **[OK]** to accept the entries in the lookup table and return to the Lookup Tables tab.

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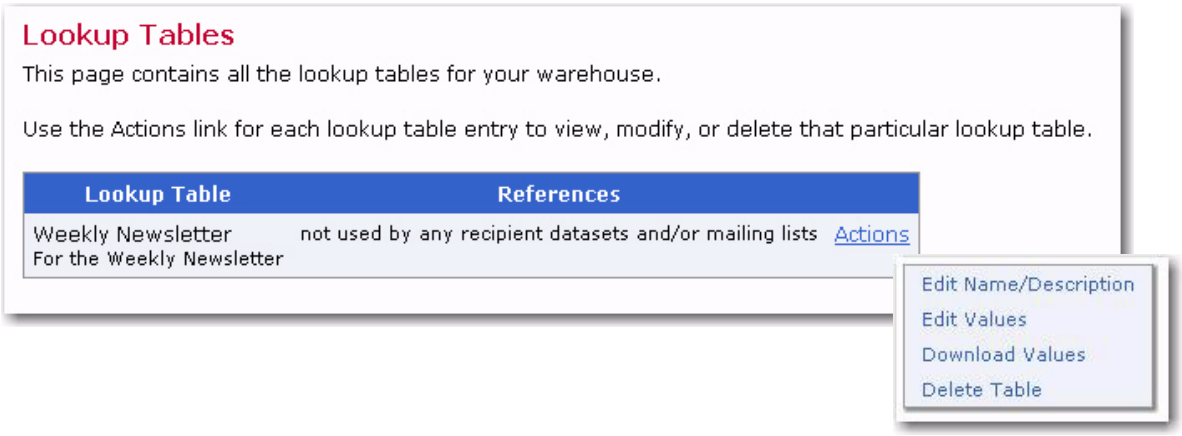
4.2.2 Editing Existing Lookup Tables

Once you have an existing lookup table in a warehouse, then its settings can be edited. To edit the settings for a specific table, go to the Lookup Tables screen, and then click on the **Actions** link to open a menu of actions that can be performed. You can edit the name or description, edit the values, download values, or delete the table. This menu may vary depending on the settings previously defined for the lookup table, and whether or not the table is being used by any recipient datasets and/or mailing lists. A lookup table cannot be deleted if it is being used by a recipient dataset or mailing list.

Figure 4-9 Editing an Existing Lookup Table from the Lookup Table Tab



4.3 Bounce Processing

The **Bounce Processing** option on the **Recipient Warehouse** menu opens the Bounce Processing Setting screen, which displays the bounce removal settings for all of the datasets in your Recipient Warehouse. These settings include:

- The number of bounces with a minimum time between the first and last bounce that it would take before an email address is removed from the Recipient Warehouse.
- The age a bounced email message has to be before it no longer counts against the number of bounces.

Figure 4-10 Bounce Processing Settings Screen

To change these settings, click the **Edit Settings** link. The Edit Bounce Processing Settings screen opens.

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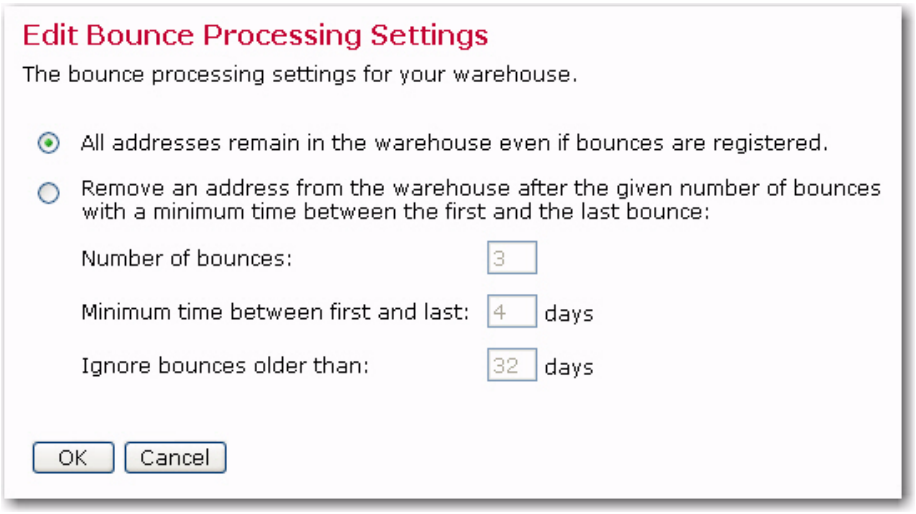
Figure 4-11 Edit Bounce Processing Settings Screen



Make your changes and then click **[OK]** to save. Click **[Cancel]** to ignore your changes and to return to the Bounce Processing Setting tab.

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Section 5 Introduction to Hosted Mailing Lists

Once there are defined datasets in the warehouse, mailing lists can be created for each dataset. Datasets with many lists can use categories and sub-categories that act like folders to help organize the lists for users and subscribers alike. Categories and the lists they contain are displayed in the left frame of the Recipient Dataset Details screen.

LISTSERV Maestro can create two different types of mailing list – hosted recipient lists and hosted LISTSERV lists. Each list type is denoted with its own icon style in the dataset so it can be easily identified. There are different features and functionality for each type of list. Deciding what the purposes are of the mailing lists in a dataset will help determine which type of list is best to create. Depending on the types of fields in the dataset, it is possible to have both types of list in one dataset.

Important: If there are selection menus in a dataset, it will not be possible to create hosted LISTSERV lists in that dataset. In order to have both types of list in a dataset, selection fields can be added to the individual hosted recipient lists instead.

Table 5-1 Features of Hosted Recipient Lists and Hosted LISTSERV Lists

Hosted Recipient List Features	Hosted LISTSERV List Features
Easy to use and no extra set up involving LISTSERV is required.	Requires extra setup within LISTSERV so that LISTSERV knows how to access the LISTSERV Maestro database.
Allows subscriber data fields where the subscriber can select values from a drop-down menu ("select one" or “select all that apply“).	Provides the special features of LISTSERV lists: - Discussion lists - Digests - Archives - Auto-delete configurable per list
Lists are controlled completely by LISTSERV Maestro.	List data is available and may be changed by LISTSERV.
Limited to announcement-only lists.	Lists can be announcement lists, moderated discussion lists, or unmoderated discussion lists.
Can only send messages using the LISTSERV Maestro interface.	Can send messages using any email client as well as the LISTSERV Maestro interface. (Tracking is limited to LISTSERV Maestro mailings.)
Powerful filters are available using a special target group definition wizard to segment recipients. The Target Group Definition wizard makes it possible to define the subset without worrying about SQL syntax.	Can segment standard list mailings using topics. Can segment special list mailings based on mail delivery settings, such as whether digest mode is selected or whether the subscription is set to “suspended” status. Special mailings can also specify an SQL query for selecting a subset of recipients.

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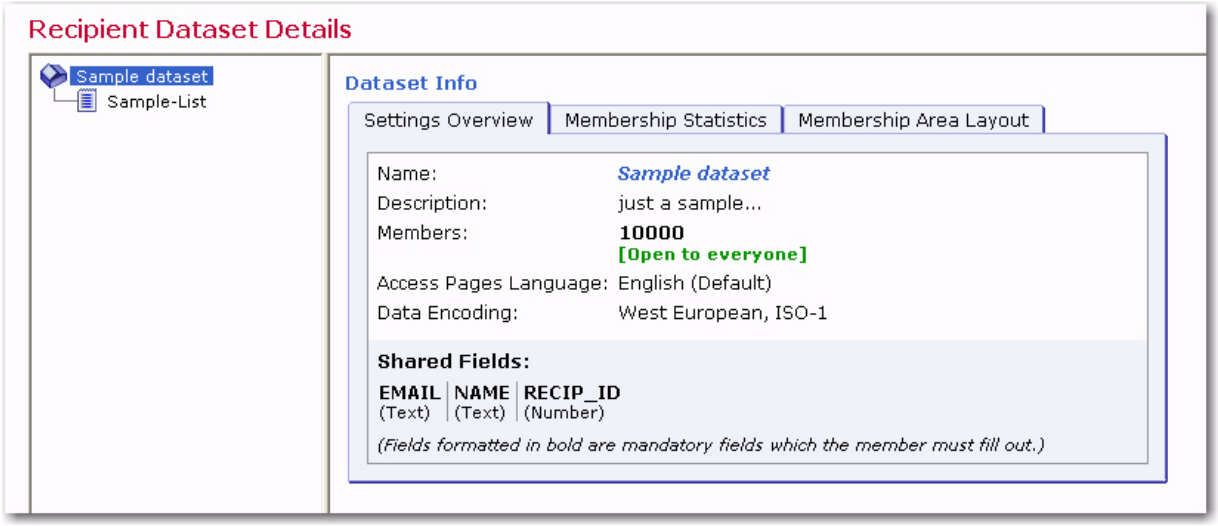
Section 6 Creating Hosted Recipient Lists

Hosted lists contain data from the dataset. They can also have their own data fields that are not shared among lists in the dataset, but belong exclusively to the list. Lists that do have their own fields will also have their own web subscription forms generated when the list is created. All the fields that appear in the dataset and in a particular list can be used as merged fields for messages sent to that list.

To create a new hosted recipient list, first select the dataset the list will be added to from the Recipient Datasets screen. The Recipient Dataset Details screen opens.

Figure 6-1 Recipient Dataset Details Screen



This screen is split into two frames. The left frame will display all the lists (if any) that belong to the open dataset. Datasets with many lists can use folders called “categories” to organize lists so that they are easier to find. See Section 8 Organizing Datasets for more information.

The right pane shows the actual overview of the dataset settings. Depending on the current user rights, the overview is displayed with two tabs (in case the logged-in user does not have access to the membership area layout customization) or three tabs, with access to the membership area layout customization using the Membership Area Layout tab. The settings overview displays the following details of the dataset:

- Name
- Description (the internal description, not the public description that is shown in the membership area where subscribers can see it)
- Current count of members (and how many of them are still unconfirmed)
- Current access state (open to everyone, access for members only, no public access, or closed for maintenance)
- Character encoding used to store the member and subscriber data (for example, "West European, ISO-1")

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- A listing of the shared fields defined in the dataset.

  The shared fields are fields that are common to the dataset and all lists in it. In other words, each list in the dataset has at least those fields defined for the whole dataset, and may optionally add its own fields to these shared fields. The fields are shown with their internal database name (also the merge-field name for that field) and, in parenthesis, their data type. Any mandatory fields are shown as bold. "Mandatory" means that members must fill out a value for these fields when joining the dataset.

Important Note: Once lists have been added to a dataset, some options for editing the dataset will be curtailed. Make sure the dataset is structured as desired before adding lists to it.

6.1 Hosted Recipient Mailing List Wizard

Similar to creating a dataset, creating a hosted recipient list is accomplished by using a wizard that guides you through the steps of designing the list and the accompanying web subscription form. To access this wizard, click **Dataset** > **Create** > **Create Hosted Recipient List** from the Toolbar. The Hosted Recipient List Definition wizard opens and it is comprised of four main screens – General, Profile Fields, Profile Field Details, and Summary.

6.1.1 General Settings

The General screen defines the general information pertaining to the list.

- **Name** – This is the name of the mailing list. Subscribers will see this name for the list on the web form when they subscribe. LISTSERV Maestro users will see the name of the list in the default hosted list target group that is automatically created when the list is populated with subscribers. See Section 13 Hosted Recipient List Target Groups for more details. Data administrators will see the list name in the dataset tree.
- **Internal Description** – The internal description is seen by users working within the Maestro User Interface.
- **Public Description** – The public description of the list appears on the subscription web form. If subscribers are permitted to select the lists they want to join and can view and change their subscription settings, having accurate descriptions will help them accomplish those tasks.

Once you've finished entering information, click **[Next ->]** to continue.

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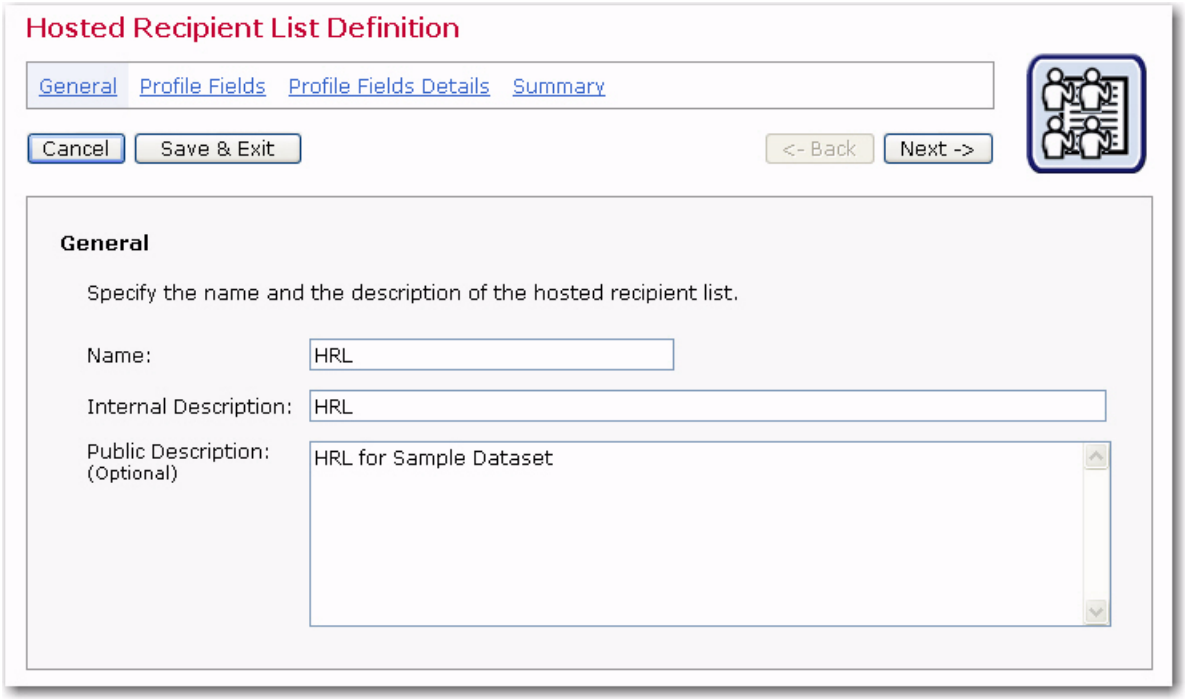
Figure 6-2 The Hosted Recipient List Wizard – General Screen



6.1.2 Profile Fields

The Profile Fields screen contains a list of the fields in the dataset. New fields can be added to the list. Any added list fields will not be shared with the other lists in the dataset. To add a new field, click the **Add Field** link.

For each new field, enter the following information:

- **Name** – The name of the field as it will be used internally by the system for mail merging and querying. Field names can only use upper and lower case letters A-Z and a-z, the numbers 0 – 9 and the underscore "_". Spaces and other special characters are not allowed.
- **Display Name** – The label that identifies the field on the web form. The display name will be seen by anyone accessing the list's public subscription page on the Web. All alphanumeric characters are permitted, as well as spaces and most special characters.
- **Data Type** – Choose the type of data to be entered in the field from the drop-down menu. Five different classifications of data are available:
  - **Text** – Text fields can accept any type of text, including dates in specific formats such as dd/mm/yyy or mm.dd.yyyy.
  - **Number** – Number fields accept any whole integers.
  - **Boolean** – Boolean fields are based on two states – true or false.
  - **Single Select (lookup table)** – A single selection field consists of a drop-down menu where one item from it may be chosen. It may also be represented as a set of option buttons.

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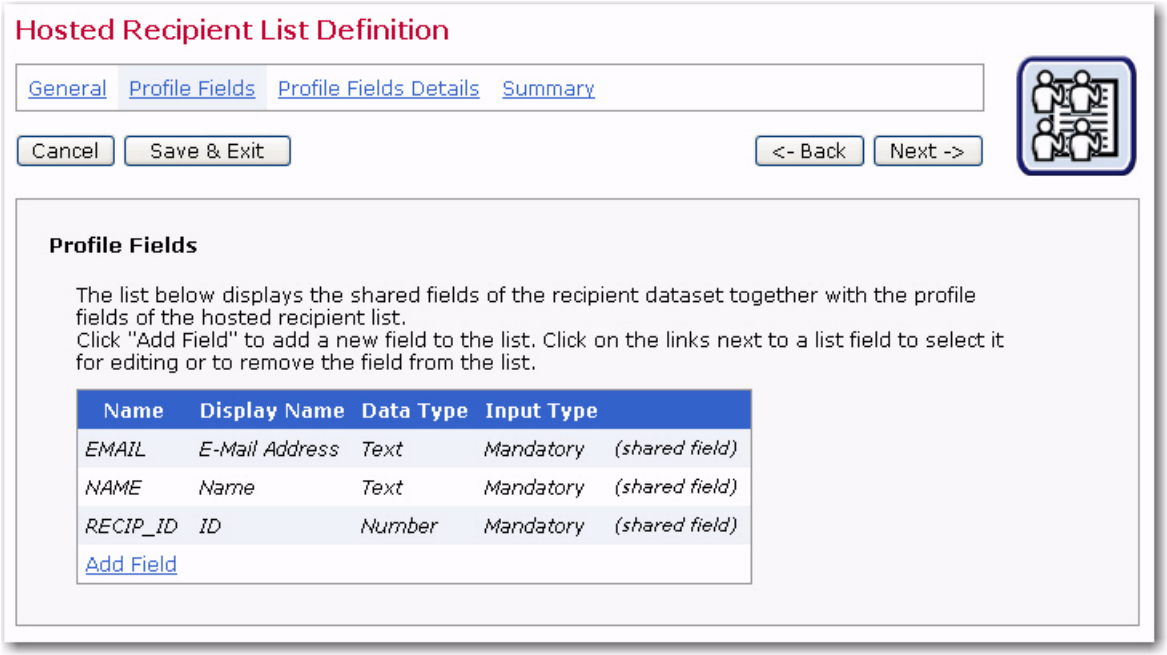
- **Multiple Select (lookup table)** – A multiple selection field consists of a drop-down menu where one or more items may be chosen. It may also be represented as a set of checkboxes.

- **Input Type** – Decide whether the data is mandatory for subscribers to enter into the web form or optional. Optional fields can be designated as hidden or read-only if the subscribers are not allowed to enter or change the data in those fields. Boolean fields cannot be optional due to the nature of the data type – the selection equates to either true or false. Boolean fields may be visible or hidden.

After list fields are created, they can be edited, removed, moved up, or moved down by using the corresponding links on the right side of the table. Fields that are part of the dataset cannot be moved or edited from this screen.

Once you've finished entering information, click **[Next ->]** to continue.

Figure 6-3 The Hosted Recipient List Wizard - Profile Fields Screen



6.1.3 Profile Field Details

The Profile Field Details screen has multiple tabs that allow you to toggle between the different settings for list profile fields. The number and type of tabs depends on the types of data fields added to the list.

6.1.3.1 The Selection Field Details Tab

The Selection Field Details tab only appears if there are profile fields of the **Single Select** or **Multiple Select** type in the dataset or mailing list. In this case, for each of these fields, the lookup table must be specified that will be used to define the values that the subscriber may select from.

This tab displays the name of each such profile field together with a drop-down menu that contains all lookup tables that can be used together with the profile field. Select a lookup table from the drop-down menu to associate it with the corresponding profile field. The

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description of the selected lookup table appears beneath the drop-down menu so that the selected lookup table can be verified as the desired one. This step needs to be performed for each profile field that has one of the two types listed above.

Notes: It is possible to assign the same lookup table to several different profile fields (if that is desired). In addition, only lookup tables that are using the charset encoding "ASCII" or that are using the same charset encoding as was specified for the dataset (or in case of a list, the encoding that was specified for the dataset the list belongs to) can be selected.

For a dataset that already contains members or lists, or for a list that already contains subscribers, the lookup tables assigned to already existing profile fields can no longer be changed. If a new field is added to such a dataset or list (on the Profile Fields page), then the lookup table for this new field can be assigned, but the lookup tables of the other fields still cannot be changed.

6.1.3.2 This Input Validation Tab

This Input Validation tab only appears if there are any profile fields of the **Text** type (other than the **EMAIL** column of the dataset) or the **Number** type in the dataset or mailing list. In this case, the tab allows for optionally defining additional input validation rules for each of these fields. The tab displays the name of each such profile field together with a drop-down menu containing the possible input validation types.

For Text Fields:

- **Accept all values** – No validation will be applied, all text input is valid (with a maximum length of 100, which is imposed by LISTSERV Maestro). Note that for some encodings, like UTF-8 or asian language encodings, the maximum character length may even be less than 100, depending on the specified value.
- **Date with format** – Input will be validated as a date (day, month, and year) according to the date format specified. For the date format, four different formats are available:
  - **yyyy-mm-dd** – Year, followed by month, followed by day, separated by a hyphen.
  - **mm/dd/yyyy** – Month, followed by day, followed by year, separated by a slash.
  - **dd/mm/yyyy** – Day, followed by month, followed by year, separated by a slash.
  - **dd.mm.yyyy** – Day, followed by month, followed by year, separated by a dot.

  The input will only be accepted if the subscriber input can be interpreted as a valid date according to the chosen format. Note that for an optional field an empty input is also accepted.
- **Full Name** – Input will only be accepted if it can be interpreted as a valid "Full Name", meaning a first name followed by a last name. To fulfill this requirement, the input must consists of at least two text strings separated by at least one space character. Examples for valid "Full Names" include: "John Doe", "Frank N. Furter", "Dr. Dolittle" but also "a b".

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- **String length range** – Text input will be validated so that the entered text is no shorter than the supplied minimum length and no longer than the supplied maximum length. Minimum and maximum length can both be the same value, in which case the entered text must have exactly the given length. Any input that does not fall into the given length range is not accepted. The given minimum must be 1 or more, the given maximum must be 100 or less, and the maximum must not be less than the minimum. Note that for an optional field an empty input is also accepted.
- **String length minimum** – Text input will be validated so that the entered text is no shorter than the supplied minimum length. Any input that is less than this value is not accepted. The given minimum must be between 1 and 100 (including). Note that for an optional field an empty input is also accepted.
- **String length maximum** – Text input will be validated so that the entered text is no longer than the supplied maximum length. Any input that is greater than this value is not accepted. The given maximum must be between 1 and 100 (including). Note that for an optional field an empty input is also accepted.

For Number Fields:

- **Accept all values** – No validation will be applied, all number input is valid (in the range of -9223372036854775808 to 9223372036854775807, which is imposed by LISTSERV Maestro).
- **Number range** – Number input will be validated so that the entered number is not less than the supplied minimum and not greater than the supplied maximum. Any input that does not fall into the given range is not accepted. The given minimum must be less than the given maximum. Note that for an optional field an empty input is also accepted.
- **Number minimum** – Number input will be validated so that the entered number is not less than the supplied minimum. Any input that is less than the minimum is not accepted. Note that for an optional field an empty input is also accepted.
- **Number maximum** – Number input will be validated so that the entered number is not greater than the supplied maximum. Any input that is greater than the maximum is not accepted. Note that for an optional field an empty input is also accepted.

  For a dataset that already contains members or lists, or for a list which already contains subscribers, then the input validation of already existing profile fields can no longer be changed. If a new field is added to such a dataset or list (on the Profile Fields page), then the input validation for this new field can be defined, but the input validation of the other fields still cannot be changed.

Note: For a dataset that already contains members or lists, or for a list which already contains subscribers, then the input validation of already existing profile fields can no longer be changed. If a new field is added to such a dataset or list (on the Profile Fields page), then the input validation for this new field can be defined, but the input validation of the other fields still cannot be changed.

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6.1.3.3 The Subscriber Name Definition Tab

The Subscriber Name Definition tab only appears if there is at least one profile field of **Text** type defined (other than the **EMAIL** field of the dataset) either in the profile fields of the hosted recipient list or in the shared profile fields of the dataset.

This tab also allows you to define what value to use as the recipient name in the **To** field of all mailings to this hosted recipient list. The value that is to be used as the recipient name can be a single **Text** type profile field (containing the recipient's name), or it can be a combination of several **Text** or **Single Select** type profile fields (but at least one **Text** field). If a combination of several fields is used, then they will be appended to each other in the given order with a separating space between each. This is used to construct the actual recipient name to be used in the **To** field.

Example:

If you have a **FIRST_NAME** field, a **LAST_NAME** field, and a single select **Title** field, then you might want to specify all three in the following order:

```
TITLE
FIRST_NAME
LAST_NAME
```

so that the correct full name, including the title, is assembled for each recipient.

Note: If several fields are appended to construct the full name, then they are separated by a space. However, if one of the fields is optional and there is no value provided, then no additional space will be inserted; this means that, between two values in the full name, there will only ever be a single space (unless more spaces have been specified somewhere "inside" of a value).

To define a profile field to be included in the name definition, select it in the **Profile Fields** field (left selection box), then click **[->]** to move the field into the **Name Fields** field (right selection box). To again remove a profile field from the name definition, select it in the right box and click **[<-]**. To change the ordering of the profile fields in the right selection box, select a field in the box and then click the **Move Up** or **Move Down** link.

To aid with the selection of profile fields for the name, the table at the bottom of the tab shows details about all the profile fields.

6.1.3.4 The Default Values Tab

The Default Values tab is only visible when modifying a dataset or list that already contains subscribers and additional profile fields on the Profile Fields screen have been added. In this case, it is necessary to define defaults for the new fields that will be used for the already existing subscribers.

This tab lists all fields that have been added. Each field has a **Define** link. Click the link to define the default value for the given field. (For fields of the **Single** or **Multiple Select** type, before the default can be defined, a lookup table must first be assigned on the Selection Field Details tab.)

If the field is of the **Multiple Select** type (or **"visible"**, which is a variation of **Mandatory**), then a default will have to be supplied before leaving the wizard. For optional fields (or **"read-only"** or **"hidden"**, which are variations of **Optional**), then a default doesn't need to be supplied. If the default of such a field is left empty, then the empty value will be used for all existing subscribers.

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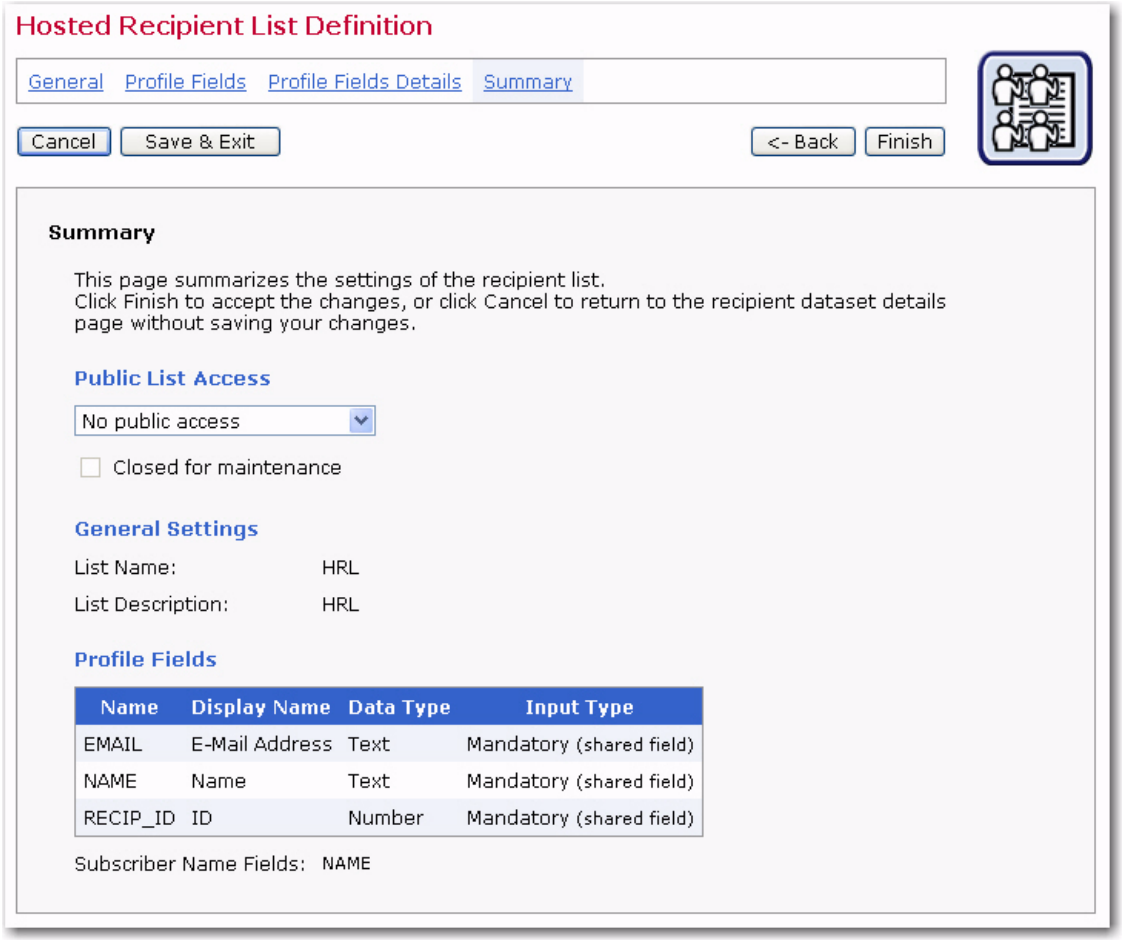
6.1.4 Summary

The Summary screen displays all of the settings for the list. You can set the access level for the list by selecting one of the options in the **Public List Access** drop-down menu. Lists that are **Open to everyone** can be subscribed to from the dataset web form or the list web form. Anyone with the URL to either form can access the list subscription page. Lists that have **Access for subscribers only** are visible to subscribers who have been added to the list by the data Administrator. The list will not be displayed on the dataset web form when accessed by a non-subscriber. Lists with **No public access** will not appear to non-subscribers or subscribers from the dataset web form. This setting can be used when a list is under construction to prevent anyone from signing up prematurely.

Use the **[<- Back]** button to return to the previous screen. Click **[Finish]** to save the list and return to the Recipient Dataset Details screen. After a hosted recipient list has been added to the dataset, it will appear in the dataset tree in the left frame represented by this icon and accompanied by the list name.

Figure 6-4 Hosted Recipient List Wizard – Summary



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Section 7 Creating Hosted LISTSERV Lists

Hosted LISTSERV lists contain data from the dataset. They can also have their own data fields that are not shared among lists in the dataset, but belong exclusively to the list. Lists that have their own fields will also have their own Web subscription forms generated when the list is created. All the fields that appear in the dataset and in a particular list can be used as merged fields for messages sent to that list.

To create a new hosted LISTSERV recipient list, select the dataset the list will be added to from the Recipient Datasets screen. The Recipient Dataset Details screen opens. From the Toolbar, click **Dataset** > **Create** > **Create Hosted LISTSERV List**.

When LISTSERV Maestro creates a LISTSERV list, it is assembling a "list header" that is made up of "keywords." These keywords define the settings in the list, such as who may send mail to the list, who administers the list, how are bounces handled, and many other settings. Once the keywords are defined and written to the list header, the LISTSERV list can collect subscriptions.

LISTSERV Maestro provides a wizard that can create three different types of LISTSERV list, providing unique ways for subscribers to manage their settings and communicate. The three types of LISTSERV lists available are:

- **Announcement List** – This type of list is used for announcements and newsletters. Communication with subscribers is one-way, stemming from the LISTSERV Maestro sender and going to the subscribers. Subscribers are not allowed to post back to the list. See Section 7.1 Creating LISTSERV Announcement Lists for more information.
- **Unmoderated Discussion List** – This type of list is used for open discussion among list subscribers and any LISTSERV Maestro senders. Communication is two-way, originating from both subscribers and LISTSERV Maestro senders. Postings go directly to the list without being reviewed or edited. See Section 7.2 Creating LISTSERV Unmoderated Discussion Lists for more information.
- **Moderated Discussion List** – This type of list is used for a controlled discussion among subscribers and any LISTSERV Maestro senders. Postings sent to the list from subscribers are reviewed by a moderator who can approve the message for distribution to the rest of the list or reject the posting so it is not sent on to the rest of the list subscribers. Messages originating from LISTSERV Maestro are not subject to moderation. See Section 7.3 Creating LISTSERV Moderated Discussion Lists for more information.

- **User Defined Discussion List** – This type of list lets you define your own list type. This is an advanced feature that requires knowledge of LISTSERV list headers and list header keywords; therefore, it is most suited for experienced LISTSERV users. The behavior of this list type depends entirely on the value that you supply for the **Send** keyword. While the three predefined types (Announcement, Unmoderated, and Moderated) have predefined values for the **Send** keyword, the User Defined list lets you define this keyword. Click on the **Edit** link to define it. See Section 7.4 Creating LISTSERV User Defined Lists for more information.

Note: Once the list is created in the Hosted Recipient List wizard, it can be edited outside of LISTSERV Maestro using LISTSERV. This is an advanced skill for

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those administrators familiar with LISTSERV, but it must be exercised with caution as it has the potential to break the functioning of the list if certain keywords are modified in a way that is incompatible with LISTSERV Maestro. In particular, you must never change the `DBMS=` or `Topics=` keywords outside of Maestro or change the Maestro list ID, and certain keywords have restrictions that must be observed, especially `Subscription=`, `Owner=`, `Validate=`, and `Misc-Options=`. If any changes to the list header are made outside of LISTSERV Maestro, the wizard cannot be used again on the same list without losing all of the changes.

7.1 Creating LISTSERV Announcement Lists

Similar to creating a dataset and creating a hosted recipient list, creating a hosted LISTSERV list is accomplished by using a wizard that guides you through all of the steps for designing the list and the accompanying web subscription form. The Hosted LISTSERV List Definition wizard is comprised of eight main screens – General, Profile Fields, Profile Field Details, List Type, List Options, Posting Restrictions, LISTSERV List Topic, and Summary. The settings available in the wizard vary depending on the type of LISTSERV list that is created.

A LISTSERV announcement list permits communication to run in one direction, from the sender of the message to the subscribers. Subscribers are not allowed to post back to the list, although they can send mail back to the sender of the message. Subscribers are, however, allowed to manage their own subscription settings based on the features of the list itself.

7.1.1 General Settings for LISTSERV Announcement List

The General screen defines the general information pertaining to the list.

- **Name** – The name of the mailing list. Subscribers will see this name of the list on the web form when they subscribe. Data administrators will see the list name in the dataset tree and if they create a target group from a classic LISTSERV list (see Section 14 Classic LISTSERV List Target Groups for details). LISTSERV Maestro users will see the list name if they are allowed to define recipients for a job by sending to an existing LISTSERV list.
- **Internal Description** – The internal description is seen by users working within the Maestro User Interface.
- **Public Description** – The public description of the list appears on the subscription web form. If subscribers are permitted to select the lists they want to join and can view and change their subscription settings, having accurate descriptions will help them accomplish those tasks.

Once you're finished specifying the name and description of the list, click **[Next ->]** to continue.

7.1.2 Profile Fields for LISTSERV Announcement Lists

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The Profile Fields screen lists all of the fields in the dataset. Other fields can be added to the list. Any added list fields will not be shared among the other lists in the dataset. To add a new field, click the **Add Field** link.

For each new field, enter the following information:

- **Name** – The name of the field as it will be used internally by the system for mail merging and querying. Field names can only use upper and lower case letters A-Z and a-z, the numbers 0 – 9 and the underscore "_". Spaces and other special characters are not allowed.
- **Display Name** – The label that identifies the blank field on the web form. The display name will be seen by anyone accessing the list's public subscription page on the Web. All alphanumeric characters are permitted, as well as spaces and special characters allowed by the encoding scheme of the dataset.
- **Data Type** – Choose the type of data to be entered in the field from the drop-down menu. Three different classifications of data are available (selection lists are not available for hosted LISTSERV lists):
  - **Text** – Text fields can accept any type of text, including dates in specific formats such as dd/mm/yyy or mm.dd.yyyy.
  - **Number** – Number fields accept any whole integers.
  - **Boolean** – Boolean fields are based on two states – true or false.
- **Mandatory** – Decide whether the data is mandatory for subscribers to enter into the web form or optional. Optional fields can be designated as hidden or read-only if the subscribers are not allowed to enter or change the data in those fields. Boolean fields cannot be optional due to the nature of the data type – the selection equates to either true or false. Boolean fields may be visible or hidden.

After list fields are created, they can be edited, removed, moved up, or moved down by using the corresponding links. Fields that are part of the dataset cannot be moved or edited from this screen.

Once you're finished adding fields to the list, click **[Next ->]** to continue.

7.1.3 Profile Field Details for LISTSERV Announcement List

The Profile Field Details screen lets you specify which LISTSERV fields are used to assemble the "Full Name" of the list subscriber. Hosted LISTSERV lists require a **Name Field** to be defined. If a single name field exists for each subscriber, move that field from the **Profile Fields** box to the **Name Fields** box. If two (or more) fields are to be used to make up a full name, move each of the fields from the **Profile Fields** box to the **Name Fields** box. The second field is added after the first field, leaving a space in between. This makes it easy to combine a first name field with a last name field to produce a **Full Name** field, for example. Use the **Move Up** and **Move Down** links to change the order of the name fields. The fields are not required to be mandatory; although, the existence of at least one name field is required, but it does not have to be filled in by every subscriber.

Once you're finished specifying which fields are used, click **[Next ->]** to continue.

7.1.4 List Type for LISTSERV Announcement List

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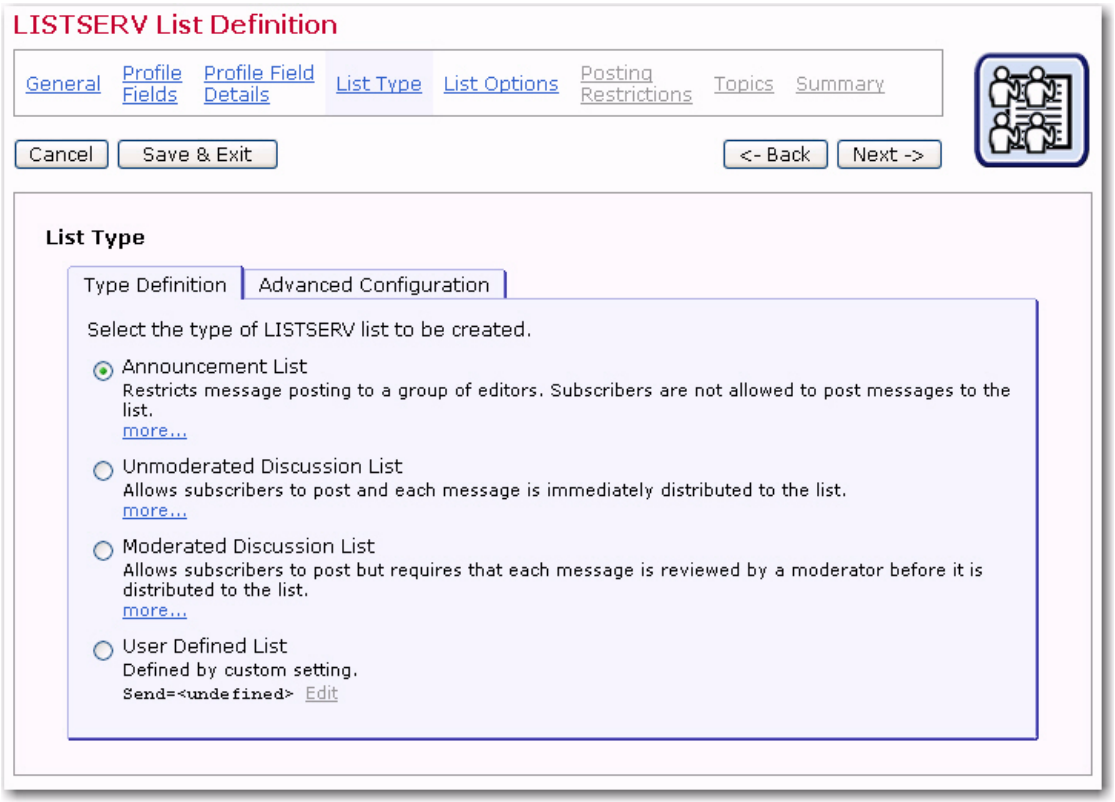
The List Type screen lets you select the type of list you want to create. Select **Announcement List**.

Figure 7-1 The LISTSERV List Wizard - List Type Screen



An Announcement List is used for announcements and newsletters. Communication with subscribers is one-way, stemming from the LISTSERV Maestro sender and going to the subscribers. Subscribers are not allowed to post back to the list.

Once you've selected the type of list you want to create, click **[Next ->]** to continue.

Note: For this list type, if any **Allowed Sender Addresses** are specified on the Allowed Sender Addresses tab of the Posting Restrictions screen, then the sender address of the job must be one of these addresses. If no specific **Allowed Sender Addresses** have been supplied, then the sender address of the job must be one of the addresses listed as the List Administrator Addresses on the General Options tab of the List Options screen.

7.1.4.1 Advanced Configuration

Using the Advanced Configuration tab, you can view and edit the actual LISTERV list header keywords that define the behavior of the Hosted LISTSERV List.

Important: This is an advanced feature that requires knowledge of and experience with LISTSERV list headers and list header keywords; therefore, it should only be used by experienced LISTSERV list administrators. For most standard list purposes, there is no need to edit the list header keywords on this tab directly, but you can instead use the controls that are provided on the following wizard pages (List Options, Posting Restrictions, and Topics).

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This tab shows a tree with all available list header keywords, separated into seven groups (see the list of groups and keywords below). Click on the "+" icon to open a group or the "-" icon to close a group.

The keywords themselves are displayed in different styles, depending on their current configuration:

- A blue circle icon and black text: This keyword has been configured via one of the special controls on the following wizard pages (List Options, Posting Restrictions, or Topics) and will appear in the list header with the displayed value.

- A green circle icon and bold black text: This keyword has been configured with a manually supplied value via the Edit link here on the Advanced Configuration tab. It will appear in the list header with the displayed value (or will be omitted from the list header, if applicable).

- A grey circle icon and grey text: This keyword is currently not configured and will not appear in the list header.

- A grey circle icon and bold red text: This keyword is currently not configured but must be configured before the wizard can be finished.

- A red circle icon and bold black text: This keyword has been configured with a manually supplied value via the Edit link here on the Advanced Configuration tab and was included in the list header with the displayed value (or was omitted from the list header, if applicable). However, when the list header was transferred to LISTSERV, LISTSERV reported an error in the value of this keyword. To see the original LISTSERV error message for this keyword, select the keyword in the tree and click the Edit link.

To view the actual textual list header that is the result of the keyword input here in the keyword tree and in the user interface controls on the following wizard pages, and which thus defines this Hosted LISTSERV List, click on the **View Configuration as Plaintext** link at the bottom of the tree.

To edit the value of a given keyword, select the keyword in the tree and click on the **Edit** link at the top right corner of the tree. Depending on the selected keyword, there are three possible edit situations:

- **Editing via wizard controls only** – For keywords of this type, all possible values that the keywords can have can be configured via the user interface controls that the wizard offers on the following wizard pages. Therefore, there is no need to be able to input a keyword value manually. If you click the Edit link for such a keyword, then a message box will inform you that instead of editing the keyword value manually, please use the provided user interface controls on the specified wizard page.
- **Editing via wizard controls or manual input** – For keywords of this type, user interface controls exist on the following wizard pages. However, those controls do not allow you to input the full range of possible values for this keyword (but only the most common values). You therefore have the choice of either using the user interface controls in the wizard or to supply a specific value for the keyword manually. If you choose to supply a value manually here in the keywords tree, then the corresponding user interface control on one of the following wizard pages will no longer be available. Instead a message will be displayed that informs you, that a

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custom value has been supplied for the corresponding keyword in the keywords tree. To make the user interface controls available again, go back to the keywords tree and remove the manually supplied value. If you click the Edit link for such a keyword, an input dialog will allow you to choose between using the user interface control in the wizard (this also includes an information about where to find the corresponding user interface control) or to supply your own customized value.

- **Editing via manual input only** – For keywords of this type, there exists no dedicated user interface control on any of the following wizard pages. Therefore, the only way of changing these keywords is by supplying a customized value for the keyword manually, here in the keywords tree. Keywords of this type are keywords for very specific and advanced LISTSERV list features, which are seldom used. If you click the Edit link for such a keyword, an input dialog will allow you to supply the value for the keyword.

The following list header keywords are available in the keyword tree (note that some obsolete keywords are not supported):

- **Access Control Keywords**
  - Attachments
  - Filter
  - Review
  - Send
- **Distribution Keywords**
  - Ack
  - Daily-Threshold
  - Digest
  - Mail-Via
  - Newsgroups
  - Prime
  - Reply-To
  - Sender
  - Sub-lists
  - Topics
- **Error Handling Keywords**
  - Auto-Delete
  - Errors-To
  - Loopcheck
- **Maintenance / Moderation Keywords**
  - Configuration-Owner
  - Editor
  - Editor-Header
  - Moderator

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- New-List
- Notebook
- Notify
- Owner
- Peers
- Renewal
- Sizelim
- Subject-Tag
- X-Tags

- **Security Keywords**
  - Change-Log
  - Confidential
  - Exit
  - Local
  - Service
  - Validate
- **Subscription Keywords**
  - Confirm-Delay
  - Default-Options
  - Default-Topics
- **Other Keywords**
  - Categories
  - Language
  - Limits
  - Mail-Merge
  - Misc-Options
  - Translate

7.1.5 List Options for LISTSERV Announcement Lists

The List Options screen is divided into several tabs – General Options, Reply Behavior, Bounce Handling, List Archive, plus several with advance features – that can be accessed by clicking the drop-down arrow. The List Archive tab is optional and will not appear unless archives have been set up in the HUB. For more information on archives, see the LISTSERV Maestro Administrator's Manual.

On the General Options tab, all list types require that a list administrator called a "list owner" be set. Enter at least one email address that will become the administrator (owner) of the LISTSERV list. Click the **Edit** link to add a new address or edit the existing ones in the pop-up dialog box. Entries must be valid Internet email addresses.

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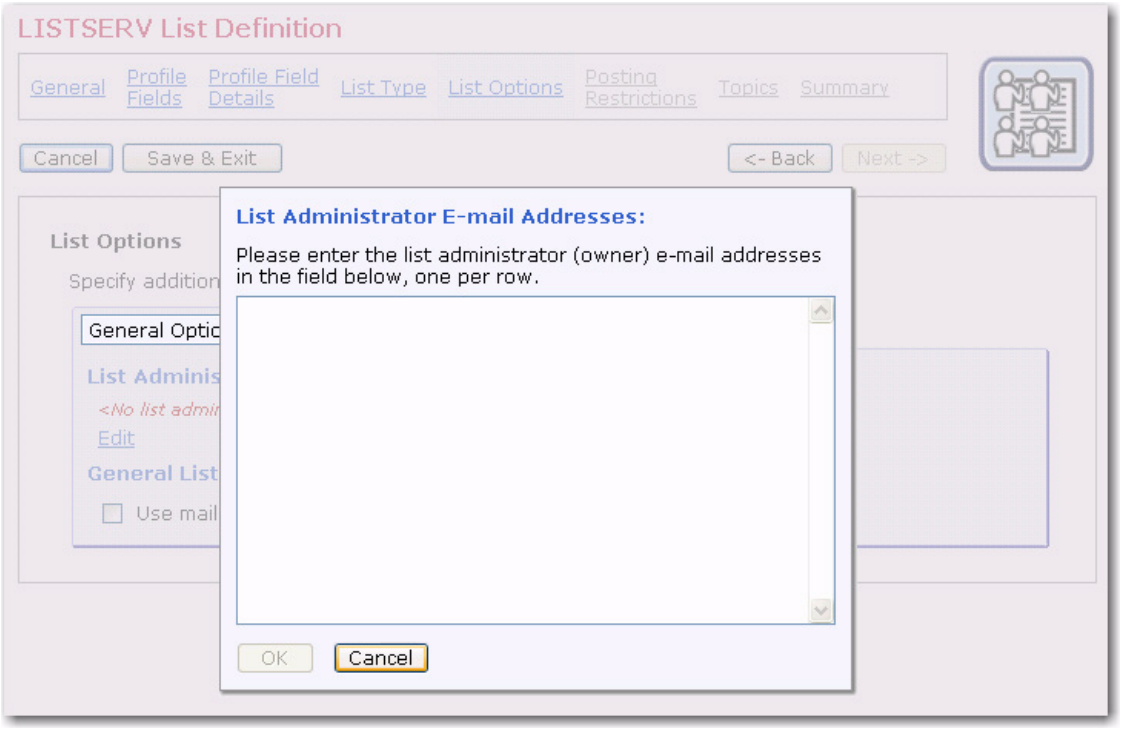
Figure 7-2 The LISTSERV List Wizard - Set the List Administrator



Click **[OK]** to accept the administrator address and return to the General Options tab.

The General Options tab for announcement lists also contains the following option:

- **Mail Merging** – Check if you want to be able to use mail merging on this hosted LISTSERV list even when doing "normal" (standard submit) postings. When using this hosted LISTSERV list as the designated recipient list for a mail job, you will have the choice (in the recipients wizard of the mail job) to choose between a "special submit" and a "standard submit". With special submit, mail merging is always enabled (no matter the setting made here); however, this also circumvents other features of the list, like the list archive or any DIGEST settings. With a standard submit, mail merging is normally not possible (and therefore also some tracking types that rely on mail merging are not possible). However, if you check this option here, mail merging will also be possible together with standard submits.

The Reply Behavior tab determines where any replies from subscribers are sent. There are three options available:

- **Sender** – Replies are directed to the sender of the email message. The sender address is the address based on the “From:” field of the posting.
- **List Administrator** – Replies can be directed to the list administrator address. This is the address that was entered in the General Options tab under **List Administrator Email Addresses**. If there is more than one list administrator, each address will receive all replies.
- **Separate address** – Replies are directed to an address that is entered in this field.

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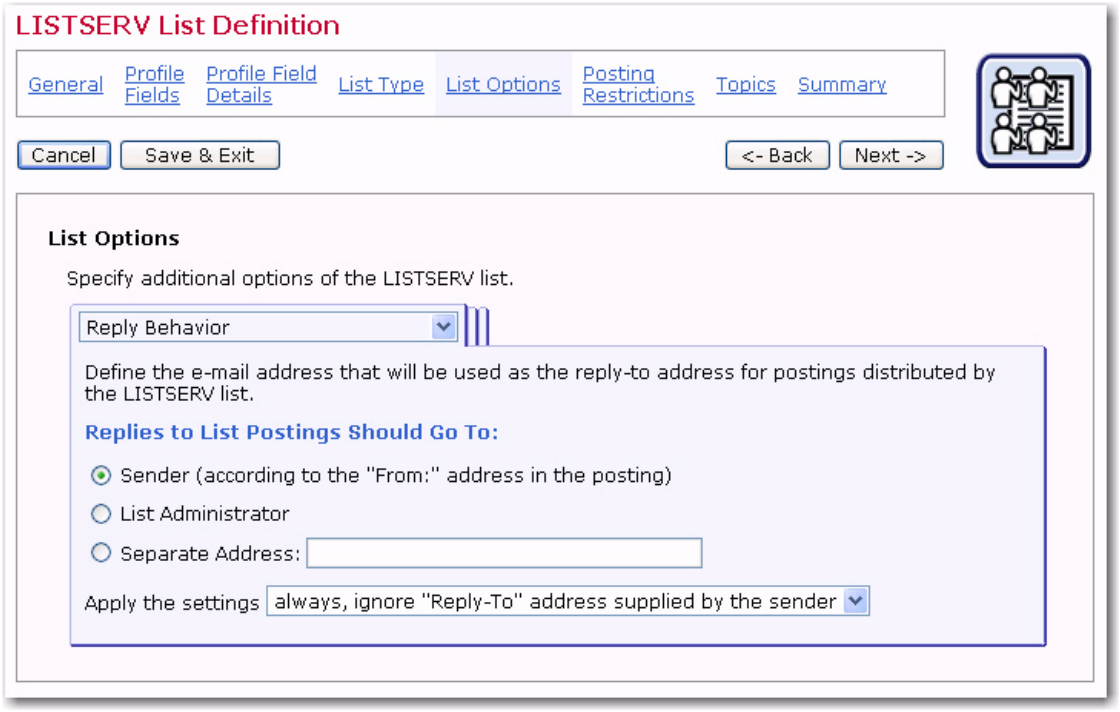
Figure 7-3 The List Wizard for LISTSERV List - Reply Behavior Tab



Finally, select when the settings are to be applied - **always (i.e. even if the sender has supplied a "Reply-To" address of his own)** or **only if the sender has not supplied a "Reply-To" address**.

The Bounce Handling tab determines what happens to the subscriber addresses when messages sent to them bounce (are rejected by the email server and returned to the sender as undeliverable). LISTSERV lists can handle bounces by removing the subscriber addresses of bounced messages automatically or by collecting bounces for manual action. Unlike Hosted Recipient Lists, automatic removal of bounced addresses on Hosted LISTSERV Lists will remove the address from the list only, not from the dataset. Manually processed bounces are sent to the list administrator's mailbox. Select one of the bounce processing options:

- **Only collect bounce information (for manual processing)** – Do not do anything with the bounced mail, simply collect them for further manual processing.
- **Remove subscribers immediately on first bounce** – If a message sent to a subscriber bounces back to LISTSERV, then that subscriber is immediately removed from the list.
- **Remove subscribers after X bounces within Y days** – If mail sent to a subscriber bounces back to LISTSERV, and this happens at least X-many times within a period of Y-many days, then remove this subscriber from the list. The default is to remove after 100 bounces within 4 days.

For additional bounce handling options, click on the **Show advanced bounce handling options** link.

If you have selected one of the automatic bounce handling options above, then you can also specify whether or not this should actually result in an automatic removal of

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addresses from the list (which is the default) or if the bounce analysis should only be forwarded (via e-mail).

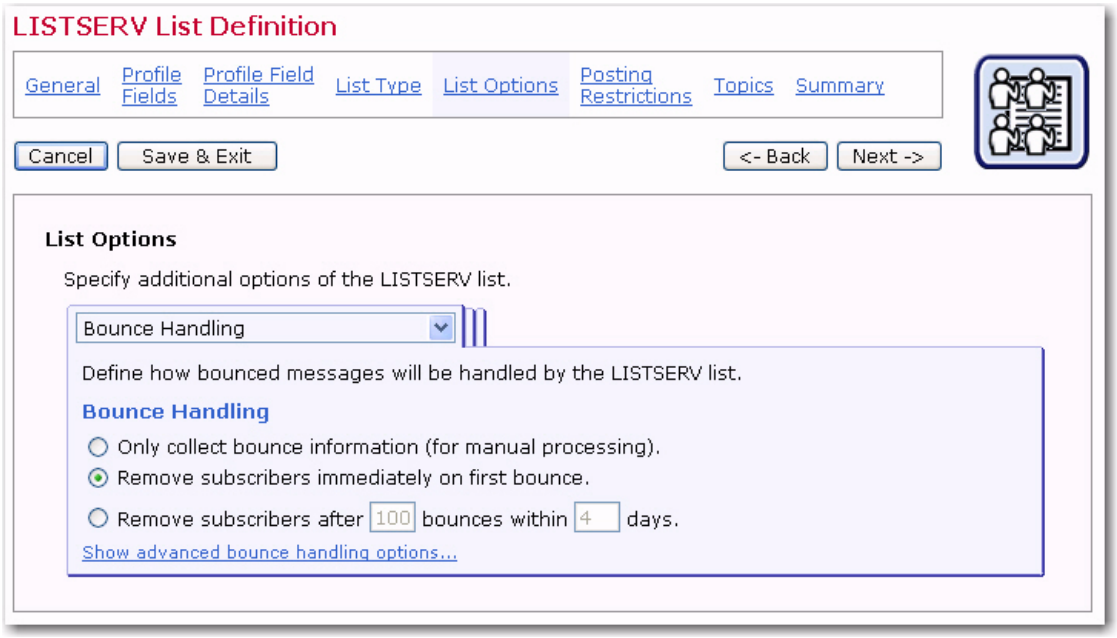
If you select automatic removal, then a notification about all removed addresses will be sent to the specified group of people, and you also have the choice if you also want to be notified about any temporary bounces and bounces for addresses that are not actually subscribed to the list.

If you select no automatic removal, then you need to specify the group of people to which the bounce analysis will be forwarded to by clicking the **Add** link. To change this information, click the **Edit** link.

Furthermore, you can define the **Passive Probing** behavior of the list.

To again hide the advanced bounce handling options, click on the **Hide advanced bounce handling options** link. This, however, is only possible if the advanced options are set to their default values, i.e. if you have non-default advanced options, then you can also not hide the advanced options.

Figure 7-4 The LISTSERV List Wizard – Bounce Handling Tab



The List Archives tab defines whether or not postings to the list will be archived. If an archive is to be kept, then define how often a new archive file is to be created by the system and who is allowed to access and view the archive.

For the latter two options, there are two modes of specifying the necessary details: In **Standard Mode**, only the most common settings are available. In **Advanced Mode**, all possible options are available. Toggle between the two modes with the **Switch to Standard Mode** and **Switch to Advanced Mode** links at the bottom of the tab.

Note: This tab is only available if the option of creating LISTSERV list archives has been enabled for your LISTSERV server by the LISTSERV Maestro administrator (this is a setting in the Administration Hub).

Once you're finished defining the archive behavior, click **[Next ->]** to continue.

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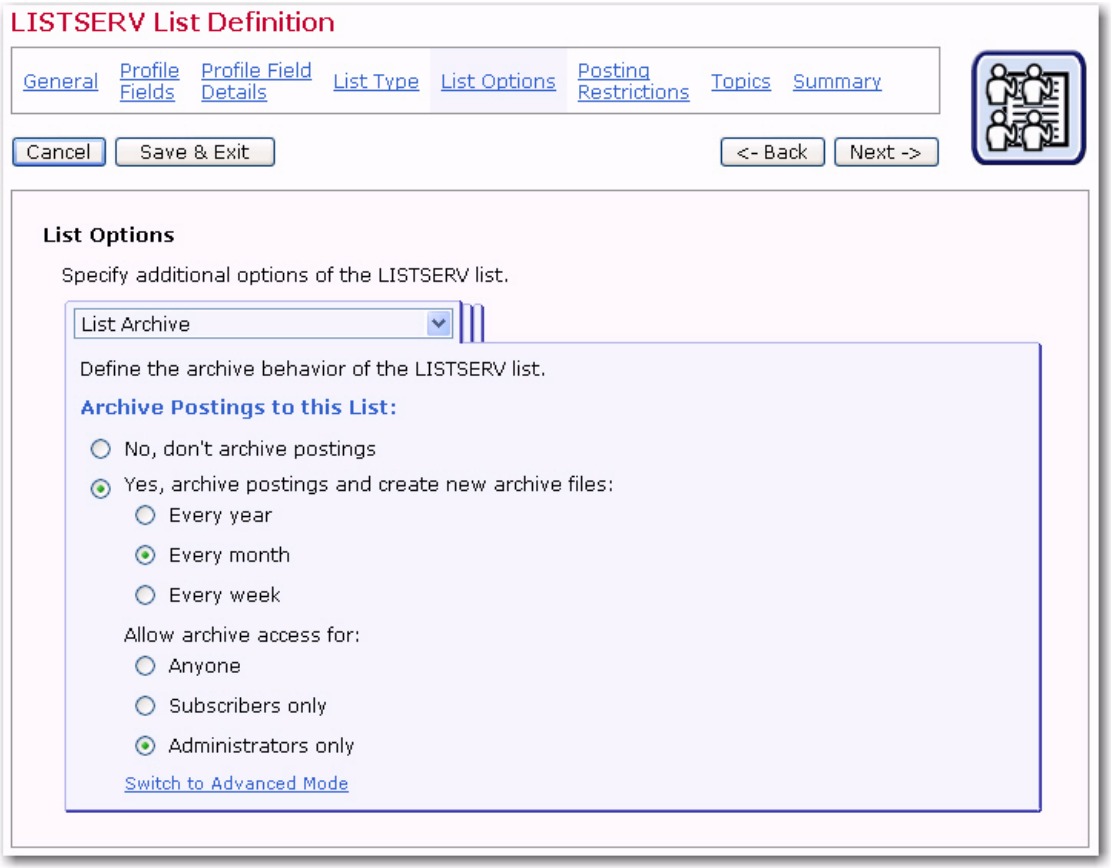
Figure 7-5 The LISTSERV List Wizard – List Archives Tab



7.1.5.1 Advanced Options

The Administrative Messages tab defines the settings for the administrative messages that LISTSERV sends to the list subscribers in various situations:

- **Use texts from English default template "maestro.mailtpl"** – The text for the administrative messages are taken from the default template (in English).
- **Use texts from custom template** – The text for the administrative messages are taken from the specified custom template. A custom template can be used for customization and translation of the text.

The Subscription Notifications tab defines if LISTSERV will send a notification message when a subscriber joins a list (or more precisely, confirms subscription to the list). If you select to receive notification messages, then you can also specify an address that the notifications will be sent to. If you not specify an address, then the notifications will be sent to the list administrator.

The List Visibility tab defines who will be allowed to see the list when using LISTSERV's features of asking for available lists.

The Subscription Options tab defines additional options that subscribers of the list can choose from:

- **Digest Behavior** – Check if you want to give subscribers the option to enable the "Digest" mode for their subscription. With the digest mode enabled, they will no longer receive the postings to the list as individual mails; instead, everything is

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compiled into a single digest email. If you enable this option, then you must also specify the rules that are used to compile and send out the digest email to all subscribers that have enabled the digest mode.

Also, if your list is configured to use a bottom banner, then this banner will, by default, not be included at the bottom of each individual message in the digest (to avoid a repetition of this banner throughout the digest). Instead, the banner will only appear once, after the digest's table of content. To avoid this behavior and include the bottom banner with each individual message in the digest, check the corresponding option.

- **Subject Tag** – These settings define which subject tag will be used for subscribers that have selected to receive mails with the "normal LISTSERV header, with list identification tag in subject" (for example to be able to better filter their incoming mails from this list). Either select to use the list name as the subject tag or provide an individual subject tag. In addition, you have the option to add a sequence number to the subject tag.

  Subscribers who have chosen other header styles than "normal LISTSERV header, with list identification tag in subject", will receive the normal mail subject without a subject tag. An exception of this rule may be made for subscribers who have selected to use "sendmail-style" mail headers. If you want to **Also add the subject tag** for subscribers with this mail header style, check the corresponding option. Note that this will add the subject tag for all subscribers with this header style, i.e. in contrast to the normal LISTSERV header style, where the subscriber has the choice of having the subject tag included.

The Subscription Options (defaults) tab defines the default subscription options that any new subscriber will initially use. Subscribers may later change their own subscription options to different values, but these are the options that they start with, by default.

- **Default Subscription Style** – Defines the default subscription style of new subscribers. Depending on other list settings (if list archives and/or list digests are enabled), the following subscriptions styles may be available:
  - **Individual Postings (No Digest)** – The subscriber will receive individual mails for each posting to the list.
  - **Plain Text Digest** – The subscriber will receive a regular digest in plain text format, with a compilation of all postings since the last digest.
  - **MIME Digest** – The subscriber will receive a regular digest in MIME format, with a compilation of all postings since the last digest.
  - **HTML Digest** – The subscriber will receive a regular digest in HTML format, with a compilation of all postings since the last digest.
  - **Plain Text Index** – The subscriber will receive a regular mail in plain text format, with an index of the subject lines of all postings since the last index (but not the actual message content of the postings).
  - **HTML Text Index** – The subscriber will receive a regular mail in HTML format, with an index of the subject lines of all postings since the last index (but not the actual message content of the postings).

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- **Default Posting Privileges** – (Only available for lists of the user defined type). Define which posting privileges will be applied to new subscribers (and also non-subscribers) by default:
  - **Normal** – Normal posting privileges (as defined by the other list settings, especially the "Send" keyword).
  - **User may bypass moderation** – Posting is allowed without moderation, even on a moderated list (usually not useful on a non-moderated lists).
  - **All postings of user sent to owner(s) for review** – Posting is allowed but only after moderation/review through the list owners (usually not additionally useful on lists which already are moderated).
  - **User may not post to list** – Postings are not allowed (usually not additionally useful on lists where posting is disallowed anyway).
- **Default Acknowledgement Behavior** – (Only available for lists of discussion-types or user defined type.) Define the acknowledgement behavior that will be applied to new subscribers by default. This determines how (and if) LISTSERV will acknowledge postings by a subscriber:
  - **Do not send any acknowledgement message** – Postings by subscribers will not be acknowledged to the poster, but will simply be distributed to the list.
  - **Acknowledge postings with a short message** – Postings by subscribers will be acknowledged with a short message that is sent back to the posting subscriber.
  - **Acknowledge postings with a full copy of the posted message** – Postings by subscribers will be acknowledged with a full copy of the original posting that is sent back to the posting subscriber.
- **Set subscribers to "no mail" by default** – Check so that any new subscribers will initially have the "no mail" option enabled, i.e. their subscription is suspended and they will not receive any mailings until they set their subscription to active.
- **Exempt subscribers from renewal and probing by default** – Check so that any new subscribers will initially not be included in LISTSERV's mechanisms to probe and/or renew subscriber addresses (this is used to keep the subscriber base up to date and to weed out "dead" addresses).
- **Hide subscriber addresses from "REVIEW" listing by default** – Check so that any new subscribers will initially be "concealed". A concealed subscriber will not appear on the list of list subscribers that can be obtained from LISTSERV using the REVIEW command. There exists a special list setting that defines who is allowed to perform the review command in the first place, i.e. not all users may always execute a review, but even those users who are allowed to do this will not see the concealed subscribers. Note that concealed subscribers of a Hosted LISTSERV List will still be visible from inside of LISTSERV Maestro. Also, some privileged users may be allowed to perform an advanced review command that will list even the concealed subscribers.
- **Default Mail Header Style** – Define which mail header style any new subscribers shall use by default:

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- **LISTSERV-style without subject tag** – Use the normal LISTSERV-style mail header, do not add a special list identification tag to the subject line.
- **LISTSERV-style with subject tag** – Use the normal LISTSERV-style mail header and add a special list identification tag to the subject line.
- **Sendmail-style (preserves original header)** – Use the header from the original posting to the list.
- **Other** – If selected, please select one of the more advanced header styles from the drop-down menu. These styles are for specific purposes and are usually not used with normal LISTSERV lists: Additional headers in mail body, Short headers, Individual "To:" with full headers or Individual "To:" with short headers.

The Change Logs tab defines if and how change log files will be maintained by LISTSERV for this list. Select whether or not a change log will be maintained; and, if so, how often LISTSERV will start a new file.

The Delivery Options tab defines some of the general delivery options for the list. These options are:

- **Suppress "ApprovedBy:" mail header** – Check if you do not want the "ApprovedBy:" header to be added to all mailings that are approved by a moderator or list owner (usually only applies to moderated lists).
- **Remote multi-byte characters** – Check if you want all multi-byte characters to be removed from postings to this list. Note that this can cause trouble on internationally used lists, where languages other than the English language may be used for postings.
- **If spam checking is enabled at LISTSERV** – If the spam-checking feature is enabled at LISTSERV, then specify if the server-wide settings will be respected by this list (and spam checks are performed) or if the server-wide settings will be ignored for this list, meaning that no spam checks are performed for the postings to this list.
- **If DomainKeys-signing of emails is enabled at LISTSERV** – (This option only appears if allowed by the LISTSERV Maestro administrator. This is a setting in the Administration Hub.)

  If the DomainKeys-signing feature is enabled at LISTSERV, specify if the server-wide settings will be respected by this list (and postings are signed) or if the server-wide settings will be ignored for this list, meaning that no signing is performed for the postings to this list.

7.1.6 Posting Restrictions for LISTSERV Announcement Lists

Posting restrictions set limitations on message attachments, message size, and the number of messages that can be sent to the list. These restrictions affect messages sent to the LISTSERV list when they are submitted as **standard list postings**. A standard list posting is a normal email message sent to the list. Standard list messages can be received in a digest form, and can be viewed in the list archives if archives have been created for the list. Standard list postings can be sent (without tracking) to the list address using a normal email client, or they can be sent using LISTSERV Maestro (with or without tracking) by selecting **Send to an Existing LISTSERV List**, while defining the recipients

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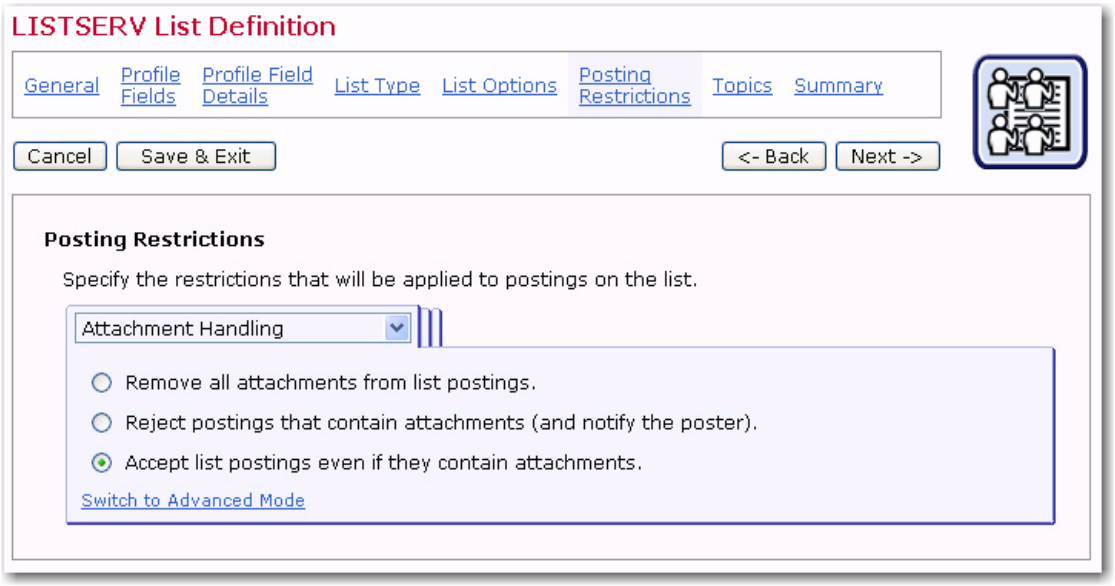
of a mailing, and by specifying **Send job as standard list message** (or by using a target group based on these selections).

The Attachment Handling tab sets the action the list will take when standard messages are receive with attachments. There are three options:

- **Remove all attachments from list postings** – Any postings that include attachments are distributed without the attachments
- **Reject postings that contain attachments (and notify the poster)** – Any postings that include attachments are rejected and not distributed. The poster is then notified.
- **Accept list postings even if they contain attachments** – All postings are distributed, no matter if they contain attachments or not, and all attachments are preserved.

Figure 7-6 The LISTSERV List Wizard – Attachments Handling Tab



To enable the advance mode, click the **Switch to Advanced Mode** link. In advanced mode, these options are also available:

- **Decide based on attachment type** – Any postings that include attachments are inspected. If they contain only attachments of allowed types, they are distributed normally, with all attachments. If they contain (some) attachments of disallowed types, then either those disallowed attachments are removed or the whole posting is rejected (and the poster is notified about this). Check those attachment types (MIME-types) that you want to specify as allowed attachment types. If you need to specify an attachment type as allowed for which there is no checkbox, click on the Edit link and enter the MIME-type (or types) of those additionally allowed attachment types. Then, determine what shall happen if a posting contains any disallowed attachments (remove the disallowed attachments or reject the whole posting).
- **Reject HTML-only messages and remove HTML part from multipart messages** – If checked, then all postings that are only HTML will be rejected, and all multipart messages that contain HTML as one of their parts will be stripped of this HTML part.

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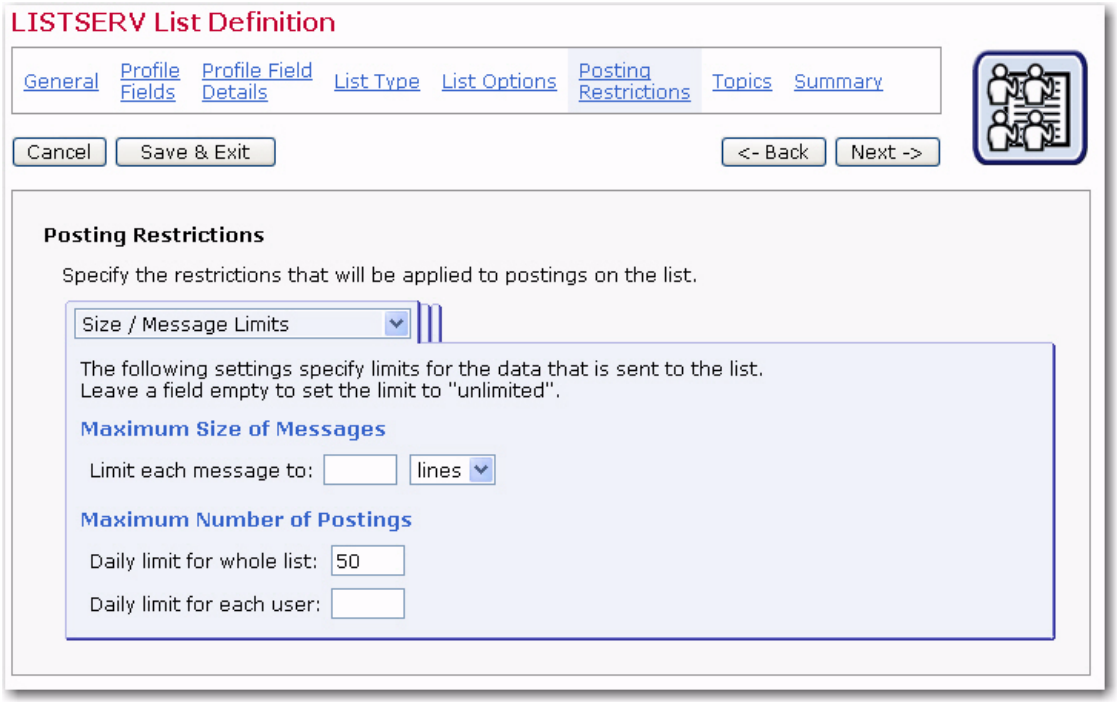
- **Remove non-MIME attachments** – If checked, then attachments of this special type will be removed from the posting before it is distributed.
- **Remove Microsoft Exchange formatted attachments** – If checked, then attachments of this special type will be removed from the posting before it is distributed.

The Size / Message Limits tab defines the size or message count limits for the list.

Figure 7-7 The LISTSERV List Wizard – Size/Message Limits Tab



- **Limit each message to** – Specify how "large" any individual message may be at maximum. Either leave the field empty (which means that there is no limit), or specify a positive number as the limit and select what kind of limit this number describes from the drop-down menu.
- **Daily limit for whole list** – Specify how many postings may happen on this list on any given day. Leave empty for no limit or specify the maximum number of postings to the list per day, no matter who is the sender.
- **Daily limit for each user** – Specify how many postings each user can make on any given day. Leave empty for no limit or specify the maximum number of postings to the list per day for each user (sender). This value must be less than or equal to the Maximum postings allowed per day for whole list (see above).

The Allow Sender Addresses tab defines the addresses that are allowed to post to this list. Click the **Edit** link to specify the address.

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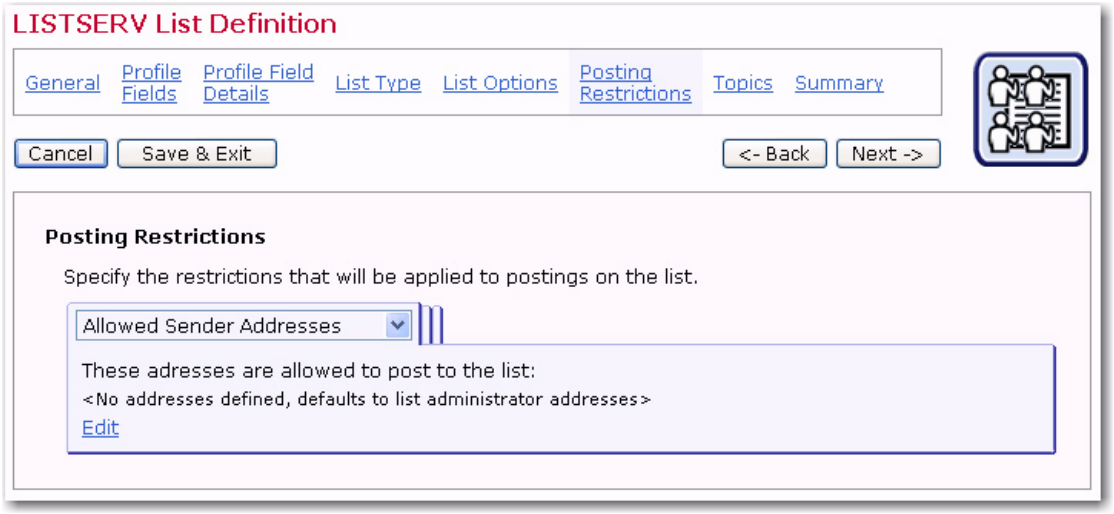
Figure 7-8 The LISTSERV List Wizard – Allowed Sender Addresses Tab



7.1.6.1 Advanced Options

The Posting Confirmation tab is used to avoid spamming of a list and to verify the origin of a list posting. Using the options on this tab, it is possible to enforce that postings to the list are confirmed by the poster before they are actually being distributed to the list. (Note that postings sent with LISTSERV Maestro never require this additional confirmation and are therefore not affected by the settings made here. These settings apply only for manual postings.)

- **No confirmation required** – Postings are accepted without an additional confirmation (unsecure).
- **Postings must be confirmed with an "OK"** – Postings are only distributed to the list once they have been confirmed with LISTSERV's "OK" mechanism.

Note About LISTSERV's "OK" mechanism for confirmations: To confirm a posting, LISTSERV sends an email back to the poster requiring the confirmation. The poster must then respond to this confirmation request by either sending an email with "OK" in the body back to LISTSERV, or by clicking on the confirmation link provided in the email (the confirmation link is only provided if the LISTSERV Web Interface is installed on the LISTSERV server).

7.1.7 Topics for LISTSERV Announcement Lists

Large active LISTSERV lists often use "sub-groups" within the list to give subscribers the opportunity to receive only the posts to the list they are most interested in. Sub-groups are created in LISTSERV by defining the topics. Lists can have up to 23 topics defined. List subscribers can elect to receive only those messages that fit into the topic(s) they are interested in. Similarly, messages can be posted only to specific topics. For example, a large list could have the general subject of XYZ Software. Topics could be defined by the types of users of the software, the type software purchased, the tips and tricks for using the software. For more information on Topics, see the LISTSERV List Owner's Manual.

To define a new topic, simply click the **New Topic** link and fill out the empty topic row that appears. In the list, topics are displayed either in the display mode or in the editable mode. In the display mode, each topic has an associated **Edit** link to set it into the

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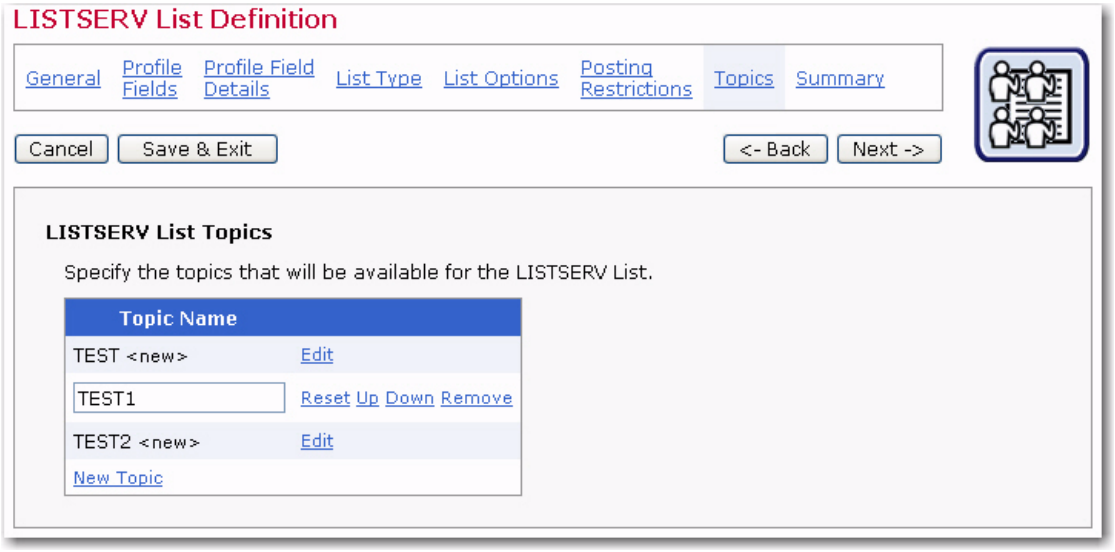
editable mode. In the editable mode, the topic name can be changed and the following actions are available: **Reset** (forget changes and reset the topic to the state it had when the editable mode was last entered for it), **Up** (move the topic up one step in the topics list), **Down** (move the topic down one step in the topics list), and **Remove** (remove the topic).

Figure 7-9 The LISTSERV List Wizard – List Topics Screen



When you change the topics settings of a list that already has subscribers, all of the current subscribers' topics selections need to be adjusted. This will occur when the LISTSERV list wizard is completed. The adjustment may take some time and a progress bar will be displayed as the system works.

Tip: Changing topics on a list where subscribers are currently very active needs to be carefully considered so a major disruption does not occur. A better strategy would be to temporarily close the hosted LISTSERV list for maintenance (available on the Summary), adjust the topics, and then re-open the list.

When adding new topics to a list that already has subscribers, an additional option, **Existing subscribers will have the new topics selected automatically**, will appear. Select this option to add the new topics automatically to all the existing subscriptions. If this option is not selected, then the existing subscribers will not be subscribed to the new topics. Subscribers will be able to change their settings to add or drop the new topics if the dataset and list subscriber pages are enabled. This option applies to all topics that are added on this page during the same List wizard session. To add several topics, some of which the current subscribers are automatically subscribed to and some not, the List wizard has to be engaged twice, once with the option selected (for those topics to be added to all subscriptions) and once with the option not selected (for those topics that will not be added to all subscriptions).

7.1.8 Summary for LISTSERV Announcement Lists

The Summary screen displays all the selections made for the LISTSERV list during its creation.

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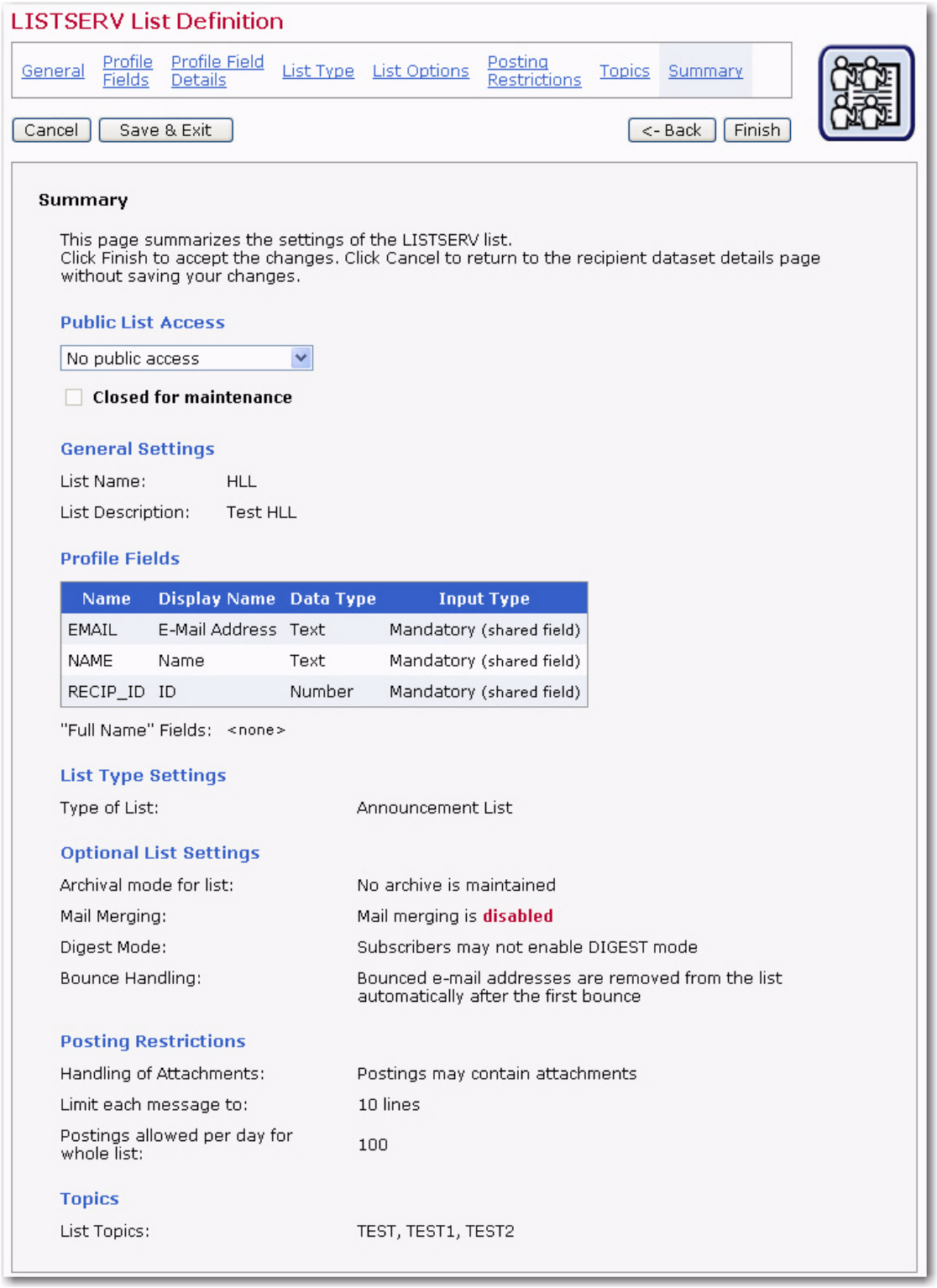
Figure 7-10 The LISTSERV List Wizard – Summary Screen



Use the **[<- Back]** button or any of the links on the top bar to revisit any page in the wizard to make changes.

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Before the list can be used, its access level needs to be set using the **Public List Access** drop-down menu. The list can be set to be accessible to anyone with access to the dataset wishing to subscribe, to be accessible to only list subscribers, or to have no public access. If a list is accessible to everyone, it will appear on the membership area Web page to anyone visiting that page. If the list is accessible only to members, the list will not appear in the membership area to everyone, it will only appear only to those who are subscribed to the list. This allows existing subscribers to manage their own settings, but new subscribers must be added by the Data Administrator or designated LISTSERV Maestro team members. Lists with no public access do not appear in the membership area to anyone.

Click **[Finish]** to accept the list as it is summarized and return to the Recipient Dataset Details screen.

7.2 Creating LISTSERV Unmoderated Discussion Lists

Unmoderated discussion lists allow for two-way interaction between group members. These open forums facilitate ongoing discussions among members. They are most commonly used for internal communication within an organization or group of people. For instance, many universities use secure "class lists" for interaction between students and teachers or to conduct remote teaching.

Unlike a one-way list, a discussion list not only allows, but encourages interaction between members who are part of the group. Every member can write to the list, and in doing so, all members will receive a copy of the message. In this way, discussions can take place and views can be exchanged among a large number of people.

Unmoderated discussion lists can provide a dynamic platform for disseminating information, sharing opinions, collaborative learning, and much more. However, unmoderated discussion lists have the potential to generate a large amount of mail and take up server resources if archives are kept. Some thought needs to be given to the number and type of subscribers permitted to join this type of LISTSERV list and some monitoring may need to take place in order to keep the level and topics of discussion pertinent to list.

7.2.1 General Settings for Unmoderated Discussion Lists

The General screen defines the general information pertaining to the list.

- **Name** – The name of the mailing list. Subscribers will see this name on the web form when they subscribe. Data administrators will see this name in the dataset tree if they create a target group from a classic LISTSERV list (see Section 14 Classic LISTSERV List Target Groups). Users will see the list name if they are allowed to define recipients for a job by sending to an existing LISTSERV list.
- **Internal Description** – The internal description is only seen by users working within the Maestro User Interface.
- **Public Description** – The public description of the list appears on the subscription web form. If subscribers are permitted to select the lists they want to join and can view and change their subscription settings, having accurate descriptions will help them accomplish those tasks.

Once you are finished specifying the name and description of the list, click **[Next ->]** to continue.

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7.2.2 Profile Fields for Unmoderated Discussion Lists

The Profile Fields screen lists all of the fields in the dataset. Other fields can be added to the list. Any added list fields will not be shared among the other lists in the dataset. To add a new field, click the **Add Field** link. For each new field, enter the following information:

- **Name** – The name of the field as it will be used internally by the system for mail merging and querying. Field names can only use upper and lower case letters A-Z and a-z, the numbers 0 – 9 and the underscore "_". Spaces and other special characters are not allowed.
- **Display Name** – The label that identifies the blank field on the web form. The display name will be seen by anyone accessing the list's public subscription page on the Web. All alphanumeric characters are permitted, as well as spaces and special characters allowed by the encoding scheme of the dataset.
- **Data Type** – Choose the type of data to be entered in the field from the drop-down menu. Three different classifications of data are available (selection lists are not available for hosted LISTSERV lists):
  - **Text** – Text fields can accept any type of text, including dates in specific formats such as dd/mm/yyy or mm.dd.yyyy.
  - **Number** – Number fields accept any whole integers.
  - **Boolean** – Boolean fields are based on two states – true or false.
- **Input Type** – Decide whether the data is mandatory for subscribers to enter into the web form or optional. Optional fields can be designated as hidden or read-only if the subscribers are not allowed to enter or change the data in those fields. Boolean fields cannot be optional due to the nature of the data type. Boolean fields can be visible or hidden.

After list fields are created, they can be edited, removed, moved up, or moved down by using the corresponding links. Dataset fields cannot be moved or edited from this screen.

Once you're finished adding fields to the list, click **[Next ->]** to continue.

7.2.3 Profile Field Details for Unmoderated Discussion Lists

The Profile Field Details screen lets you specify which LISTSERV fields are used to assemble the "Full Name" of the list subscriber. Hosted LISTSERV lists require a **Name Field** to be defined. If a single name field exists for each subscriber, move that field from the **Profile Fields** box to the **Name Fields** box. If two (or more) fields are to be used to make up a full name, move each of the fields from the **Profile Fields** box to the **Name Fields** box. The second field is added after the first field, leaving a space in between. This makes it easy to combine a first name field with a last name field to produce a **Full Name** field, for example. Use the **Move Up** and **Move Down** links to change the order of the name fields. The fields are not required to be mandatory; although, the existence of at least one name field is required, but it does not have to be filled in by every subscriber.

Once you've finished specifying which fields are to be used for the name, click **[Next ->]** to continue.

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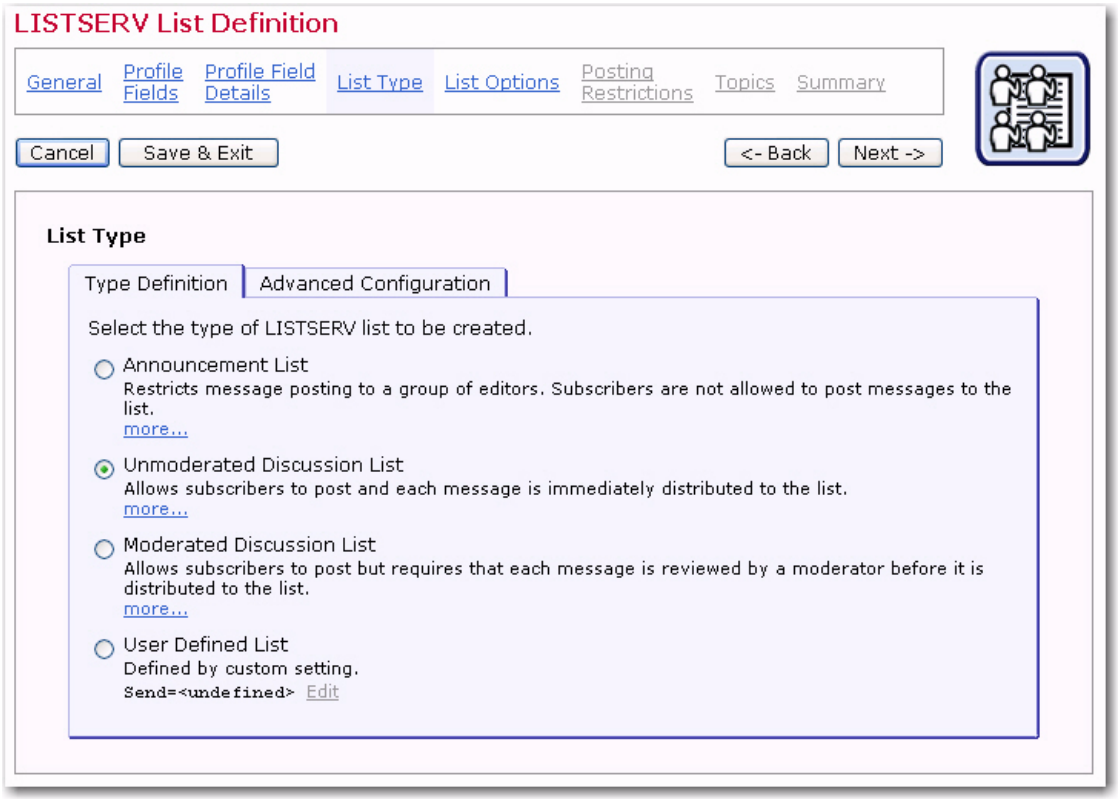
7.2.4 List Type for Unmoderated Discussion Lists

The List Type screen lets you select the type of list you want to create. Select the **Unmoderated Discussion List** option. This type of list is used for two-way communication. Subscribers are allowed to post to the list directly. List postings are not reviewed by a moderator or editor.

Figure 7-11 The LISTSERV List Wizard - List Type Screen



Once you're finished selecting the type of list you want to create, click **[Next ->]** to continue.

Note: If the list is defined so that everyone can post, then you can use any sender address for the mail job. If the list is defined so that only subscribers and editors can post, the sender address of the mail job must be one of the addresses listed as the **Allowed Sender Addresses** on the Allowed Sender Addresses tab of the Posting Restrictions screen.

7.2.4.1 Advanced Configuration

Using the Advanced Configuration tab, you can view and edit the actual LISTERV list header keywords that define the behavior of the Hosted LISTSERV List.

Important: This is an advanced feature that requires knowledge of and experience with LISTSERV list headers and list header keywords; therefore, it should only be used by experienced LISTSERV list administrators. For most standard list purposes, there is no need to edit the list header keywords on this tab directly, but you can instead use the controls that are provided on the following wizard pages (List Options, Posting Restrictions, and Topics).

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This tab shows a tree with all available list header keywords, separated into seven groups (see the list of groups and keywords below). Click on the "+" icon to open a group or the "-" icon to close a group.

The keywords themselves are displayed in different styles, depending on their current configuration:

- A blue circle icon and black text: This keywords has been configured via one of the special controls on the following wizard pages (List Options, Posting Restrictions, or Topics) and will appear in the list header with the displayed value.

- A green circle icon and bold black text: This keyword has been configured with a manually supplied value via the Edit link here on the Advanced Configuration tab. It will appear in the list header with the displayed value (or will be omitted from the list header, if applicable).

- A grey circle icon and grey text: This keyword is currently not configured and will not appear in the list header.

- A grey circle icon and bold red text: This keyword is currently not configured but must be configured before the wizard can be finished.

- A red circle icon and bold black text: This keyword has been configured with a manually supplied value via the Edit link here on the Advanced Configuration tab and was included in the list header with the displayed value (or was omitted from the list header, if applicable). However, when the list header was transferred to LISTSERV, LISTSERV reported an error in the value of this keyword. To see the original LISTSERV error message for this keyword, select the keyword in the tree and click the Edit link.

To view the actual textual list header that is the result of the keyword input here in the keyword tree and in the user interface controls on the following wizard pages, and which thus defines this Hosted LISTSERV List, click on the **View Configuration as Plaintext** link at the bottom of the tree.

To edit the value of a given keyword, select the keyword in the tree and click on the **Edit** link at the top right corner of the tree. Depending on the selected keyword, there are three possible edit situations:

- **Editing via wizard controls only** – For keywords of this type, all possible values that the keywords can have can be configured via the user interface controls that the wizard offers on the following wizard pages. Therefore, there is no need to be able to input a keyword value manually. If you click the Edit link for such a keyword, then a message box will inform you that instead of editing the keyword value manually, please use the provided user interface controls on the specified wizard page.
- **Editing via wizard controls or manual input** – For keywords of this type, user interface controls exist on the following wizard pages. However, those controls do not allow you to input the full range of possible values for this keyword (but only the most common values). You therefore have the choice of either using the user interface controls in the wizard or to supply a specific value for the keyword manually. If you choose to supply a value manually here in the keywords tree, then the corresponding user interface control on one of the following wizard pages will no longer be available. Instead a message will be displayed that informs you, that a

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custom value has been supplied for the corresponding keyword in the keywords tree. To make the user interface controls available again, go back to the keywords tree and remove the manually supplied value. If you click the Edit link for such a keyword, an input dialog will allow you to choose between using the user interface control in the wizard (this also includes an information about where to find the corresponding user interface control) or to supply your own customized value.

- **Editing via manual input only** – For keywords of this type, there exists no dedicated user interface control on any of the following wizard pages. Therefore, the only way of changing these keywords is by supplying a customized value for the keyword manually, here in the keywords tree. Keywords of this type are keywords for very specific and advanced LISTSERV list features, which are seldom used. If you click the Edit link for such a keyword, an input dialog will allow you to supply the value for the keyword.

The following list header keywords are available in the keyword tree (note that some obsolete keywords are not supported):

- **Access Control Keywords**
  - Attachments
  - Filter
  - Review
  - Send
- **Distribution Keywords**
  - Ack
  - Daily-Threshold
  - Digest
  - Mail-Via
  - Newsgroups
  - Prime
  - Reply-To
  - Sender
  - Sub-lists
  - Topics
- **Error Handling Keywords**
  - Auto-Delete
  - Errors-To
  - Loopcheck
- **Maintenance / Moderation Keywords**
  - Configuration-Owner
  - Editor
  - Editor-Header
  - Moderator

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- New-List
- Notebook
- Notify
- Owner
- Peers
- Renewal
- Sizelim
- Subject-Tag
- X-Tags

- **Security Keywords**
  - Change-Log
  - Confidential
  - Exit
  - Local
  - Service
  - Validate
- **Subscription Keywords**
  - Confirm-Delay
  - Default-Options
  - Default-Topics
- **Other Keywords**
  - Categories
  - Language
  - Limits
  - Mail-Merge
  - Misc-Options
  - Translate

7.2.5 List Options for Unmoderated Discussion Lists

The List Options screen is divided into several tabs – General Options, Reply Behavior, Bounce Handling, List Archive, and several with advanced features – that can be accessed by clicking the drop-down menu. The List Archive is optional and will not appear unless archives have been set up in the HUB. For more information on archives, see the LISTSERV Maestro Administrator's Manual.

On the General tab, all list types require that a list administrator called a "list owner" be set. Enter at least one email address that will become the administrator (owner) of the LISTSERV list. Click the **Edit** link to add a new address or edit the existing ones in the pop-up dialog box. Entries must be valid Internet email addresses.

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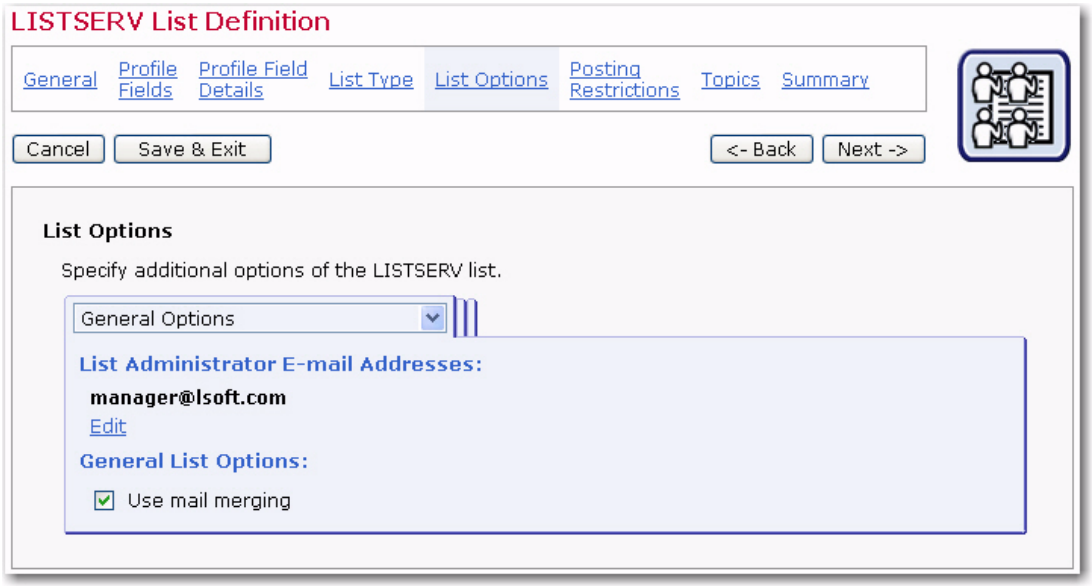
Figure 7-12 The LISTSERV List Wizard - Set the List Administrator



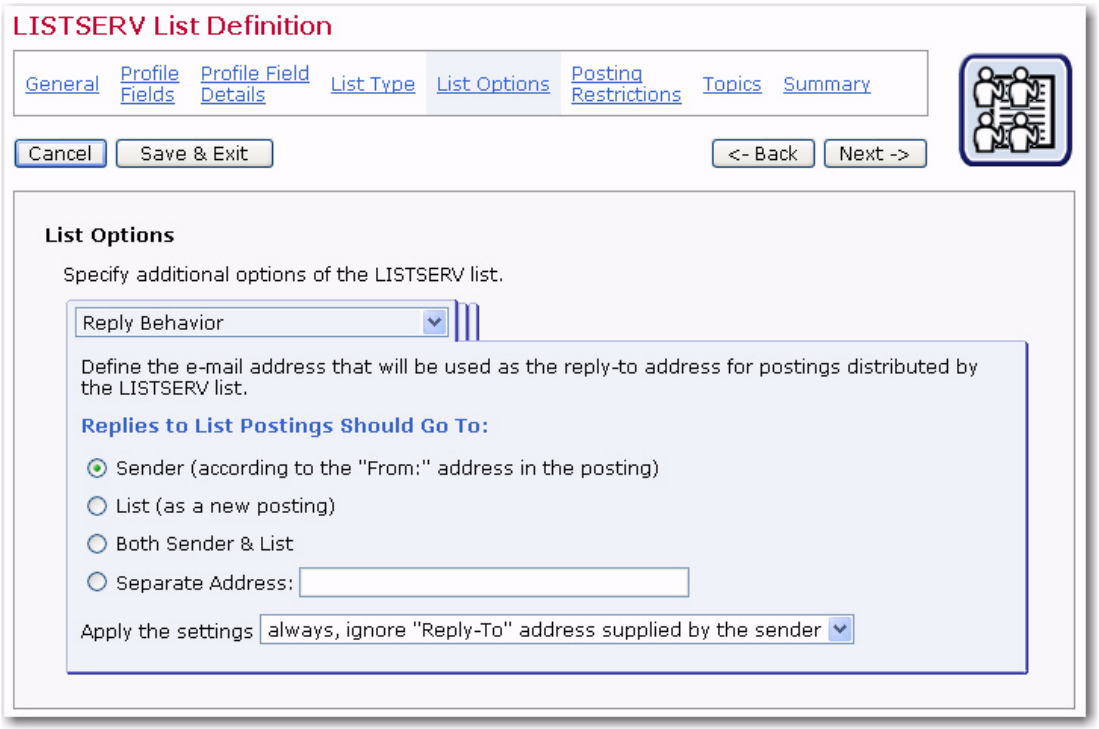
Click **[OK]** to accept the administrator address and return to the General Options tab.

The General Options tab also contains the following option:

- **Use mail merging** – Select this option to allow the system to insert subscriber specific content into the message based on the data associated with each subscriber. Subscribers will each receive a customized copy of the message with their own email address and name on the `To:` line. Other data fields can be merged into the message as well to further personalize the email.

The Reply Behavior tab determines where any replies from subscribers are sent.

Figure 7-13 The List Wizard for LISTSERV List - Reply Behavior Tab



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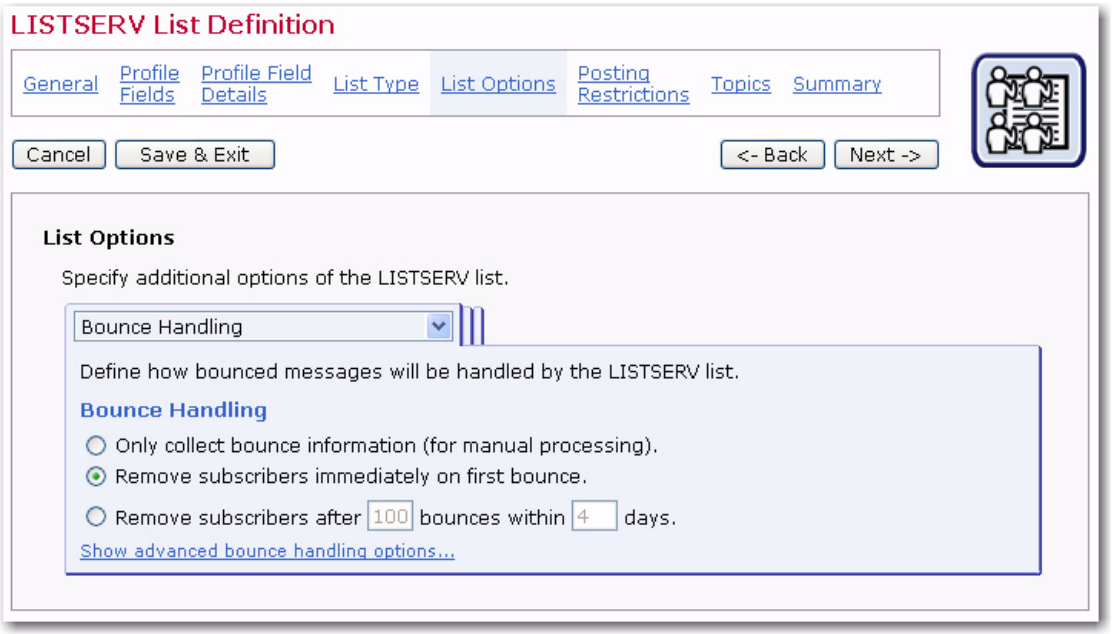
There are four options available:

- **Sender** – Replies are directed to the sender of the email message. The sender address is the address based on the “From:” field of the posting.
- **List** – Replies are directed back to the list. If subscribers are not well informed that, when they hit the “reply” key in their mail client, their message goes to everyone, then they might post private or off topic messages back to the list by mistake.
- **Both Sender & List** – Replies are directed to both the original sender and the list.
- **Separate address** – Replies are directed to the address entered in this text box.

Then, using the **Apply the Settings** drop-down menu, select when the settings are to be applied.

The Bounce Handling tab determines what happens to the subscriber addresses when messages sent to them bounce (are rejected from the email server and returned to the sender undeliverable). LISTSERV lists can handle bounces by removing the bouncing addresses automatically or by collecting bounces for manual action. Manually processed bounces are sent to the list administrator’s address.

Figure 7-14 The LISTSERV List Wizard - Bounce Handling Tab



Select one of the three available the bounce processing options:

- **Remove immediately after first bounce** – The address that bounced the mail will be removed from the list after the first bounce. Subscribers will have to be re-added to the list to receive any additional mail.
- **Remove subscribers after X bounces within X days** – Enter the number of bounces that are permitted in the first text box, and the number of days they can occur over in the second box. This setting is more flexible than the first setting. For example, if the reason for the bounce is temporary, such as a full mailbox, then new messages can still be sent. Subscribers will not be removed from the list unless the

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messages continue to bounce over the given time period, or bounce the number of times specified. Care must be taken to choose realistic numbers, in accordance with the expected list traffic

- **Collect bounces for manual processing** – Bounce addresses will be sent to a specific address where they can be reviewed and action can be taken manually. Subscriber addresses that generate bounces will not be removed from the list automatically, regardless of the number of bounces.

For additional bounce handling options, click on the **Show advanced bounce handling options** link.

If you have selected one of the automatic bounce handling options above, then you can also specify whether or not this should actually result in an automatic removal of addresses from the list (which is the default) or if the bounce analysis should only be forwarded (via e-mail).

If you select automatic removal, then a notification about all removed addresses will be sent to the specified group of people, and you also have the choice if you also want to be notified about any temporary bounces and bounces for addresses that are not actually subscribed to the list.

If you select no automatic removal, then you need to specify the group of people to which the bounce analysis will be forwarded to by clicking the **Add** link. To change this information, click the **Edit** link.

Furthermore, you can define the **Passive Probing** behavior of the list.

To again hide the advanced bounce handling options, click on the **Hide advanced bounce handling options** link. This, however, is only possible if the advanced options are set to their default values, i.e. if you have non-default advanced options, then you can also not hide the advanced options.

The List Archives tab defines whether or not postings to the list will be archived. If an archive is to be kept, then define how often a new archive file is to be created by the system and who is allowed to access and view the archive.

For the latter two options, there are two modes of specifying the necessary details: In **Standard Mode**, only the most common settings are available. In **Advanced Mode**, all possible options are available. Toggle between the two modes with the **Switch to Standard Mode** and **Switch to Advanced Mode** links at the bottom of the tab.

Note: This tab is only available if the option of creating LISTSERV list archives has been enabled for your LISTSERV server by the LISTSERV Maestro administrator (this is a setting in the Administration Hub).

Once you're finished defining the archive behavior, click **[Next ->]** to continue.

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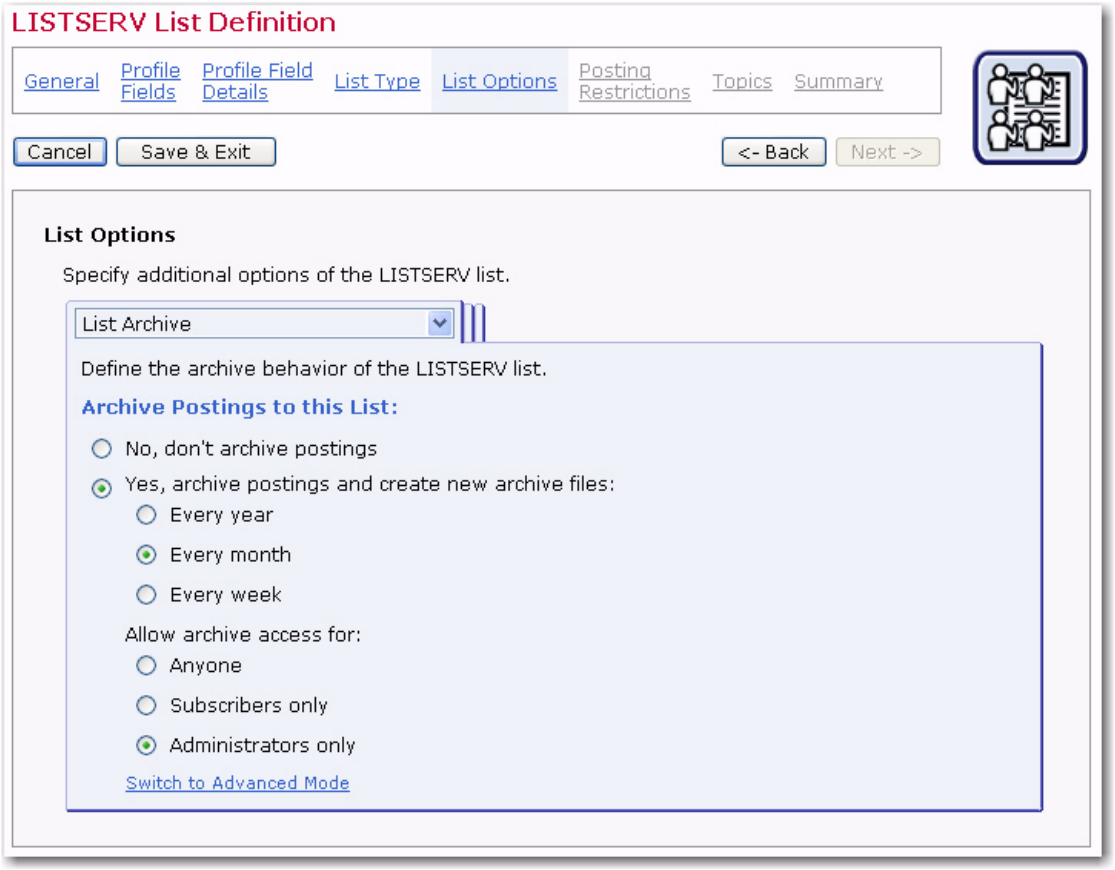
Figure 7-15 The LISTSERV List Wizard – List Archive Tab



7.2.5.1 Advanced Options

The Administrative Messages tab defines the settings for the administrative messages that LISTSERV sends to the list subscribers in various situations:

- **Use texts from English default template "maestro.mailtpl"** – The text for the administrative messages are taken from the default template (in English).
- **Use texts from custom template** – The text for the administrative messages are taken from the specified custom template. A custom template can be used for customization and translation of the text.

The Subscription Notifications tab defines if LISTSERV will send a notification message when a subscriber joins a list (or more precisely, confirms subscription to the list). If you select to receive notification messages, then you can also specify an address that the notifications will be sent to. If you not specify an address, then the notifications will be sent to the list administrator.

The List Visibility tab defines who will be allowed to see the list when using LISTSERV's features of asking for available lists.

The Subscription Options tab defines additional options that subscribers of the list can choose from:

- **Digest Behavior** – Check if you want to give subscribers the option to enable the "Digest" mode for their subscription. With the digest mode enabled, they will no longer receive the postings to the list as individual mails; instead, everything is

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compiled into a single digest email. If you enable this option, then you must also specify the rules that are used to compile and send out the digest email to all subscribers that have enabled the digest mode.

Also, if your list is configured to use a bottom banner, then this banner will, by default, not be included at the bottom of each individual message in the digest (to avoid a repetition of this banner throughout the digest). Instead, the banner will only appear once, after the digest's table of content. To avoid this behavior and include the bottom banner with each individual message in the digest, check the corresponding option.

- **Subject Tag** – These settings define which subject tag will be used for subscribers that have selected to receive mails with the "normal LISTSERV header, with list identification tag in subject" (for example to be able to better filter their incoming mails from this list). Either select to use the list name as the subject tag or provide an individual subject tag. In addition, you have the option to add a sequence number to the subject tag.

  Subscribers who have chosen other header styles than "normal LISTSERV header, with list identification tag in subject", will receive the normal mail subject without a subject tag. An exception of this rule may be made for subscribers who have selected to use "sendmail-style" mail headers. If you want to **Also add the subject tag** for subscribers with this mail header style, check the corresponding option. Note that this will add the subject tag for all subscribers with this header style, i.e. in contrast to the normal LISTSERV header style, where the subscriber has the choice of having the subject tag included.

The Subscription Options (defaults) tab defines the default subscription options that any new subscriber will initially use. Subscribers may later change their own subscription options to different values, but these are the options that they start with, by default.

- **Default Subscription Style** – Defines the default subscription style of new subscribers. Depending on other list settings (if list archives and/or list digests are enabled), the following subscriptions styles may be available:
  - **Individual Postings (No Digest)** – The subscriber will receive individual mails for each posting to the list.
  - **Plain Text Digest** – The subscriber will receive a regular digest in plain text format, with a compilation of all postings since the last digest.
  - **MIME Digest** – The subscriber will receive a regular digest in MIME format, with a compilation of all postings since the last digest.
  - **HTML Digest** – The subscriber will receive a regular digest in HTML format, with a compilation of all postings since the last digest.
  - **Plain Text Index** – The subscriber will receive a regular mail in plain text format, with an index of the subject lines of all postings since the last index (but not the actual message content of the postings).
  - **HTML Text Index** – The subscriber will receive a regular mail in HTML format, with an index of the subject lines of all postings since the last index (but not the actual message content of the postings).

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- **Default Posting Privileges** – (Only available for lists of the user defined type). Define which posting privileges will be applied to new subscribers (and also non-subscribers) by default:
  - **Normal** – Normal posting privileges (as defined by the other list settings, especially the "Send" keyword).
  - **User may bypass moderation** – Posting is allowed without moderation, even on a moderated list (usually not useful on a non-moderated lists).
  - **All postings of user sent to owner(s) for review** – Posting is allowed but only after moderation/review through the list owners (usually not additionally useful on lists which already are moderated).
  - **User may not post to list** – Postings are not allowed (usually not additionally useful on lists where posting is disallowed anyway).
- **Default Acknowledgement Behavior** – (Only available for lists of discussion-types or user defined type.) Define the acknowledgement behavior that will be applied to new subscribers by default. This determines how (and if) LISTSERV will acknowledge postings by a subscriber:
  - **Do not send any acknowledgement message** – Postings by subscribers will not be acknowledged to the poster, but will simply be distributed to the list.
  - **Acknowledge postings with a short message** – Postings by subscribers will be acknowledged with a short message that is sent back to the posting subscriber.
  - **Acknowledge postings with a full copy of the posted message** – Postings by subscribers will be acknowledged with a full copy of the original posting that is sent back to the posting subscriber.
- **Set subscribers to "no mail" by default** – Check so that any new subscribers will initially have the "no mail" option enabled, i.e. their subscription is suspended and they will not receive any mailings until they set their subscription to active.
- **Exempt subscribers from renewal and probing by default** – Check so that any new subscribers will initially not be included in LISTSERV's mechanisms to probe and/or renew subscriber addresses (this is used to keep the subscriber base up to date and to weed out "dead" addresses).
- **Hide subscriber addresses from "REVIEW" listing by default** – Check so that any new subscribers will initially be "concealed". A concealed subscriber will not appear on the list of list subscribers that can be obtained from LISTSERV using the REVIEW command. There exists a special list setting that defines who is allowed to perform the review command in the first place, i.e. not all users may always execute a review, but even those users who are allowed to do this will not see the concealed subscribers. Note that concealed subscribers of a Hosted LISTSERV List will still be visible from inside of LISTSERV Maestro. Also, some privileged users may be allowed to perform an advanced review command that will list even the concealed subscribers.
- **Default Mail Header Style** – Define which mail header style any new subscribers shall use by default:

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- **LISTSERV-style without subject tag** – Use the normal LISTSERV-style mail header, do not add a special list identification tag to the subject line.
- **LISTSERV-style with subject tag** – Use the normal LISTSERV-style mail header and add a special list identification tag to the subject line.
- **Sendmail-style (preserves original header)** – Use the header from the original posting to the list.
- **Other** – If selected, please select one of the more advanced header styles from the drop-down menu. These styles are for specific purposes and are usually not used with normal LISTSERV lists: Additional headers in mail body, Short headers, Individual "To:" with full headers or Individual "To:" with short headers.

The Change Logs tab defines if and how change log files will be maintained by LISTSERV for this list. Select whether or not a change log will be maintained; and, if so, how often LISTSERV will start a new file.

The Delivery Options tab defines some of the general delivery options for the list. These options are:

- **Suppress "ApprovedBy:" mail header** – Check if you do not want the "ApprovedBy:" header to be added to all mailings that are approved by a moderator or list owner (usually only applies to moderated lists).
- **Remote multi-byte characters** – Check if you want all multi-byte characters to be removed from postings to this list. Note that this can cause trouble on internationally used lists, where languages other than the English language may be used for postings.
- **If spam checking is enabled at LISTSERV** – If the spam-checking feature is enabled at LISTSERV, then specify if the server-wide settings will be respected by this list (and spam checks are performed) or if the server-wide settings will be ignored for this list, meaning that no spam checks are performed for the postings to this list.
- **If DomainKeys-signing of emails is enabled at LISTSERV** – (This option only appears if allowed by the LISTSERV Maestro administrator. This is a setting in the Administration Hub.)

  If the DomainKeys-signing feature is enabled at LISTSERV, specify if the server-wide settings will be respected by this list (and postings are signed) or if the server-wide settings will be ignored for this list, meaning that no signing is performed for the postings to this list.

7.2.6 Posting Restrictions for Unmoderated Discussion Lists

Posting restrictions set limitations on message attachments, message size, and the number of messages that can be sent to the list. These restrictions affect messages sent to the LISTSERV list when they are submitted as **standard list postings**. A standard list posting is a normal email message sent to the list. Standard list messages can be received in a digest form, and can be viewed in the list archives if archives have been created for the list. Standard list postings can be sent (without tracking) to the list address using a normal email client, or they can be sent using LISTSERV Maestro (with or without tracking) by selecting **Send to an Existing LISTSERV List**, while defining the recipients

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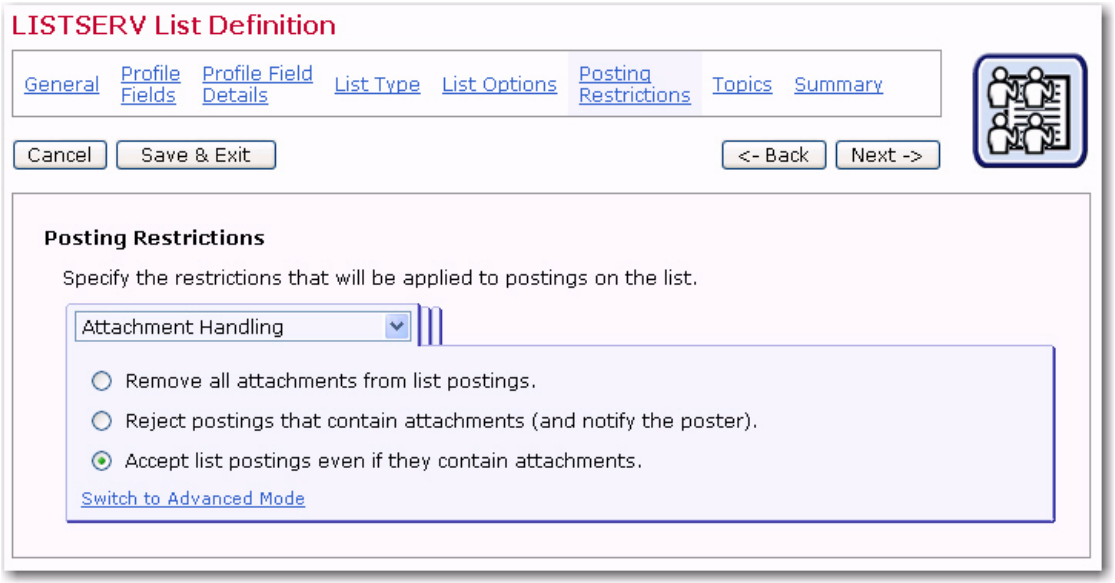
of a mailing, and by specifying **Send job as standard list message** (or by using a target group based on these selections).

The Attachment Handling tab sets the action the list will take when standard messages are receive with attachments. There are three options:

- **Remove all attachments from list postings** – Any postings that include attachments are distributed without the attachments
- **Reject postings that contain attachments (and notify the poster)** – Any postings that include attachments are rejected and not distributed. The poster is then notified.
- **Accept list postings even if they contain attachments** – All postings are distributed, no matter if they contain attachments or not, and all attachments are preserved.

Figure 7-16 The LISTSERV List Wizard – Attachments Handling Tab



To enable the advance mode, click the **Switch to Advanced Mode** link. In advanced mode, these options are also available:

- **Decide based on attachment type** – Any postings that include attachments are inspected. If they contain only attachments of allowed types, they are distributed normally, with all attachments. If they contain (some) attachments of disallowed types, then either those disallowed attachments are removed or the whole posting is rejected (and the poster is notified about this). Check those attachment types (MIME-types) that you want to specify as allowed attachment types. If you need to specify an attachment type as allowed for which there is no checkbox, click on the Edit link and enter the MIME-type (or types) of those additionally allowed attachment types. Then, determine what shall happen if a posting contains any disallowed attachments (remove the disallowed attachments or reject the whole posting).
- **Reject HTML-only messages and remove HTML part from multipart messages** – If checked, then all postings that are only HTML will be rejected,

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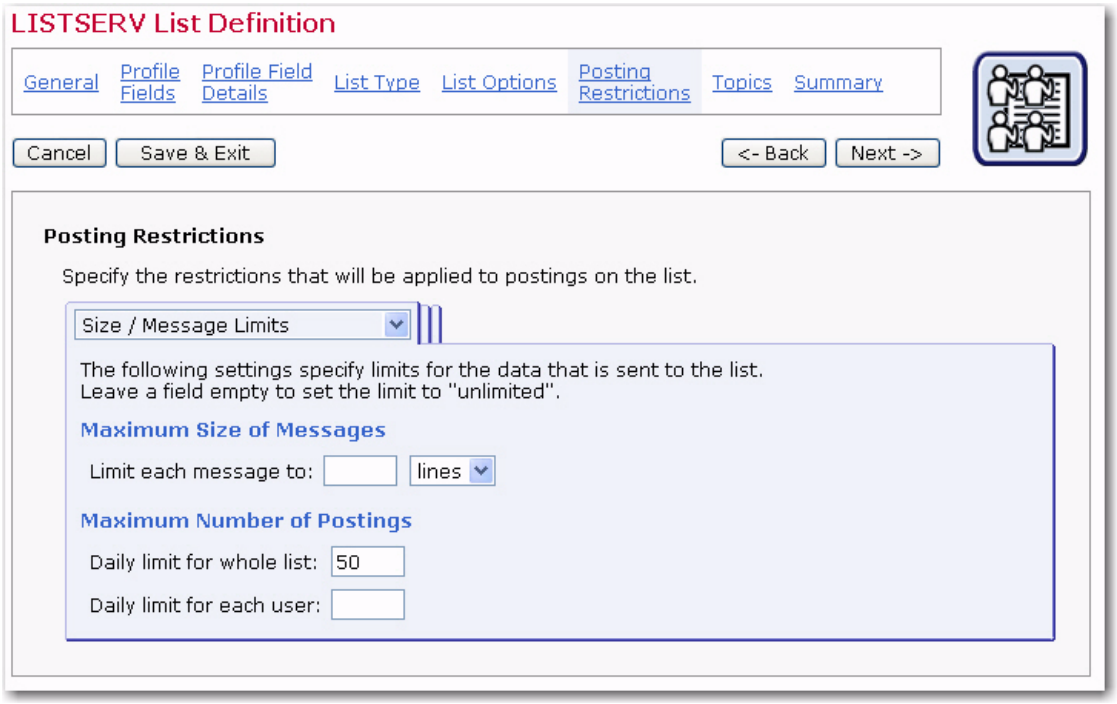
and all multipart messages that contain HTML as one of their parts will be stripped of this HTML part.

- **Remove non-MIME attachments** – If checked, then attachments of this special type will be removed from the posting before it is distributed.
- **Remove Microsoft Exchange formatted attachments** – If checked, then attachments of this special type will be removed from the posting before it is distributed.

The Size / Message Limits tab defines the size or message count limits for the list.

Figure 7-17 The LISTSERV List Wizard – Size/Message Limits Tab



- **Limit each message to** – Specify how "large" any individual message may be at maximum. Either leave the field empty (which means that there is no limit), or specify a positive number as the limit and select what kind of limit this number describes from the drop-down menu.
- **Daily limit for whole list** – Specify how many postings may happen on this list on any given day. Leave empty for no limit or specify the maximum number of postings to the list per day, no matter who is the sender.
- **Daily limit for each user** – Specify how many postings each user can make on any given day. Leave empty for no limit or specify the maximum number of postings to the list per day for each user (sender). This value must be less than or equal to the Maximum postings allowed per day for whole list (see above).

The Allow Sender Addresses tab defines the addresses that are allowed to post to this list. Click the **Edit** link to specify the address.

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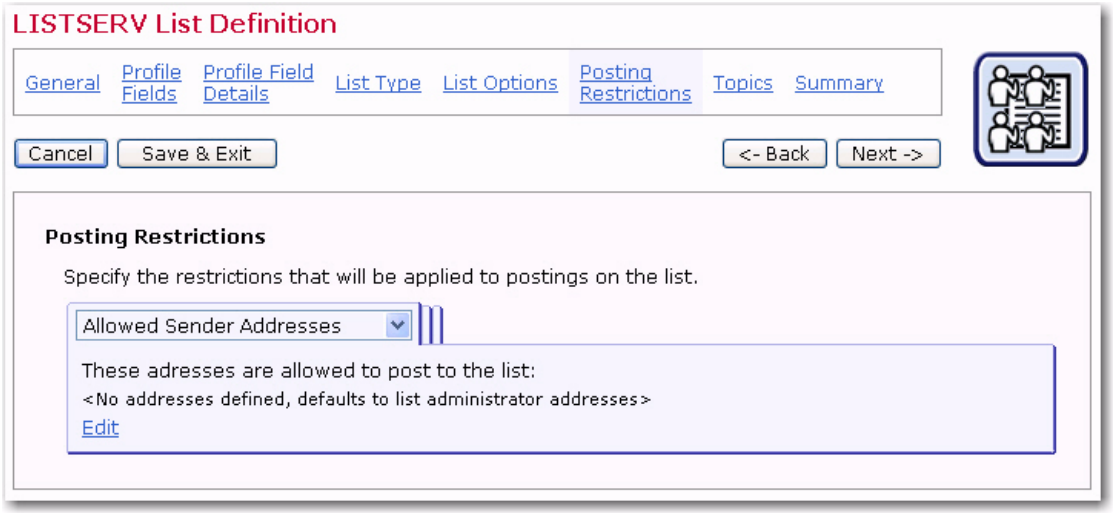
Figure 7-18 The LISTSERV List Wizard – Allowed Sender Addresses Tab



7.2.6.1 Advanced Options

The List Moderation tab defines the moderation settings of a list.

Note: For an unmoderated-discussion-type list, at first glance it seems illogical to have a List Moderation tab at all (after all, the list is unmoderated). However, there are actually some cases in which moderation may even be required on an unmoderated list. These cases are however advanced cases, which is why this tab appears in the "Advanced" group for unmoderated-discussion-type lists. For such lists, moderation is generally not used, however, individual subscribers (for example known "troublemakers") can be marked for moderation anyway, even when all other subscribers can post without moderation. Therefore, in some cases the moderation settings are needed even for unmoderated lists.

The following options are available on this tab:

- **Moderator Addresses** – Specify the addresses to which list postings that require moderation are forwarded. Only after a moderator has reviewed and confirmed a list posting will it actually be distributed to the list. Click the **Edit** link to specify the addresses.
- **Moderation Type** – If there are several moderator addresses, then LISTSERV can either send a posting that requires moderation to only one of the moderators (LISTSERV selects which one) who must then approve the posting, or LISTSERV can send a copy of the posting to each moderator, and an approval from any of them will allow the posting to be distributed. Choose which type you want to use for this list.

Note: This choice is disabled unless you have at least two moderator addresses specified.

- **Moderator Approval of List Postings** – Select the mechanism by which a moderator must approve a posting that requires moderation:

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- **A simple "OK" is enough** – The moderator can approve postings by sending back an email to LISTSERV with "OK" as the only content, or the moderator can approve the a posting via the LISTSERV Web Interface (if the web interface is installed).
- **Require the moderator to forward the full message** – The moderate has to forward the whole message to the list in order to approve it (i.e. essential the moderator re-posts the same message, which will then be distributed directly). Note that with this mechanism an approval via the LISTSERV Web Interface is not possible.

The Posting Confirmation tab is used to avoid spamming of a list and to verify the origin of a list posting. Using the options on this tab, it is possible to enforce that postings to the list are confirmed by the poster before they are actually being distributed to the list. (Note that postings sent with LISTSERV Maestro never require this additional confirmation and are therefore not affected by the settings made here. These settings apply only for manual postings.)

- **No confirmation required** – Postings are accepted without an additional confirmation (unsecure).
- **Postings must be confirmed with an "OK"** – Postings are only distributed to the list once they have been confirmed with LISTSERV's "OK" mechanism.

Note About LISTSERV's "OK" mechanism for confirmations: To confirm a posting, LISTSERV sends an email back to the poster requiring the confirmation. The poster must then respond to this confirmation request by either sending an email with "OK" in the body back to LISTSERV, or by clicking on the confirmation link provided in the email (the confirmation link is only provided if the LISTSERV Web Interface is installed on the LISTSERV server).

7.2.7 Topics for Unmoderated Discussion Lists

Large active LISTSERV lists often use "sub-groups" within the list to give subscribers the opportunity to receive only the posts to the list they are most interested in reading. Sub-groups are created by defining topics. Lists can have up to 23 topics defined. List subscribers can elect to receive only those messages that fit into the topic(s) they are interested in reading. Similarly, messages can be posted only to specific topics. For example, a large list could have the general subject of XYZ Software. Topics could be defined by the types of users of the software, the type software purchased, or tips and tricks for using the software. For more information on Topics, see the LISTSERV List Owner's Manual.

To define a new topic, simply click the **New Topic** link and fill out the empty topic row that appears. In the list, topics are displayed either in the display mode or in the editable mode. In the display mode, each topic has an associated **Edit** link to set it into the editable mode. In the editable mode, the topic name can be changed and the following actions are available: **Reset** (forget changes and reset the topic to the state it had when the editable mode was last entered for it), **Up** (move the topic up one step in the topics list), **Down** (move the topic down one step in the topics list), and **Remove** (remove the topic).

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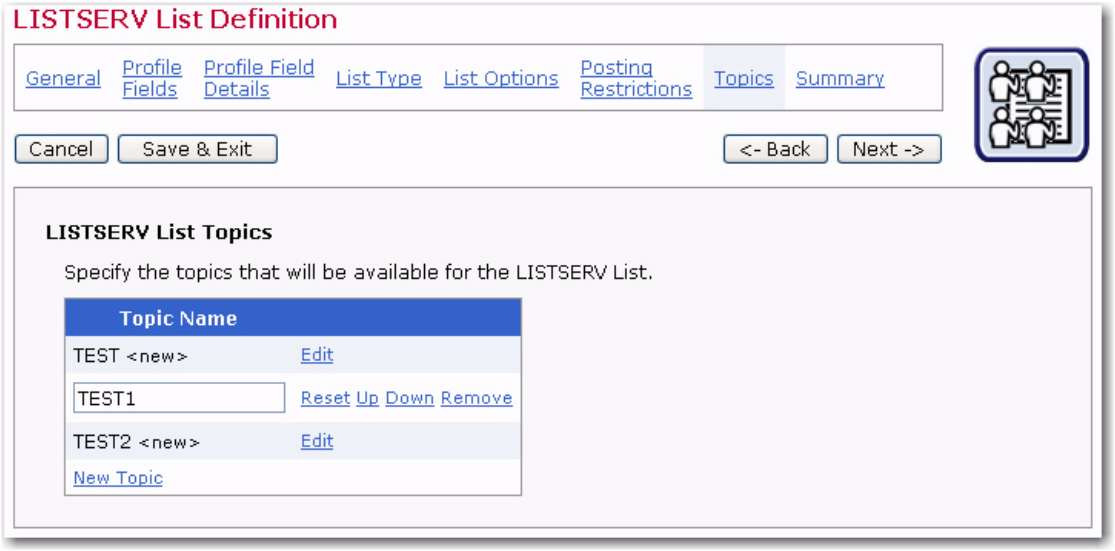
When the topic settings of a populated list change, then all current subscribers' topic selections will need to be adjusted. This will occur when the LISTSERV list wizard is completed. The adjustment may take some time and a progress bar will be displayed as the system works.

Tip: Changing topics on a list where subscribers are currently very active needs to be carefully considered so a disruption does not occur. A better strategy would be to temporarily close the hosted LISTSERV list for maintenance (available on the Summary screen), adjust the topics, and then re-open the list.

When adding new topics to a list that already has subscribers, an additional option, **Existing subscribers will have the new topics selected automatically**, will appear. Select this option to automatically add the new topics to all the existing subscriptions. If this option is not selected, then the existing subscribers will not be subscribed to the new topics. Subscribers will be able to change their settings to add or drop the new topics if the dataset and list subscriber pages are enabled. This option applies to all topics that are added on this page during the same List wizard session. To add several topics, some of which the current subscribers are automatically subscribed to and some not, the List wizard has to be engaged twice, once with the option selected (for those topics to be added to all subscriptions) and once with the option not selected (for those topics that will not be added to all subscriptions).

Figure 7-19 The LISTSERV List Wizard – List Topics Screen



Once you're finished selecting your topics for the list, click **[Next ->]** to continue.

7.2.8 Summary for Unmoderated Discussion Lists

The Summary screen displays all the selections made for the LISTSERV list during its creation. Use the **[<- Back]** button or any of the links in the top bar to revisit any page in the wizard to make changes.

Before the list can be used, its access level needs to be set using the **Public List Access** drop-down menu. The list can be set to be accessible to anyone with access to the dataset wishing to subscribe, to be accessible to only list subscribers, or to have no public access. If a list is accessible to everyone, it will appear on the membership area Web

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page to anyone visiting that page. If the list is accessible only to members, the list will not appear in the membership area to everyone, it will only appear only to those who are subscribed to the list. This allows existing subscribers to manage their own settings, but new subscribers must be added by the Data Administrator or designated LISTSERV Maestro team members. Lists with no public access do not appear in the membership area to anyone.

Click **[Finish]** to accept the list as it is summarized and return to the Recipient Dataset Details screen.

7.3 Creating LISTSERV Moderated Discussion Lists

Similar to the unmoderated discussion list, a moderated list allows for the exchange of postings between subscribers, but a moderator receives all incoming messages. The moderator then decides to accept the message, and post it to the list, or reject the message, and not post it to the list. Lists can be set up with more than one moderator.

Spamming and flaming are much less likely to happen on this type of list because all the postings are subject to approval by a person before they can be posted to the list.

Moderators receive and review postings sent to the list. They then decide to approve the messages, sending them through to the list, or reject them, preventing them from being sent to the list. If there are multiple moderators, the list postings are sent to all moderators. The first moderator to take action, approving or rejecting the message will determine how the message is handled in regards to the list.

The editors are those addresses that are allowed to send messages to the list without requiring moderation. If no moderator addresses are defined, then the first listed editor becomes the sole editor. The list administrator address is always allowed to send mail to the list without moderation, and if no moderator or editor addresses are added, then the first list administrator automatically becomes the moderator so that all messages sent to the list will go to that address for approval or rejection.

7.3.1 General Settings for Moderated Discussion Lists

The General screen defines the general information pertaining to the list.

- **Name** – The name of the mailing list. Subscribers will see this name of the list on the web form when they subscribe. Data administrators will see the list name in the dataset tree and if they create a target group from a classic LISTSERV list (see Section 14 Classic LISTSERV List Target Groups for details). LISTSERV Maestro users will see the list name if they are allowed to define recipients for a job using by sending to an existing LISTSERV list.
- **Internal Description** – The internal description is only seen by users working within the Maestro User Interface.
- **Public Description** – The public description of the list appears on the subscription web form. If subscribers are permitted to select the lists they want to join and can view and change their subscription settings, then having accurate descriptions will help them accomplish those tasks.

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Once you've finished specifying the name and description of the list, click **[Next ->]** to continue.

7.3.2 Profile Fields for Moderated Discussion Lists

The Profile Fields screen lists all of the fields in the dataset. Other fields can be added to the list. Any added list fields will not be shared with the other lists in the dataset. To add a new field, click the **Add Field** link.

For each new field, enter the following information:

- **Name** – The name of the field as it will be used internally by the system for mail merging and querying. Field names can only use upper and lower case letters "A-Z" and "a-z", the numbers "0 – 9" and the underscore "_". Spaces and other special characters are not allowed.
- **Display Name** – The label that identifies the field on the web form. The display name will be seen by anyone accessing the list's public subscription page on the Web. All alphanumeric characters are permitted, as well as spaces and special characters allowed by the dataset encoding scheme.
- **Data Type** – Choose the type of data to be entered in the field from the drop-down menu. Three different classifications of data are available (selection lists are not available for hosted LISTSERV lists):
  - **Text** – Text fields can accept any type of text, including dates in specific formats such as dd/mm/yyy or mm.dd.yyyy.
  - **Number** – Number fields accept any whole integers.
  - **Boolean** – Boolean fields are based on two states – true or false.
- **Input Type** – Decide whether the data is mandatory for subscribers to enter into the web form or optional. Optional fields can be designated as hidden or read-only if the subscribers are not allowed to enter or change the data in those fields. Boolean fields cannot be optional due to the nature of the data type. Boolean fields can be visible or hidden.

After list fields are created, they can be edited, removed, moved up, or moved down by using the corresponding links on the right side of the table. Fields belonging to the dataset cannot be moved or edited from this screen.

Once you're finished adding fields to the list, click **[Next ->]** to continue.

7.3.3 Profile Field Details for Moderated Discussion Lists

The Profile Field Details screen lets you specify which LISTSERV fields are used to assemble the "Full Name" of the list subscriber.

Hosted LISTSERV lists require a **Name Field** to be defined. If a single name field exists for each subscriber, move that field from the **Profile Fields** box to the **Name Fields** box. If two (or more) fields are to be used to make up a full name, move each of the fields from the **Profile Fields** box to the **Name Fields** box. The second field is added after the first field, leaving a space in between. This makes it easy to combine a first name field with a last name field to produce a **Full Name** field, for example. Use the **Move Up** and **Move**

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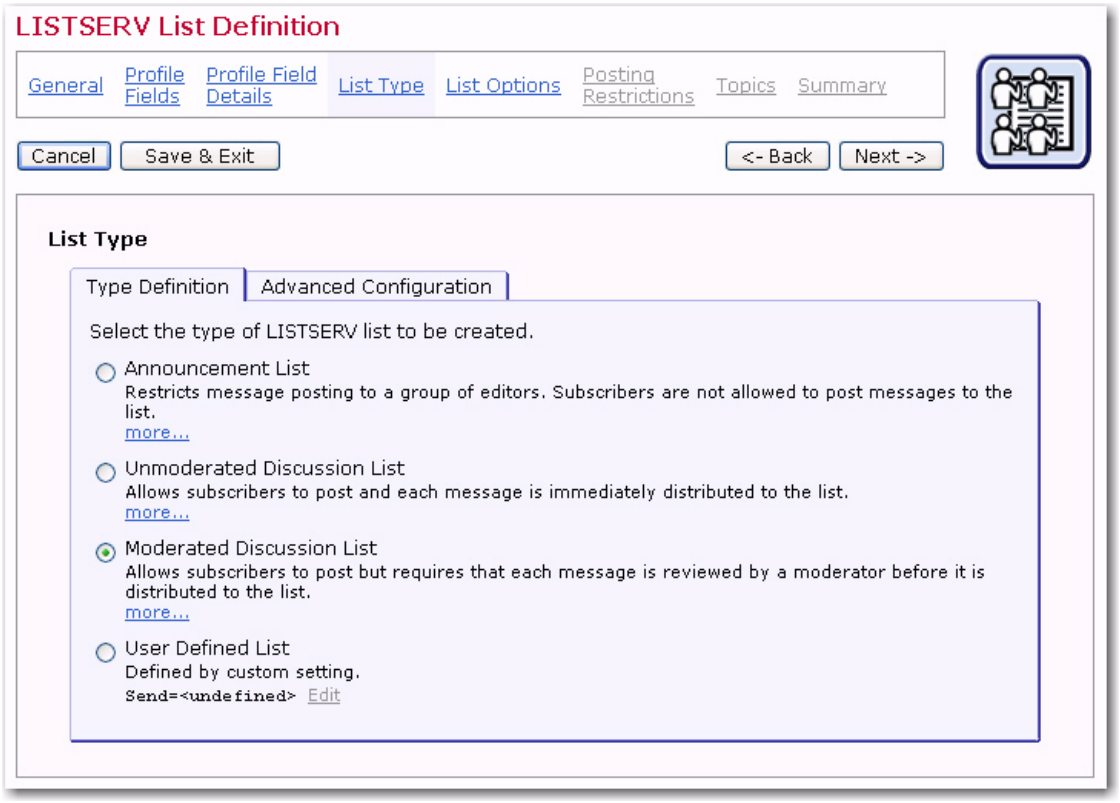
Down links to change the order of the name fields. The fields are not required to be mandatory; although, the existence of at least one name field is required, but it does not have to be filled in by every subscriber.

Once you're finished specifying the fields to use for the name, click **[Next ->]** to continue.

7.3.4 List Type for Moderated Discussion Lists

The List Type screen lets you select the type of list you want to create. Select the **Moderated Discussion List** option. This type of list is used for two-way communication. Subscribers' posts are sent to a list moderator who can approve the message and have it distributed to the list members, or reject the message so it is not sent on to the list members.

Figure 7-20 The LISTSERV List Wizard - List Type Screen



Once you've selected the type of list you want to create, click **[Next ->]** to continue.

Note: For this list type, the sender address must be one of the addresses listed as the **Moderator Addresses** or the **Unmoderated Senders** on the List Moderation tab of the Posting Restrictions screen.

7.3.4.1 Advanced Configuration

Using the Advanced Configuration tab, you can view and edit the actual LISTERV list header keywords that define the behavior of the Hosted LISTSERV List.

Important: This is an advanced feature that requires knowledge of and experience with LISTSERV list headers and list header keywords; therefore, it should only be used by experienced LISTSERV list administrators. For most standard list

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purposes, there is no need to edit the list header keywords on this tab directly, but you can instead use the controls that are provided on the following wizard pages (List Options, Posting Restrictions, and Topics).

This tab shows a tree with all available list header keywords, separated into seven groups (see the list of groups and keywords below). Click on the "+" icon to open a group or the "-" icon to close a group.

The keywords themselves are displayed in different styles, depending on their current configuration:

- A blue circle icon and black text: This keywords has been configured via one of the special controls on the following wizard pages (List Options, Posting Restrictions, or Topics) and will appear in the list header with the displayed value.

- A green circle icon and bold black text: This keyword has been configured with a manually supplied value via the Edit link here on the Advanced Configuration tab. It will appear in the list header with the displayed value (or will be omitted from the list header, if applicable).

- A grey circle icon and grey text: This keyword is currently not configured and will not appear in the list header.

- A grey circle icon and bold red text: This keyword is currently not configured but must be configured before the wizard can be finished.

- A red circle icon and bold black text: This keyword has been configured with a manually supplied value via the Edit link here on the Advanced Configuration tab and was included in the list header with the displayed value (or was omitted from the list header, if applicable). However, when the list header was transferred to LISTSERV, LISTSERV reported an error in the value of this keyword. To see the original LISTSERV error message for this keyword, select the keyword in the tree and click the Edit link.

To view the actual textual list header that is the result of the keyword input here in the keyword tree and in the user interface controls on the following wizard pages, and which thus defines this Hosted LISTSERV List, click on the **View Configuration as Plaintext** link at the bottom of the tree.

To edit the value of a given keyword, select the keyword in the tree and click on the **Edit** link at the top right corner of the tree. Depending on the selected keyword, there are three possible edit situations:

- **Editing via wizard controls only** – For keywords of this type, all possible values that the keywords can have can be configured via the user interface controls that the wizard offers on the following wizard pages. Therefore, there is no need to be able to input a keyword value manually. If you click the Edit link for such a keyword, then a message box will inform you that instead of editing the keyword value manually, please use the provided user interface controls on the specified wizard page.
- **Editing via wizard controls or manual input** – For keywords of this type, user interface controls exist on the following wizard pages. However, those controls do not allow you to input the full range of possible values for this keyword (but only the most common values). You therefore have the choice of either using the user

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interface controls in the wizard or to supply a specific value for the keyword manually. If you choose to supply a value manually here in the keywords tree, then the corresponding user interface control on one of the following wizard pages will no longer be available. Instead a message will be displayed that informs you, that a custom value has been supplied for the corresponding keyword in the keywords tree. To make the user interface controls available again, go back to the keywords tree and remove the manually supplied value. If you click the Edit link for such a keyword, an input dialog will allow you to choose between using the user interface control in the wizard (this also includes an information about where to find the corresponding user interface control) or to supply your own customized value.

- **Editing via manual input only** – For keywords of this type, there exists no dedicated user interface control on any of the following wizard pages. Therefore, the only way of changing these keywords is by supplying a customized value for the keyword manually, here in the keywords tree. Keywords of this type are keywords for very specific and advanced LISTSERV list features, which are seldom used. If you click the Edit link for such a keyword, an input dialog will allow you to supply the value for the keyword.

The following list header keywords are available in the keyword tree (note that some obsolete keywords are not supported):

- **Access Control Keywords**
  - Attachments
  - Filter
  - Review
  - Send
- **Distribution Keywords**
  - Ack
  - Daily-Threshold
  - Digest
  - Mail-Via
  - Newsgroups
  - Prime
  - Reply-To
  - Sender
  - Sub-lists
  - Topics
- **Error Handling Keywords**
  - Auto-Delete
  - Errors-To
  - Loopcheck
- **Maintenance / Moderation Keywords**
  - Configuration-Owner

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- Editor
- Editor-Header
- Moderator
- New-List
- Notebook
- Notify
- Owner
- Peers
- Renewal
- Sizelim
- Subject-Tag
- X-Tags

- **Security Keywords**
  - Change-Log
  - Confidential
  - Exit
  - Local
  - Service
  - Validate
- **Subscription Keywords**
  - Confirm-Delay
  - Default-Options
  - Default-Topics
- **Other Keywords**
  - Categories
  - Language
  - Limits
  - Mail-Merge
  - Misc-Options
  - Translate

7.3.5 List Options for Moderated Discussion Lists

The List Options screen is divided into several tabs – General Options, Reply Behavior, Bounce Handling, List Archive, and several with advanced features – that can be accessed by clicking the drop-down menu. The List Archive is optional and will not appear unless archives have been set up in the HUB. For more information on archives, see the LISTSERV Maestro Administrator's Manual.

On the General tab, all list types require that a list administrator called a "list owner" be set. Enter at least one email address that will become the administrator (owner) of the

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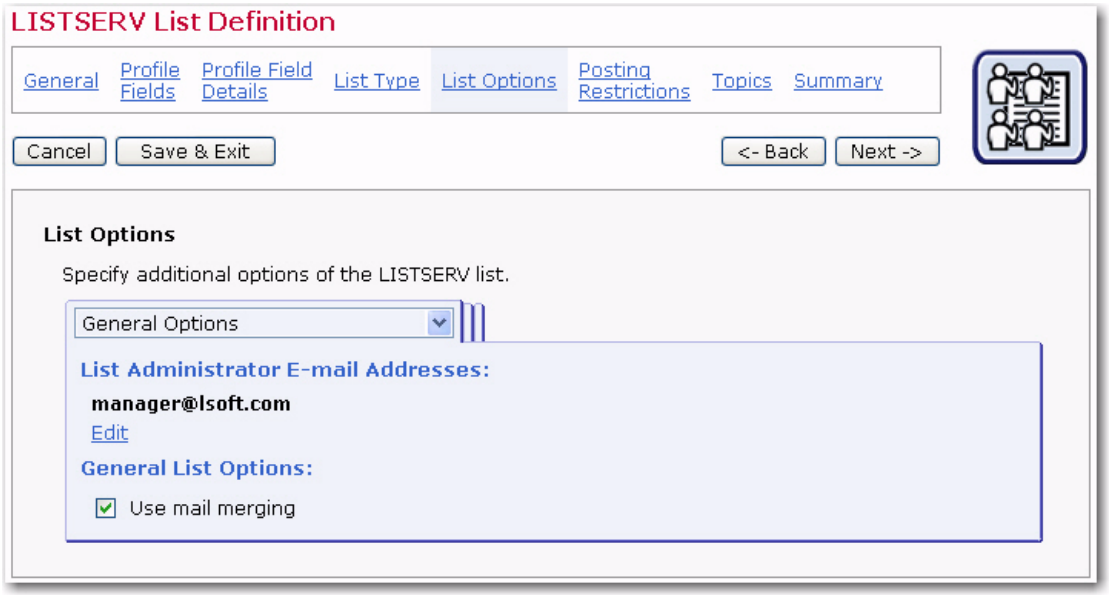
LISTSERV list. Click the **Edit** link to add a new address or edit the existing ones in the pop-up dialog box. Entries must be valid Internet email addresses.

Figure 7-21 The LISTSERV List Wizard - Set the List Administrator



Click **[OK]** to accept the administrator address and return to the General Options tab.

The General Options tab also contains the following option:

- **Mail Merging** – Select the **Use mail merging** option to allow the system to insert subscriber specific content into the message based on the data associated with each subscriber. Subscribers will each receive a customized copy of the message with their own email address and name on the `To:` line. Other data fields can be merged into the message as well to further personalize the email.

The Reply Behavior tab determines where any replies from subscribers are sent. There are four options available:

- **Sender** – Replies are directed to the sender of the email message. The sender address is the address based on the “From:” field of the posting.
- **List** – Replies are directed back to the list. If subscribers are not well informed that, when they hit the “reply” key in their mail client, their message goes to everyone, then they might post private or off topic messages back to the list by mistake.
- **Both Sender & List** – Replies are directed to both the original sender and the list.
- **Separate address** – Replies are directed to the address entered in this text box.

Then, using the **Apply the Settings** drop-down menu, select when the settings are to be applied.

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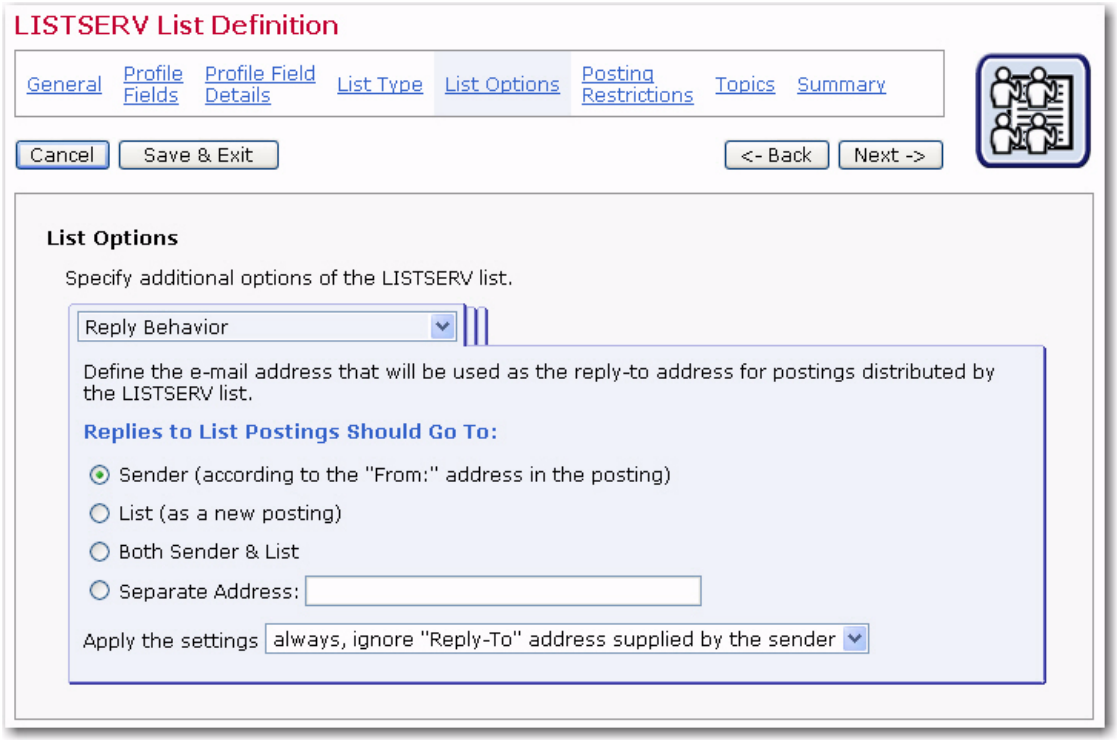
Figure 7-22 The List Wizard for LISTSERV List - Reply Behavior Tab



The Bounce Handling tab determines what happens to the subscriber addresses when messages sent to them bounce (are rejected from the email server and returned to the sender undeliverable). LISTSERV lists can handle bounces by removing the bouncing addresses automatically or by collecting bounces for manual action. Manually processed bounces are sent to the list administrator's address. Select one of the three available the bounce processing options:

- **Remove immediately after first bounce** – The address that bounced the mail will be removed from the list after the first bounce. Subscribers will have to be re-added to the list to receive any additional mail.
- **Remove subscribers after X bounces within X days** – Enter the number of bounces that are permitted in the first text box, and the number of days they can occur over in the second box. This setting is more flexible than the first setting. For example, if the reason for the bounce is temporary, such as a full mailbox, then new messages can still be sent. Subscribers will not be removed from the list unless the messages continue to bounce over the given time period, or bounce the number of times specified. Care must be taken to choose realistic numbers, in accordance with the expected list traffic
- **Collect bounces for manual processing** – Bounce addresses will be sent to a specific address where they can be reviewed and action can be taken manually. Subscriber addresses that generate bounces will not be removed from the list automatically, regardless of the number of bounces.

For additional bounce handling options, click on the **Show advanced bounce handling options** link.

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If you have selected one of the automatic bounce handling options above, then you can also specify whether or not this should actually result in an automatic removal of addresses from the list (which is the default) or if the bounce analysis should only be forwarded (via e-mail).

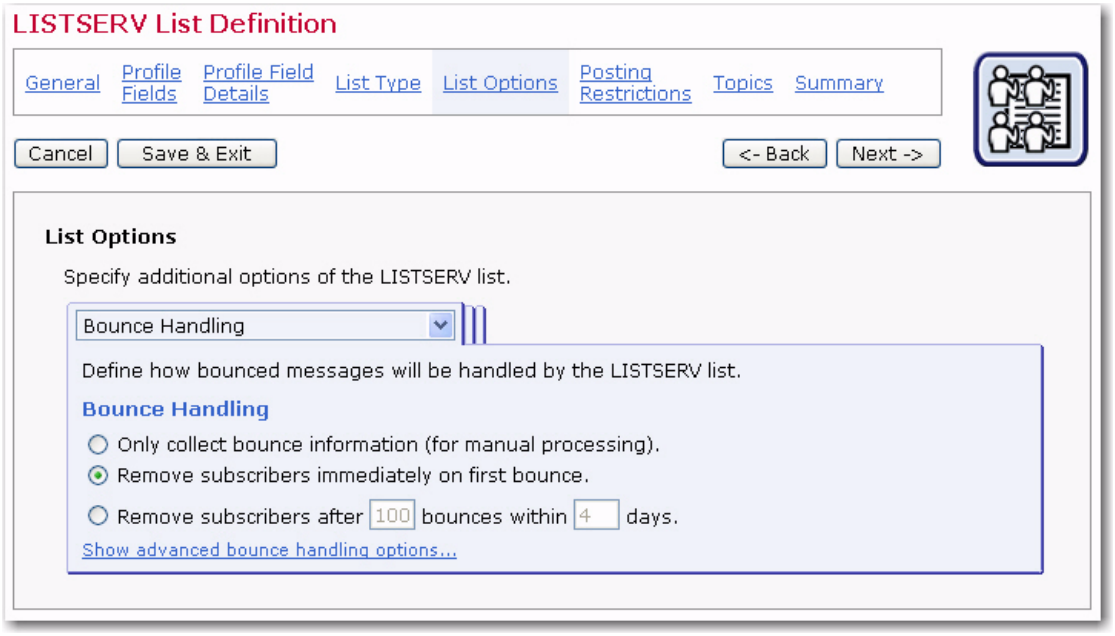
If you select automatic removal, then a notification about all removed addresses will be sent to the specified group of people, and you also have the choice if you also want to be notified about any temporary bounces and bounces for addresses that are not actually subscribed to the list.

If you select no automatic removal, then you need to specify the group of people to which the bounce analysis will be forwarded to by clicking the **Add** link. To change this information, click the **Edit** link.

Furthermore, you can define the **Passive Probing** behavior of the list.

To again hide the advanced bounce handling options, click on the **Hide advanced bounce handling options** link. This, however, is only possible if the advanced options are set to their default values, i.e. if you have non-default advanced options, then you can also not hide the advanced options.

Figure 7-23 The LISTSERV List Wizard - Bounce Handling Tab



The List Archives tab defines whether or not postings to the list will be archived. If an archive is to be kept, then define how often a new archive file is to be created by the system and who is allowed to access and view the archive.

For the latter two options, there are two modes of specifying the necessary details: In **Standard Mode**, only the most common settings are available. In **Advanced Mode**, all possible options are available. Toggle between the two modes with the **Switch to Standard Mode** and **Switch to Advanced Mode** links at the bottom of the tab.

Note: This tab is only available if the option of creating LISTSERV list archives has been enabled for your LISTSERV server by the LISTSERV Maestro administrator (this is a setting in the Administration Hub).

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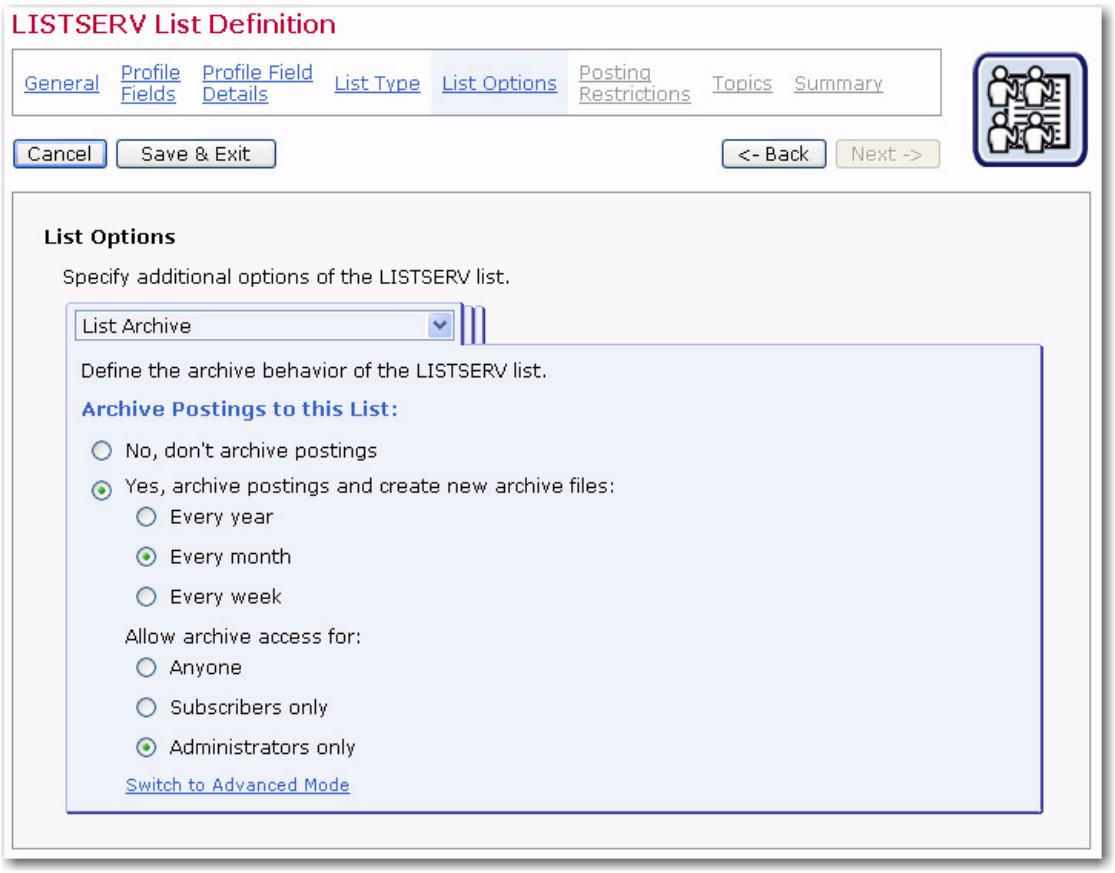
Once you're finished defining the archive behavior, click **[Next ->]** to continue.

Figure 7-24 The LISTSERV List Wizard – List Archive Tab



7.3.5.1 Advanced Options

The Administrative Messages tab defines the settings for the administrative messages that LISTSERV sends to the list subscribers in various situations:

- **Use texts from English default template "maestro.mailtpl"** – The text for the administrative messages are taken from the default template (in English).
- **Use texts from custom template** – The text for the administrative messages are taken from the specified custom template. A custom template can be used for customization and translation of the text.

The Subscription Notifications tab defines if LISTSERV will send a notification message when a subscriber joins a list (or more precisely, confirms subscription to the list). If you select to receive notification messages, then you can also specify an address that the notifications will be sent to. If you not specify an address, then the notifications will be sent to the list administrator.

The List Visibility tab defines who will be allowed to see the list when using LISTSERV's features of asking for available lists.

The Subscription Options tab defines additional options that subscribers of the list can choose from:

- **Digest Behavior** – Check if you want to give subscribers the option to enable the "Digest" mode for their subscription. With the digest mode enabled, they will no

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longer receive the postings to the list as individual mails; instead, everything is compiled into a single digest email. If you enable this option, then you must also specify the rules that are used to compile and send out the digest email to all subscribers that have enabled the digest mode.

Also, if your list is configured to use a bottom banner, then this banner will, by default, not be included at the bottom of each individual message in the digest (to avoid a repetition of this banner throughout the digest). Instead, the banner will only appear once, after the digest's table of content. To avoid this behavior and include the bottom banner with each individual message in the digest, check the corresponding option.

- **Subject Tag** – These settings define which subject tag will be used for subscribers that have selected to receive mails with the "normal LISTSERV header, with list identification tag in subject" (for example to be able to better filter their incoming mails from this list). Either select to use the list name as the subject tag or provide an individual subject tag. In addition, you have the option to add a sequence number to the subject tag.

  Subscribers who have chosen other header styles than "normal LISTSERV header, with list identification tag in subject", will receive the normal mail subject without a subject tag. An exception of this rule may be made for subscribers who have selected to use "sendmail-style" mail headers. If you want to **Also add the subject tag** for subscribers with this mail header style, check the corresponding option. Note that this will add the subject tag for all subscribers with this header style, i.e. in contrast to the normal LISTSERV header style, where the subscriber has the choice of having the subject tag included.

The Subscription Options (defaults) tab defines the default subscription options that any new subscriber will initially use. Subscribers may later change their own subscription options to different values, but these are the options that they start with, by default.

- **Default Subscription Style** – Defines the default subscription style of new subscribers. Depending on other list settings (if list archives and/or list digests are enabled), the following subscriptions styles may be available:
  - **Individual Postings (No Digest)** – The subscriber will receive individual mails for each posting to the list.
  - **Plain Text Digest** – The subscriber will receive a regular digest in plain text format, with a compilation of all postings since the last digest.
  - **MIME Digest** – The subscriber will receive a regular digest in MIME format, with a compilation of all postings since the last digest.
  - **HTML Digest** – The subscriber will receive a regular digest in HTML format, with a compilation of all postings since the last digest.
  - **Plain Text Index** – The subscriber will receive a regular mail in plain text format, with an index of the subject lines of all postings since the last index (but not the actual message content of the postings).
  - **HTML Text Index** – The subscriber will receive a regular mail in HTML format, with an index of the subject lines of all postings since the last index (but not the actual message content of the postings).

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- **Default Posting Privileges** – (Only available for lists of the user defined type). Define which posting privileges will be applied to new subscribers (and also non-subscribers) by default:
  - **Normal** – Normal posting privileges (as defined by the other list settings, especially the "Send" keyword).
  - **User may bypass moderation** – Posting is allowed without moderation, even on a moderated list (usually not useful on a non-moderated lists).
  - **All postings of user sent to owner(s) for review** – Posting is allowed but only after moderation/review through the list owners (usually not additionally useful on lists which already are moderated).
  - **User may not post to list** – Postings are not allowed (usually not additionally useful on lists where posting is disallowed anyway).
- **Default Acknowledgement Behavior** – (Only available for lists of discussion-types or user defined type.) Define the acknowledgement behavior that will be applied to new subscribers by default. This determines how (and if) LISTSERV will acknowledge postings by a subscriber:
  - **Do not send any acknowledgement message** – Postings by subscribers will not be acknowledged to the poster, but will simply be distributed to the list.
  - **Acknowledge postings with a short message** – Postings by subscribers will be acknowledged with a short message that is sent back to the posting subscriber.
  - **Acknowledge postings with a full copy of the posted message** – Postings by subscribers will be acknowledged with a full copy of the original posting that is sent back to the posting subscriber.
- **Set subscribers to "no mail" by default** – Check so that any new subscribers will initially have the "no mail" option enabled, i.e. their subscription is suspended and they will not receive any mailings until they set their subscription to active.
- **Exempt subscribers from renewal and probing by default** – Check so that any new subscribers will initially not be included in LISTSERV's mechanisms to probe and/or renew subscriber addresses (this is used to keep the subscriber base up to date and to weed out "dead" addresses).
- **Hide subscriber addresses from "REVIEW" listing by default** – Check so that any new subscribers will initially be "concealed". A concealed subscriber will not appear on the list of list subscribers that can be obtained from LISTSERV using the REVIEW command. There exists a special list setting that defines who is allowed to perform the review command in the first place, i.e. not all users may always execute a review, but even those users who are allowed to do this will not see the concealed subscribers. Note that concealed subscribers of a Hosted LISTSERV List will still be visible from inside of LISTSERV Maestro. Also, some privileged users may be allowed to perform an advanced review command that will list even the concealed subscribers.
- **Default Mail Header Style** – Define which mail header style any new subscribers shall use by default:

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- **LISTSERV-style without subject tag** – Use the normal LISTSERV-style mail header, do not add a special list identification tag to the subject line.
- **LISTSERV-style with subject tag** – Use the normal LISTSERV-style mail header and add a special list identification tag to the subject line.
- **Sendmail-style (preserves original header)** – Use the header from the original posting to the list.
- **Other** – If selected, please select one of the more advanced header styles from the drop-down menu. These styles are for specific purposes and are usually not used with normal LISTSERV lists: Additional headers in mail body, Short headers, Individual "To:" with full headers or Individual "To:" with short headers.

The Change Logs tab defines if and how change log files will be maintained by LISTSERV for this list. Select whether or not a change log will be maintained; and, if so, how often LISTSERV will start a new file.

The Delivery Options tab defines some of the general delivery options for the list. These options are:

- **Suppress "ApprovedBy:" mail header** – Check if you do not want the "ApprovedBy:" header to be added to all mailings that are approved by a moderator or list owner (usually only applies to moderated lists).
- **Remote multi-byte characters** – Check if you want all multi-byte characters to be removed from postings to this list. Note that this can cause trouble on internationally used lists, where languages other than the English language may be used for postings.
- **If spam checking is enabled at LISTSERV** – If the spam-checking feature is enabled at LISTSERV, then specify if the server-wide settings will be respected by this list (and spam checks are performed) or if the server-wide settings will be ignored for this list, meaning that no spam checks are performed for the postings to this list.
- **If DomainKeys-signing of emails is enabled at LISTSERV** – (This option only appears if allowed by the LISTSERV Maestro administrator. This is a setting in the Administration Hub.)

  If the DomainKeys-signing feature is enabled at LISTSERV, specify if the server-wide settings will be respected by this list (and postings are signed) or if the server-wide settings will be ignored for this list, meaning that no signing is performed for the postings to this list.

7.3.6 Posting Restrictions for Moderated Discussion Lists

Posting restrictions set limitations on message attachments, message size, and the number of messages that can be sent to the list. These restrictions affect messages sent to the LISTSERV list when they are submitted as **standard list postings**. A standard list posting is a normal email message sent to the list. Standard list messages can be received in a digest form, and can be viewed in the list archives if archives have been created for the list. Standard list postings can be sent (without tracking) to the list address using a normal email client, or they can be sent using LISTSERV Maestro (with or without tracking) by selecting **Send to an Existing LISTSERV List**, while defining the recipients

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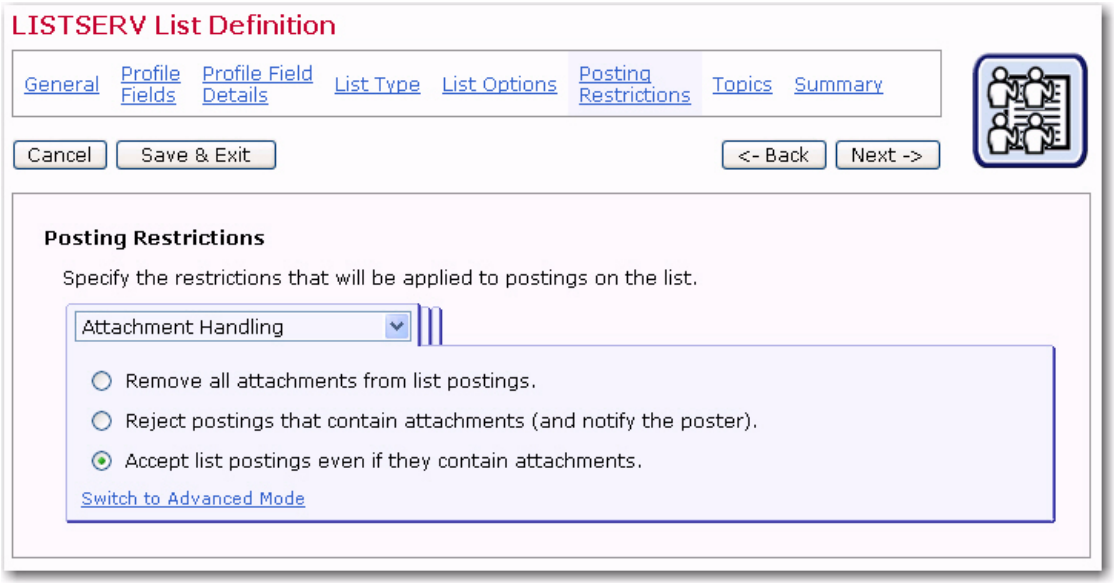
of a mailing, and by specifying **Send job as standard list message** (or by using a target group based on these selections).

The Attachment Handling tab sets the action the list will take when standard messages are receive with attachments. There are three options:

- **Remove all attachments from list postings** – Any postings that include attachments are distributed without the attachments
- **Reject postings that contain attachments (and notify the poster)** – Any postings that include attachments are rejected and not distributed. The poster is then notified.
- **Accept list postings even if they contain attachments** – All postings are distributed, no matter if they contain attachments or not, and all attachments are preserved.

Figure 7-25 The LISTSERV List Wizard – Attachments Handling Tab



To enable the advance mode, click the **Switch to Advanced Mode** link. In advanced mode, these options are also available:

- **Decide based on attachment type** – Any postings that include attachments are inspected. If they contain only attachments of allowed types, they are distributed normally, with all attachments. If they contain (some) attachments of disallowed types, then either those disallowed attachments are removed or the whole posting is rejected (and the poster is notified about this). Check those attachment types (MIME-types) that you want to specify as allowed attachment types. If you need to specify an attachment type as allowed for which there is no checkbox, click on the Edit link and enter the MIME-type (or types) of those additionally allowed attachment types. Then, determine what shall happen if a posting contains any disallowed attachments (remove the disallowed attachments or reject the whole posting).
- **Reject HTML-only messages and remove HTML part from multipart messages** – If checked, then all postings that are only HTML will be rejected,

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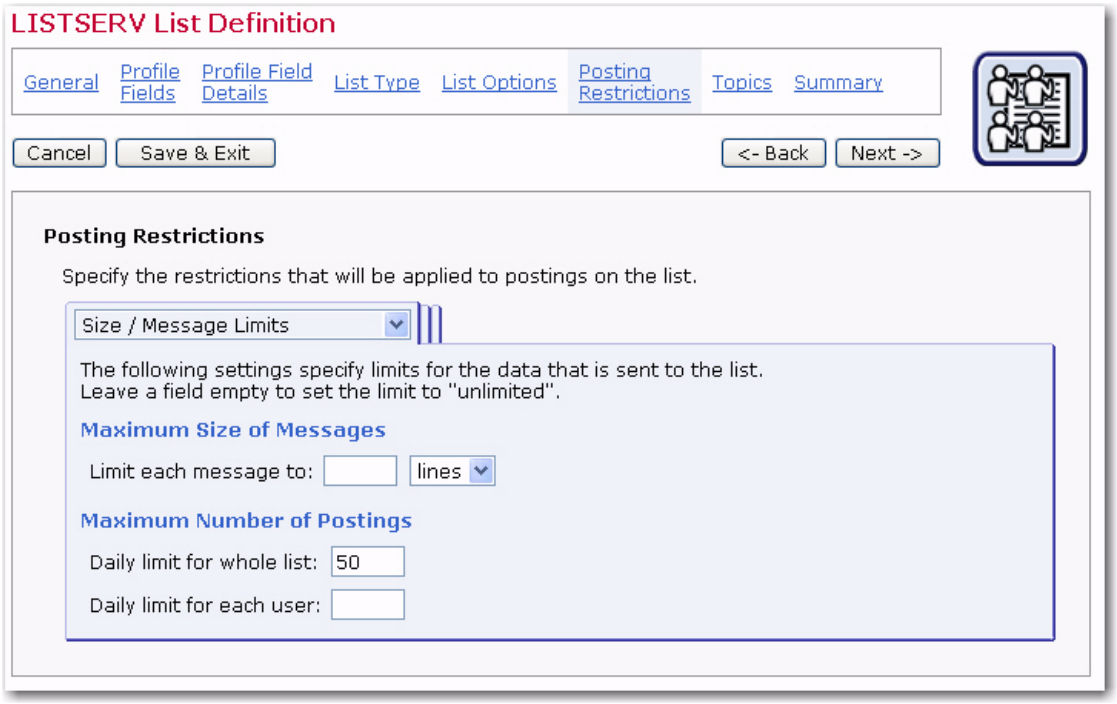
and all multipart messages that contain HTML as one of their parts will be stripped of this HTML part.

- **Remove non-MIME attachments** – If checked, then attachments of this special type will be removed from the posting before it is distributed.
- **Remove Microsoft Exchange formatted attachments** – If checked, then attachments of this special type will be removed from the posting before it is distributed.

The Size / Message Limits tab defines the size or message count limits for the list.

Figure 7-26 The LISTSERV List Wizard – Size/Message Limits Tab



- **Limit each message to** – Specify how "large" any individual message may be at maximum. Either leave the field empty (which means that there is no limit), or specify a positive number as the limit and select what kind of limit this number describes from the drop-down menu.
- **Daily limit for whole list** – Specify how many postings may happen on this list on any given day. Leave empty for no limit or specify the maximum number of postings to the list per day, no matter who is the sender.
- **Daily limit for each user** – Specify how many postings each user can make on any given day. Leave empty for no limit or specify the maximum number of postings to the list per day for each user (sender). This value must be less than or equal to the Maximum postings allowed per day for whole list (see above).

The List Moderation tab defines the moderation settings of a list.

The following options are available on this tab:

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- **Moderator Addresses** – Specify the addresses to which list postings that require moderation are forwarded. Only after a moderator has reviewed and confirmed a list posting will it actually be distributed to the list. Click the **Edit** link to specify the addresses.
- **Moderation Type** – If there are several moderator addresses, then LISTSERV can either send a posting that requires moderation to only one of the moderators (LISTSERV selects which one) who must then approve the posting, or LISTSERV can send a copy of the posting to each moderator, and an approval from any of them will allow the posting to be distributed. Choose which type you want to use for this list.

Note: This choice is disabled unless you have at least two moderator addresses specified.

Click on the **Show advanced distribution handling option** link for more options.

- **Moderator Approval of List Postings** – Select the mechanism by which a moderator must approve a posting that requires moderation:
  - **A simple "OK" is enough** – The moderator can approve postings by sending back an email to LISTSERV with "OK" as the only content, or the moderator can approve the a posting via the LISTSERV Web Interface (if the web interface is installed).
  - **Require the moderator to forward the full message** – The moderate has to forward the whole message to the list in order to approve it (i.e. essential the moderator re-posts the same message, which will then be distributed directly). Note that with this mechanism an approval via the LISTSERV Web Interface is not possible.
- **Unmoderated Senders** – Specify any address that are allowed to post to the list without having to go through moderation (you do not have to specify any moderator addresses here since moderators are always allowed to post without going through moderation themselves.) Click the **Edit** link to specify the addresses.

7.3.6.1 Advanced Options

The Posting Confirmation tab is used to avoid spamming of a list and to verify the origin of a list posting. Using the options on this tab, it is possible to enforce that postings to the list are confirmed by the poster before they are actually being distributed to the list. (Note that postings sent with LISTSERV Maestro never require this additional confirmation and are therefore not affected by the settings made here. These settings apply only for manual postings.)

- **No confirmation required** – Postings are accepted without an additional confirmation (unsecure).
- **Require the moderator(s) to confirm their own messages** – Normal posters do not have to confirm their postings, but moderators must confirm any posting they submit. The idea behind this is the following: On a moderated discussion list, all postings go through moderation anyway and thus any spam can easily be stopped by the moderator. So in theory, the only entry to the list would be spoofing the

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moderator addresses (since their postings do not go through moderation). Therefore, the requirement for moderators to confirm their own postings because anyone spoofing a moderator address would be unable to provide this confirmation so his postings would not be distributed. This is the minimum recommended settings for moderated lists. However, it still has a drawback because if a lot of spam is sent to the list, then even though this spam will not be distributed, it will still end up in the moderator's inbox, making life difficult.

- **Only require confirmation for postings from addresses that are not on the list** – Posters that are subscribed to the list do not have to confirm their postings, any moderators or non-subscribers must confirm any posting they submit. The idea behind this is the following: The weakness of the previous option was that it had the potential of flooding the moderator's inbox with spam (since the only protection against spam would be the moderator himself). Under the assumption that most of this spam would originate from addresses that are not subscribed to the list themselves, this option here offers an improvement: Any list subscribers are still not required to confirm their postings (which will then be sent to the moderator for approval), but all non-subscribers will first have to confirm their postings before they are even forwarded to the moderator, and since this usually not happens for spam, the spam does not even reach the moderator's inbox.
- **All messages require confirmation** – All postings are only distributed to the list once they have been confirmed with LISTSERV's "OK" mechanism (see below for details).

Note About LISTSERV's "OK" mechanism for confirmations: To confirm a posting, LISTSERV sends an email back to the poster requiring the confirmation. The poster must then respond to this confirmation request by either sending an email with "OK" in the body back to LISTSERV, or by clicking on the confirmation link provided in the email (the confirmation link is only provided if the LISTSERV Web Interface is installed on the LISTSERV server).

7.3.7 Topics for Moderated Discussion Lists

Large active LISTSERV lists often use "sub-groups" within the list to give subscribers the opportunity to receive only the posts to the list they are most interested in. Sub-groups are created in LISTSERV by defining the keyword `Topics` in the list header. Lists can have up to 23 topics defined in the header. List subscribers can elect to receive only those messages that fit into the topic(s) they are interested in reading. Similarly, messages can be posted only to specific topics. For example, a large list could have the general subject of XYZ Software. Topics could be defined by the types of users of the software, the type software purchased, or tips and tricks for using the software. For more information on Topics, see the LISTSERV List Owner's Manual.

To define a new topic, simply click the **New Topic** link and fill out the empty topic row that appears. In the list, topics are displayed either in the display mode or in the editable mode. In the display mode, each topic has an associated **Edit** link to set it into the editable mode. In the editable mode, the topic name can be changed and the following actions are available: **Reset** (forget changes and reset the topic to the state it had when the editable mode was last entered for it), **Up** (move the topic up one step in the topics

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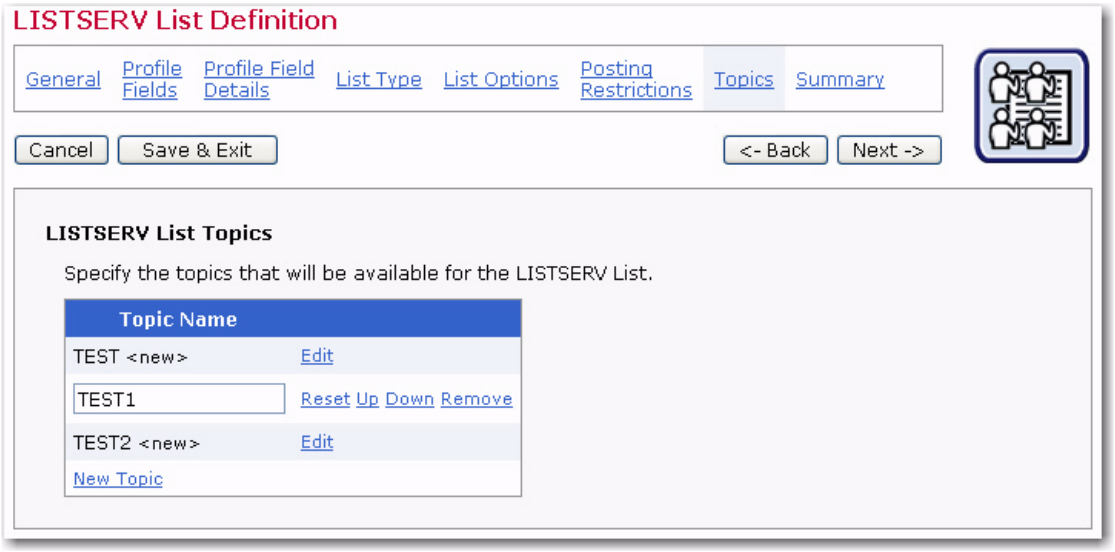
list), **Down** (move the topic down ones step in the topics list), and **Remove** (remove the topic).

Figure 7-27 The LISTSERV List Wizard – List Topics Screen



When the topic settings of a populated list change, all current subscribers' topic selections will need to be adjusted. This will occur when the LISTSERV list wizard is completed. The adjustment may take some time and a progress bar will be displayed as the system works.

Tip: Changing topics on a list where subscribers are currently very active needs to be carefully considered so a disruption does not occur. A better strategy would be to temporarily close the hosted LISTSERV list for maintenance (see Summary page), adjust the topics, and then re-open the list.

When adding new topics to a list that already has subscribers, an additional option, **Existing subscribers will have the new topics selected automatically**, will appear. Select this option to automatically add the new topics to all existing subscriptions. If this option is not selected, then the existing subscribers will not be subscribed to the new topics. Subscribers will be able to change their settings to add or drop the new topics if the dataset and list subscriber pages are enabled. This option applies to all topics that are added on this page during the same List wizard session. To add several topics, some of which the current subscribers are automatically subscribed to and some not, the List wizard has to be engaged twice, once with the option selected (for those topics to be added to all subscriptions) and once with the option not selected (for those topics that will not be added to all subscriptions).

Once you're finished specifying the topics available for the list, click **[Next ->]** to continue.

7.3.8 Summary for Moderated Discussion Lists

The Summary screen displays all the selections made for the LISTSERV list during its creation.

Use the **[<- Back]** button or any of the links in the top bar to revisit any page in the wizard to make changes.

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Before the list can be used, its access level needs to be set using the **Public List Access** drop-down menu. The list can be set to be accessible to anyone with access to the dataset wishing to subscribe, to be accessible to only list subscribers, or to have no public access. If a list is accessible to everyone, it will appear on the membership area Web page to anyone visiting that page. If the list is accessible only to members, the list will not appear in the membership area to everyone, it will only appear only to those who are subscribed to the list. This allows existing subscribers to manage their own settings, but new subscribers must be added by the Data Administrator or designated LISTSERV Maestro team members. Lists with no public access do not appear in the membership area to anyone.

Click **[Finish]** to accept the list as it is summarized and return to the Recipient Dataset Details screen.

7.4 Creating LISTSERV User Defined Lists

Creating user defined lists is an advanced feature that requires knowledge of LISTSERV list headers and list header keywords; therefore, this list type is most suited for those experienced LISTSERV users. The behavior of this list depends entirely on the value that is entered for the Send keyword. This list type is a perfect for those occasions when an announcement, moderated, or unmoderated list doesn't meet your needs.

7.4.1 General Settings for User Defined Lists

The General screen defines the general information pertaining to the list.

- **Name** – The name of the mailing list. Subscribers will see this name of the list on the web form when they subscribe. Data administrators will see the list name in the dataset tree and if they create a target group from a classic LISTSERV list (see Section 14 Classic LISTSERV List Target Groups for details). LISTSERV Maestro users will see the list name if they are allowed to define recipients for a job using by sending to an existing LISTSERV list.
- **Internal Description** – The internal description is only seen by users working within the Maestro User Interface.
- **Public Description** – The public description of the list appears on the subscription web form. If subscribers are permitted to select the lists they want to join and can view and change their subscription settings, then having accurate descriptions will help them accomplish those tasks.

Once you've finished specifying the name and description of the list, click **[Next ->]** to continue.

7.4.2 Profile Fields for User Defined Lists

The Profile Fields screen lists all of the fields in the dataset. Other fields can be added to the list. Any added list fields will not be shared with the other lists in the dataset. To add a new field, click the **Add Field** link.

For each new field, enter the following information:

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- **Name** – The name of the field as it will be used internally by the system for mail merging and querying. Field names can only use upper and lower case letters “A-Z” and “a-z”, the numbers “0 – 9” and the underscore “_”. Spaces and other special characters are not allowed.
- **Display Name** – The label that identifies the field on the web form. The display name will be seen by anyone accessing the list’s public subscription page on the Web. All alphanumeric characters are permitted, as well as spaces and special characters allowed by the dataset encoding scheme.
- **Data Type** – Choose the type of data to be entered in the field from the drop-down menu. Three different classifications of data are available (selection lists are not available for hosted LISTSERV lists):
  - **Text** – Text fields can accept any type of text, including dates in specific formats such as dd/mm/yyy or mm.dd.yyyy.
  - **Number** – Number fields accept any whole integers.
  - **Boolean** – Boolean fields are based on two states – true or false.
- **Input Type** – Decide whether the data is mandatory for subscribers to enter into the web form or optional. Optional fields can be designated as hidden or read-only if the subscribers are not allowed to enter or change the data in those fields. Boolean fields cannot be optional due to the nature of the data type. Boolean fields can be visible or hidden.

After list fields are created, they can be edited, removed, moved up, or moved down by using the corresponding links on the right side of the table. Fields belonging to the dataset cannot be moved or edited from this screen.

Once you’re finished adding fields to the list, click **[Next ->]** to continue.

7.4.3 Profile Field Details for User Defined Lists

The Profile Field Details screen lets you specify which LISTSERV fields are used to assemble the “Full Name” of the list subscriber.

Hosted LISTSERV lists require a **Name Field** to be defined. If a single name field exists for each subscriber, move that field from the **Profile Fields** box to the **Name Fields** box. If two (or more) fields are to be used to make up a full name, move each of the fields from the **Profile Fields** box to the **Name Fields** box. The second field is added after the first field, leaving a space in between. This makes it easy to combine a first name field with a last name field to produce a **Full Name** field, for example. Use the **Move Up** and **Move Down** links to change the order of the name fields. The fields are not required to be mandatory; although, the existence of at least one name field is required, but it does not have to be filled in by every subscriber.

Once you’re finished specifying the fields to use for the name, click **[Next ->]** to continue.

7.4.4 List Type for User Defined Lists

The List Type screen lets you select the type of list you want to create. Select the **User Defined List** option. This type of list is an advanced feature that requires knowledge of

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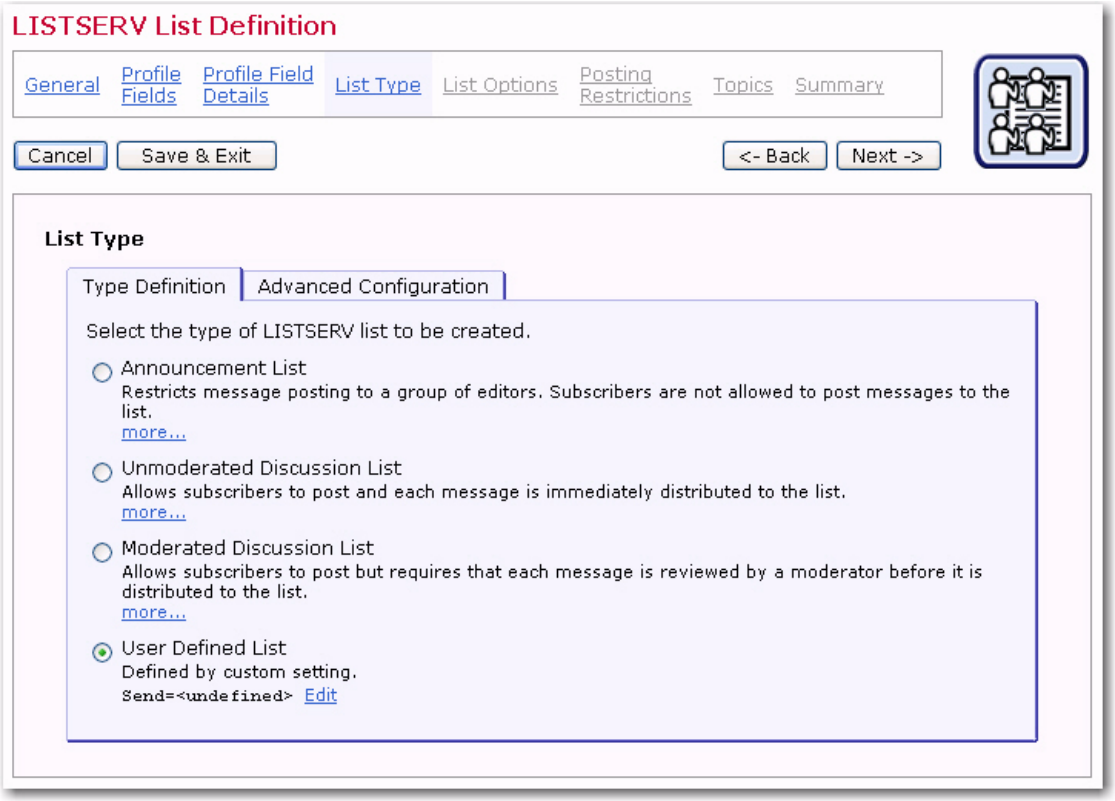
LISTSERV list headers and list header keywords; therefore, it is only suited for experienced LISTSERV users.

Figure 7-28 The LISTSERV List Wizard - List Type Screen



The behavior of this list depends on the value that you supply for the Send keyword. Click on the **Edit** link to define it. If you leave the value blank, then the LISTSERV default is applied.

Once you've selected the type of list you want to create, click **[Next ->]** to continue.

Note: LISTSERV Maestro will not perform any verification of the sender address of the mail job. You must make sure that the address you specify in the sender information will actually be accepted by your list (i.e. that this address is allowed to post to the list). If you happen to specify a sender address that is not allowed to post to the list, then the job will still be delivered successfully in LISTSERV Maestro (i.e. your posting is sent to the list successfully), but then your list posting will be rejected by the list and returned to the sender address. The sender address you need to use in the mail job depends on the user defined settings of the list.

7.4.4.1 Advanced Configuration

Using the Advanced Configuration tab, you can view and edit the actual LISTERV list header keywords that define the behavior of the Hosted LISTSERV List.

Important: This is an advanced feature that requires knowledge of and experience with LISTSERV list headers and list header keywords; therefore, it should only be used by experienced LISTSERV list administrators. For most standard list

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purposes, there is no need to edit the list header keywords on this tab directly, but you can instead use the controls that are provided on the following wizard pages (List Options, Posting Restrictions, and Topics).

This tab shows a tree with all available list header keywords, separated into seven groups (see the list of groups and keywords below). Click on the "+" icon to open a group or the "-" icon to close a group.

The keywords themselves are displayed in different styles, depending on their current configuration:

- A blue circle icon and black text: This keywords has been configured via one of the special controls on the following wizard pages (List Options, Posting Restrictions, or Topics) and will appear in the list header with the displayed value.

- A green circle icon and bold black text: This keyword has been configured with a manually supplied value via the Edit link here on the Advanced Configuration tab. It will appear in the list header with the displayed value (or will be omitted from the list header, if applicable).

- A grey circle icon and grey text: This keyword is currently not configured and will not appear in the list header.

- A grey circle icon and bold red text: This keyword is currently not configured but must be configured before the wizard can be finished.

- A red circle icon and bold black text: This keyword has been configured with a manually supplied value via the Edit link here on the Advanced Configuration tab and was included in the list header with the displayed value (or was omitted from the list header, if applicable). However, when the list header was transferred to LISTSERV, LISTSERV reported an error in the value of this keyword. To see the original LISTSERV error message for this keyword, select the keyword in the tree and click the Edit link.

To view the actual textual list header that is the result of the keyword input here in the keyword tree and in the user interface controls on the following wizard pages, and which thus defines this Hosted LISTSERV List, click on the **View Configuration as Plaintext** link at the bottom of the tree.

To edit the value of a given keyword, select the keyword in the tree and click on the **Edit** link at the top right corner of the tree. Depending on the selected keyword, there are three possible edit situations:

- **Editing via wizard controls only** – For keywords of this type, all possible values that the keywords can have can be configured via the user interface controls that the wizard offers on the following wizard pages. Therefore, there is no need to be able to input a keyword value manually. If you click the Edit link for such a keyword, then a message box will inform you that instead of editing the keyword value manually, please use the provided user interface controls on the specified wizard page.
- **Editing via wizard controls or manual input** – For keywords of this type, user interface controls exist on the following wizard pages. However, those controls do not allow you to input the full range of possible values for this keyword (but only the most common values). You therefore have the choice of either using the user

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interface controls in the wizard or to supply a specific value for the keyword manually. If you choose to supply a value manually here in the keywords tree, then the corresponding user interface control on one of the following wizard pages will no longer be available. Instead a message will be displayed that informs you, that a custom value has been supplied for the corresponding keyword in the keywords tree. To make the user interface controls available again, go back to the keywords tree and remove the manually supplied value. If you click the Edit link for such a keyword, an input dialog will allow you to choose between using the user interface control in the wizard (this also includes an information about where to find the corresponding user interface control) or to supply your own customized value.

- **Editing via manual input only** – For keywords of this type, there exists no dedicated user interface control on any of the following wizard pages. Therefore, the only way of changing these keywords is by supplying a customized value for the keyword manually, here in the keywords tree. Keywords of this type are keywords for very specific and advanced LISTSERV list features, which are seldom used. If you click the Edit link for such a keyword, an input dialog will allow you to supply the value for the keyword.

The following list header keywords are available in the keyword tree (note that some obsolete keywords are not supported):

- **Access Control Keywords**
  - Attachments
  - Filter
  - Review
  - Send
- **Distribution Keywords**
  - Ack
  - Daily-Threshold
  - Digest
  - Mail-Via
  - Newsgroups
  - Prime
  - Reply-To
  - Sender
  - Sub-lists
  - Topics
- **Error Handling Keywords**
  - Auto-Delete
  - Errors-To
  - Loopcheck
- **Maintenance / Moderation Keywords**
  - Configuration-Owner

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- Editor
- Editor-Header
- Moderator
- New-List
- Notebook
- Notify
- Owner
- Peers
- Renewal
- Sizelim
- Subject-Tag
- X-Tags

- **Security Keywords**
  - Change-Log
  - Confidential
  - Exit
  - Local
  - Service
  - Validate
- **Subscription Keywords**
  - Confirm-Delay
  - Default-Options
  - Default-Topics
- **Other Keywords**
  - Categories
  - Language
  - Limits
  - Mail-Merge
  - Misc-Options
  - Translate

7.4.5 List Options for User Defined Lists

The List Options screen is divided into several tabs – General Options, Reply Behavior, Bounce Handling, List Archive, and several with advanced features – that can be accessed by clicking the drop-down menu. The List Archive is optional and will not appear unless archives have been set up in the HUB. For more information on archives, see the LISTSERV Maestro Administrator's Manual.

On the General tab, all list types require that a list administrator called a "list owner" be set. Enter at least one email address that will become the administrator (owner) of the

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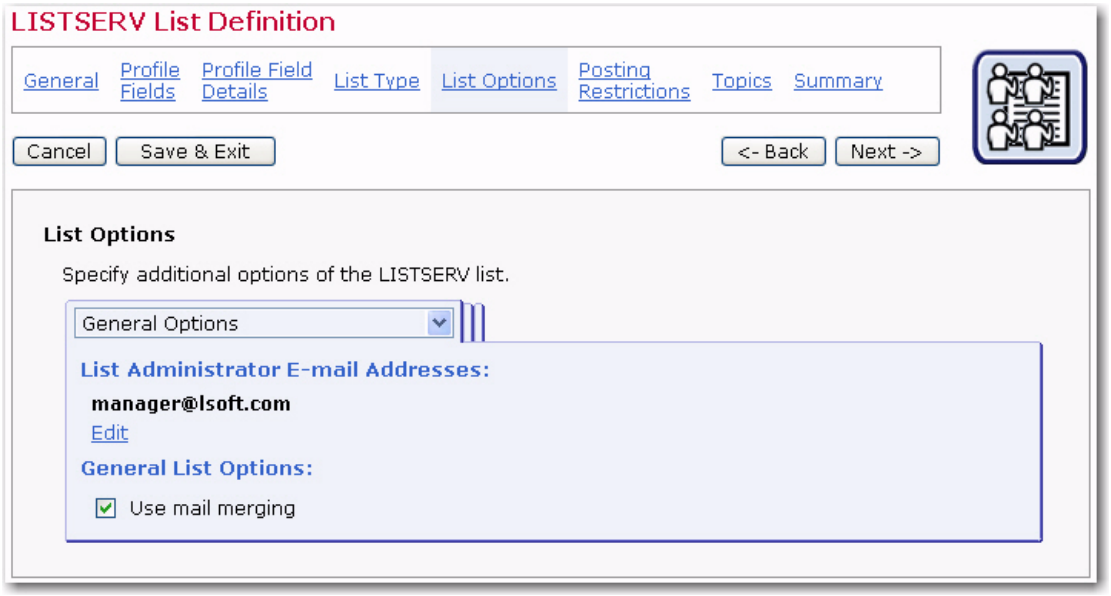
LISTSERV list. Click the **Edit** link to add a new address or edit the existing ones in the pop-up dialog box. Entries must be valid Internet email addresses.

Figure 7-29 The LISTSERV List Wizard - General Options Tab



Click **[OK]** to accept the administrator address and return to the General Options tab.

The General Options tab also contains the following option:

- **Use mail merging** – Select this option to allow the system to insert subscriber specific content into the message based on the data associated with each subscriber. Subscribers will each receive a customized copy of the message with their own email address and name on the `To:` line. Other data fields can be merged into the message as well to further personalize the email.

The Reply Behavior tab determines where any replies from subscribers are sent. There are four options available:

- **Sender** – Replies are directed to the sender of the email message. The sender address is the address based on the “From:” field of the posting.
- **List** – Replies are directed back to the list. If subscribers are not well informed that, when they hit the “reply” key in their mail client, their message goes to everyone, then they might post private or off topic messages back to the list by mistake.
- **Both Sender & List** – Replies are directed to both the original sender and the list.
- **List Administrator** – Replies are directed to the first administrator address specified on the General Options tab.
- **Separate address** – Replies are directed to the address entered in this text box.

Then, using the **Apply the Settings** drop-down menu, select when the settings are to be applied.

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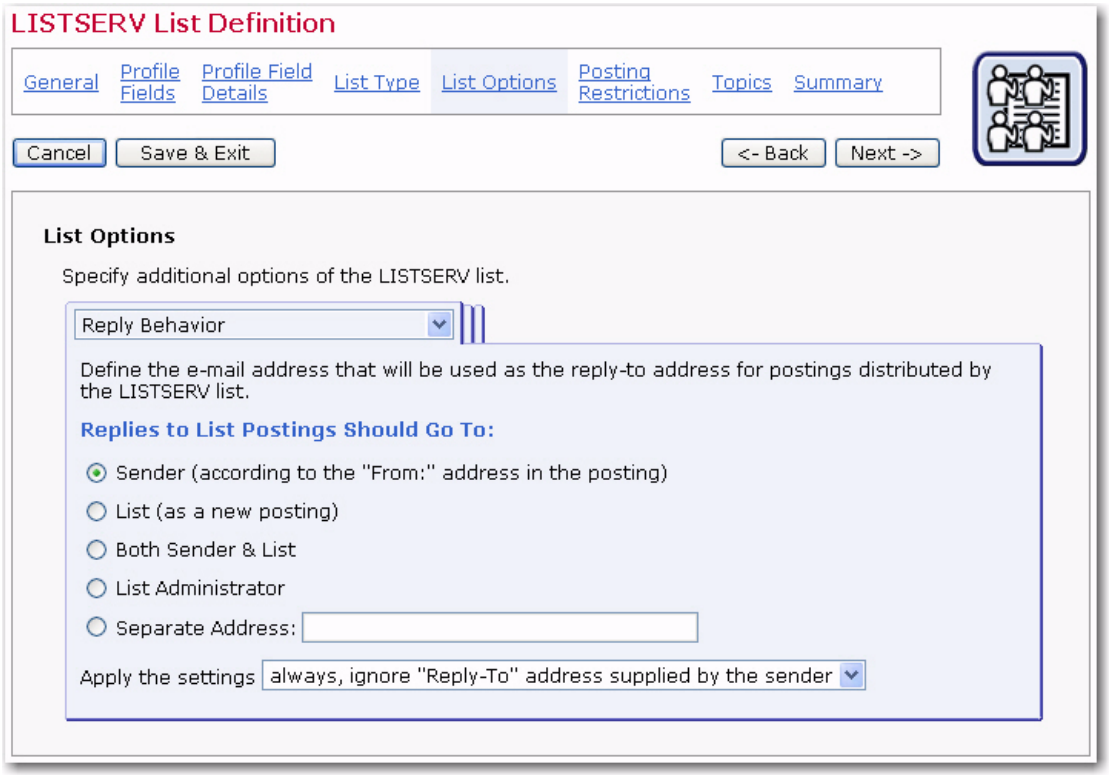
Figure 7-30 The List Wizard for LISTSERV List - Reply Behavior Tab



The Bounce Handling tab determines what happens to the subscriber addresses when messages sent to them bounce (are rejected from the email server and returned to the sender undeliverable). LISTSERV lists can handle bounces by removing the bouncing addresses automatically or by collecting bounces for manual action. Manually processed bounces are sent to the list administrator's address. Select one of the three available the bounce processing options:

- **Remove subscribers immediately after first bounce** – The address that bounced the mail will be removed from the list after the first bounce. Subscribers will have to be re-added to the list to receive any additional mail.
- **Remove subscribers after X bounces within X days** – Enter the number of bounces that are permitted in the first text box, and the number of days they can occur over in the second box. This setting is more flexible than the first setting. For example, if the reason for the bounce is temporary, such as a full mailbox, then new messages can still be sent. Subscribers will not be removed from the list unless the messages continue to bounce over the given time period, or bounce the number of times specified. Care must be taken to choose realistic numbers, in accordance with the expected list traffic
- **Only collect bounces for manual processing** – Bounce addresses will be sent to a specific address where they can be reviewed and action can be taken manually. Subscriber addresses that generate bounces will not be removed from the list automatically, regardless of the number of bounces.

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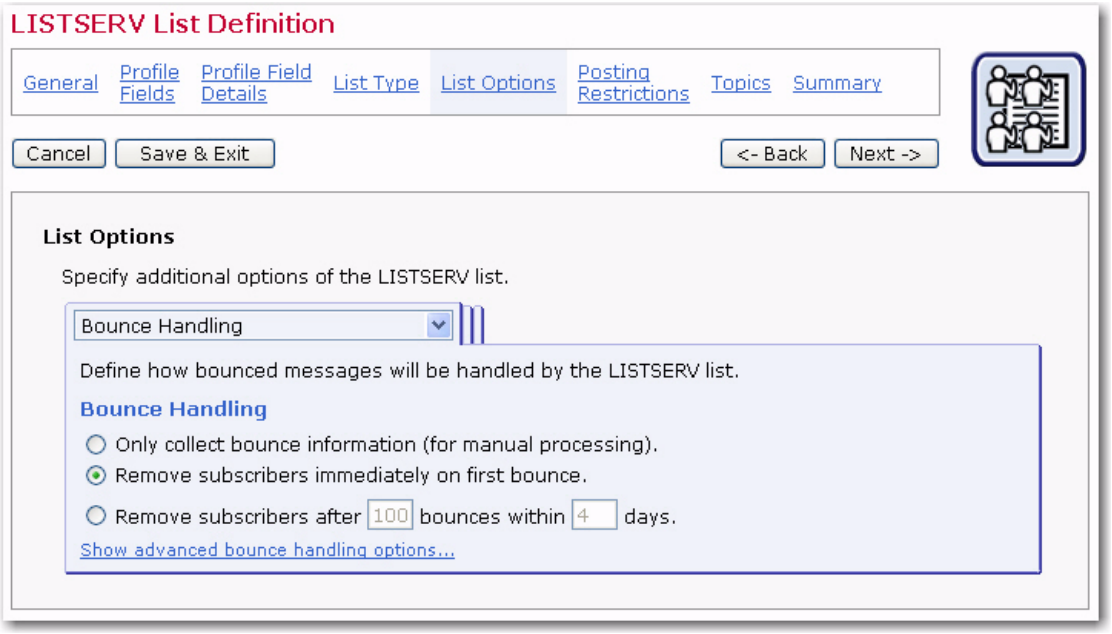
Figure 7-31 The LISTSERV List Wizard - Bounce Handling Tab



For additional bounce handling options, click on the **Show advanced bounce handling options** link.

If you have selected one of the automatic bounce handling options above, then you can also specify whether or not this should actually result in an automatic removal of addresses from the list (which is the default) or if the bounce analysis should only be forwarded (via e-mail).

If you select automatic removal, then a notification about all removed addresses will be sent to the specified group of people, and you also have the choice if you also want to be notified about any temporary bounces and bounces for addresses that are not actually subscribed to the list.

If you select no automatic removal, then you need to specify the group of people to which the bounce analysis will be forwarded to by clicking the **Add** link. To change this information, click the **Edit** link.

Furthermore, you can define the **Passive Probing** behavior of the list.

To again hide the advanced bounce handling options, click on the **Hide advanced bounce handling options** link. This, however, is only possible if the advanced options are set to their default values, i.e. if you have non-default advanced options, then you can also not hide the advanced options.

The List Archives tab defines whether or not postings to the list will be archived. If an archive is to be kept, then define how often a new archive file is to be created by the system and who is allowed to access and view the archive.

For the latter two options, there are two modes of specifying the necessary details: In **Standard Mode**, only the most common settings are available. In **Advanced Mode**, all possible options are available. Toggle between the two modes with the **Switch to Standard Mode** and **Switch to Advanced Mode** links at the bottom of the tab.

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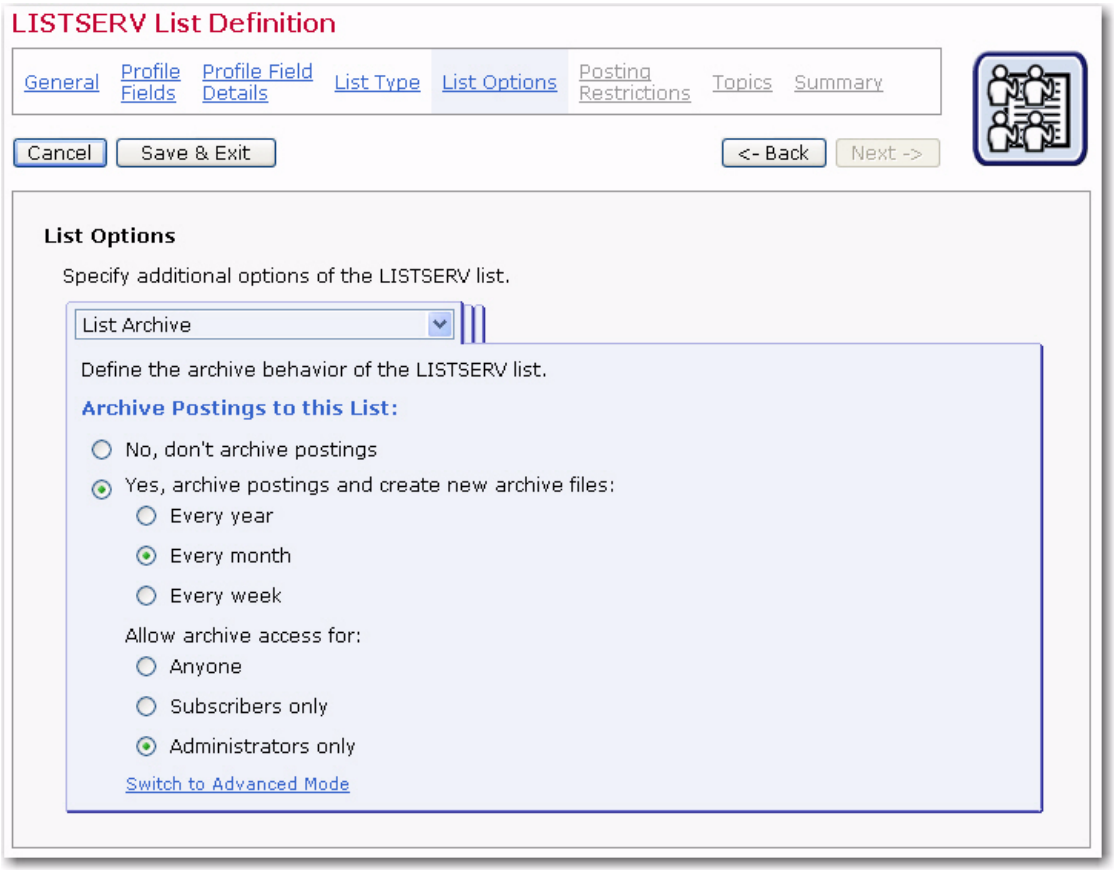
Note: This tab is only available if the option of creating LISTSERV list archives has been enabled for your LISTSERV server by the LISTSERV Maestro administrator (this is a setting in the Administration Hub).

Once you're finished defining the archive behavior, click **[Next ->]** to continue.

Figure 7-32 The LISTSERV List Wizard – List Archive Tab



7.4.5.1 Advanced Options

The Administrative Messages tab defines the settings for the administrative messages that LISTSERV sends to the list subscribers in various situations:

- **Use texts from English default template "maestro.mailtpl"** – The text for the administrative messages are taken from the default template (in English).
- **Use texts from custom template** – The text for the administrative messages are taken from the specified custom template. A custom template can be used for customization and translation of the text.

The Subscription Notifications tab defines if LISTSERV will send a notification message when a subscriber joins a list (or more precisely, confirms subscription to the list). If you select to receive notification messages, then you can also specify an address that the notifications will be sent to. If you not specify an address, then the notifications will be sent to the list administrator.

The List Visibility tab defines who will be allowed to see the list when using LISTSERV's features of asking for available lists.

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The Subscription Options tab defines additional options that subscribers of the list can choose from:

- **Digest Behavior** – Check if you want to give subscribers the option to enable the "Digest" mode for their subscription. With the digest mode enabled, they will no longer receive the postings to the list as individual mails; instead, everything is compiled into a single digest email. If you enable this option, then you must also specify the rules that are used to compile and send out the digest email to all subscribers that have enabled the digest mode.

  Also, if your list is configured to use a bottom banner, then this banner will, by default, not be included at the bottom of each individual message in the digest (to avoid a repetition of this banner throughout the digest). Instead, the banner will only appear once, after the digest's table of content. To avoid this behavior and include the bottom banner with each individual message in the digest, check the corresponding option.
- **Subject Tag** – These settings define which subject tag will be used for subscribers that have selected to receive mails with the "normal LISTSERV header, with list identification tag in subject" (for example to be able to better filter their incoming mails from this list). Either select to use the list name as the subject tag or provide an individual subject tag. In addition, you have the option to add a sequence number to the subject tag.

  Subscribers who have chosen other header styles than "normal LISTSERV header, with list identification tag in subject", will receive the normal mail subject without a subject tag. An exception of this rule may be made for subscribers who have selected to use "sendmail-style" mail headers. If you want to **Also add the subject tag** for subscribers with this mail header style, check the corresponding option. Note that this will add the subject tag for all subscribers with this header style, i.e. in contrast to the normal LISTSERV header style, where the subscriber has the choice of having the subject tag included.

The Subscription Options (Defaults) tab defines the default subscription options that any new subscriber will initially use. Subscribers may later change their own subscription options to different values, but these are the options that they start with, by default.

- **Default Subscription Style** – Defines the default subscription style of new subscribers. Depending on other list settings (if list archives and/or list digests are enabled), the following subscriptions styles may be available:
  - **Individual Postings (No Digest)** – The subscriber will receive individual mails for each posting to the list.
  - **Plain Text Digest** – The subscriber will receive a regular digest in plain text format, with a compilation of all postings since the last digest.
  - **MIME Digest** – The subscriber will receive a regular digest in MIME format, with a compilation of all postings since the last digest.
  - **HTML Digest** – The subscriber will receive a regular digest in HTML format, with a compilation of all postings since the last digest.

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  - **Plain Text Index** – The subscriber will receive a regular mail in plain text format, with an index of the subject lines of all postings since the last index (but not the actual message content of the postings).
  - **HTML Text Index** – The subscriber will receive a regular mail in HTML format, with an index of the subject lines of all postings since the last index (but not the actual message content of the postings).
- **Default Posting Privileges** – (Only available for lists of the user defined type). Define which posting privileges will be applied to new subscribers (and also non-subscribers) by default:
  - **Normal** – Normal posting privileges (as defined by the other list settings, especially the "Send" keyword).
  - **User may bypass moderation** – Posting is allowed without moderation, even on a moderated list (usually not useful on a non-moderated lists).
  - **All postings of user sent to owner(s) for review** – Posting is allowed but only after moderation/review through the list owners (usually not additionally useful on lists which already are moderated).
  - **User may not post to list** – Postings are not allowed (usually not additionally useful on lists where posting is disallowed anyway).
- **Default Acknowledgement Behavior** – (Only available for lists of discussion-types or user defined type.) Define the acknowledgement behavior that will be applied to new subscribers by default. This determines how (and if) LISTSERV will acknowledge postings by a subscriber:
  - **Do not send any acknowledgement message** – Postings by subscribers will not be acknowledged to the poster, but will simply be distributed to the list.
  - **Acknowledge postings with a short message** – Postings by subscribers will be acknowledged with a short message that is sent back to the posting subscriber.
  - **Acknowledge postings with a full copy of the posted message** – Postings by subscribers will be acknowledged with a full copy of the original posting that is sent back to the posting subscriber.
- **Set subscribers to "no mail" by default** – Check so that any new subscribers will initially have the "no mail" option enabled, i.e. their subscription is suspended and they will not receive any mailings until they set their subscription to active.
- **Exempt subscribers from renewal and probing by default** – Check so that any new subscribers will initially not be included in LISTSERV's mechanisms to probe and/or renew subscriber addresses (this is used to keep the subscriber base up to date and to weed out "dead" addresses).
- **Hide subscriber addresses from "REVIEW" listing by default** – Check so that any new subscribers will initially be "concealed". A concealed subscriber will not appear on the list of list subscribers that can be obtained from LISTSERV using the REVIEW command. There exists a special list setting that defines who is allowed to perform the review command in the first place, i.e. not all users may always execute a review, but even those users who are allowed to do this will not see the concealed

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subscribers. Note that concealed subscribers of a Hosted LISTSERV List will still be visible from inside of LISTSERV Maestro. Also, some privileged users may be allowed to perform an advanced review command that will list even the concealed subscribers.

- **Default Mail Header Style** – Define which mail header style any new subscribers shall use by default:
  - **LISTSERV-style without subject tag** – Use the normal LISTSERV-style mail header, do not add a special list identification tag to the subject line.
  - **LISTSERV-style with subject tag** – Use the normal LISTSERV-style mail header and add a special list identification tag to the subject line.
  - **Sendmail-style (preserves original header)** – Use the header from the original posting to the list.
  - **Other** – If selected, please select one of the more advanced header styles from the drop-down menu. These styles are for specific purposes and are usually not used with normal LISTSERV lists: Additional headers in mail body, Short headers, Individual "To:" with full headers or Individual "To:" with short headers.

The Change Logs tab defines if and how change log files will be maintained by LISTSERV for this list. Select whether or not a change log will be maintained; and, if so, how often LISTSERV will start a new file.

The Delivery Options tab defines some of the general delivery options for the list. These options are:

- **Suppress "ApprovedBy:" mail header** – Check if you do not want the "ApprovedBy:" header to be added to all mailings that are approved by a moderator or list owner (usually only applies to moderated lists).
- **Remote multi-byte characters** – Check if you want all multi-byte characters to be removed from postings to this list. Note that this can cause trouble on internationally used lists, where languages other than the English language may be used for postings.
- **If spam checking is enabled at LISTSERV** – If the spam-checking feature is enabled at LISTSERV, then specify if the server-wide settings will be respected by this list (and spam checks are performed) or if the server-wide settings will be ignored for this list, meaning that no spam checks are performed for the postings to this list.
- **If DomainKeys-signing of emails is enabled at LISTSERV** – (This option only appears if allowed by the LISTSERV Maestro administrator. This is a setting in the Administration Hub.)

  If the DomainKeys-signing feature is enabled at LISTSERV, specify if the server-wide settings will be respected by this list (and postings are signed) or if the server-wide settings will be ignored for this list, meaning that no signing is performed for the postings to this list.

7.4.6 Posting Restrictions for User Defined Lists

Posting restrictions set limitations on message attachments, message size, and the number of messages that can be sent to the list. These restrictions affect messages sent

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to the LISTSERV list when they are submitted as **standard list postings**. A standard list posting is a normal email message sent to the list. Standard list messages can be received in a digest form, and can be viewed in the list archives if archives have been created for the list. Standard list postings can be sent (without tracking) to the list address using a normal email client, or they can be sent using LISTSERV Maestro (with or without tracking) by selecting **Send to an Existing LISTSERV List**, while defining the recipients of a mailing, and by specifying **Send job as standard list message** (or by using a target group based on these selections).

The Editors tab lets you define any addresses that are used as editors for the list. Click the **Edit** link to define the addresses that supposed to be editors.

Figure 7-33 The LISTSERV List Wizard – Editors Tab

The Attachment Handling tab sets the action the list will take when standard messages are receive with attachments. There are three options:

- **Remove all attachments from list postings** – Any postings that include attachments are distributed without the attachments
- **Reject postings that contain attachments (and notify the poster)** – Any postings that include attachments are rejected and not distributed. The poster is then notified.
- **Accept list postings even if they contain attachments** – All postings are distributed, no matter if they contain attachments or not, and all attachments are preserved.

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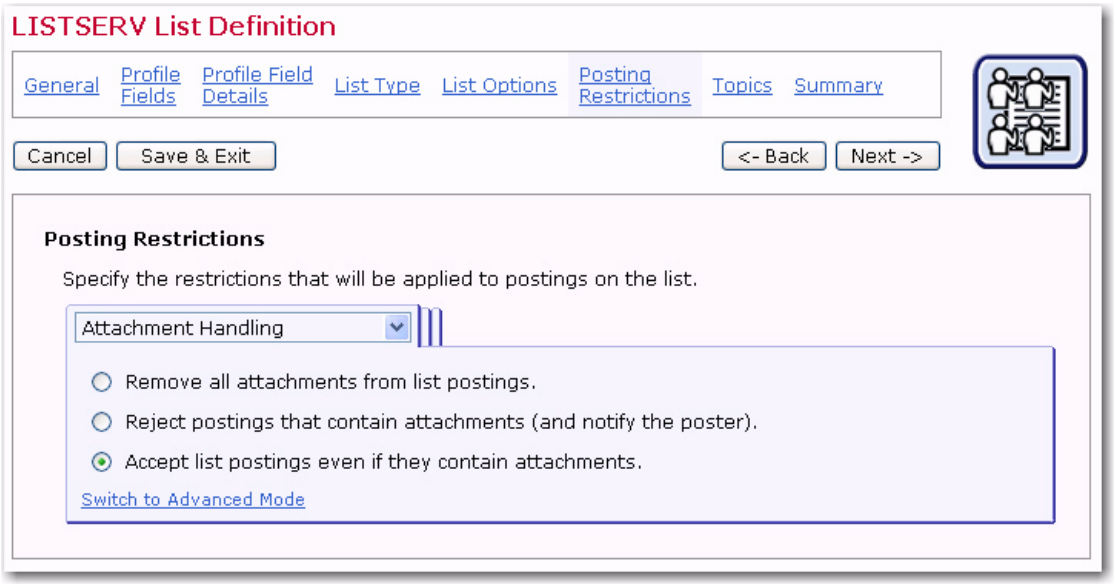
Figure 7-34 The LISTSERV List Wizard – Attachments Handling Tab



To enable the advance mode, click the **Switch to Advanced Mode** link. In advanced mode, these options are also available:

- **Decide based on attachment type** – Any postings that include attachments are inspected. If they contain only attachments of allowed types, they are distributed normally, with all attachments. If they contain (some) attachments of disallowed types, then either those disallowed attachments are removed or the whole posting is rejected (and the poster is notified about this). Check those attachment types (MIME-types) that you want to specify as allowed attachment types. If you need to specify an attachment type as allowed for which there is no checkbox, click on the Edit link and enter the MIME-type (or types) of those additionally allowed attachment types. Then, determine what shall happen if a posting contains any disallowed attachments (remove the disallowed attachments or reject the whole posting).
- **Reject HTML-only messages and remove HTML part from multipart messages** – If checked, then all postings that are only HTML will be rejected, and all multipart messages that contain HTML as one of their parts will be stripped of this HTML part.
- **Remove non-MIME attachments** – If checked, then attachments of this special type will be removed from the posting before it is distributed.
- **Remove Microsoft Exchange formatted attachments** – If checked, then attachments of this special type will be removed from the posting before it is distributed.

The Size / Message Limits tab defines the size or message count limits for the list.

- **Limit each message to** – Specify how "large" any individual message may be at maximum. Either leave the field empty (which means that there is no limit), or specify a positive number as the limit and select what kind of limit this number describes from the drop-down menu.

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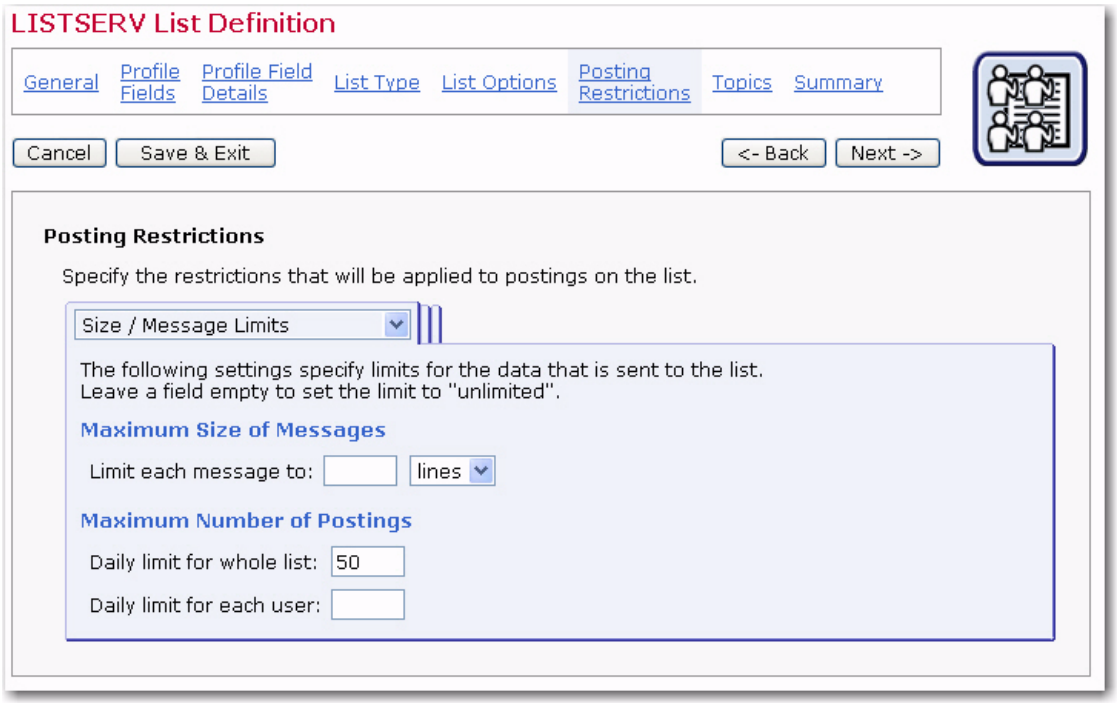
- **Daily limit for whole list** – Specify how many postings may happen on this list on any given day. Leave empty for no limit or specify the maximum number of postings to the list per day, no matter who is the sender.
- **Daily limit for each user** – Specify how many postings each user can make on any given day. Leave empty for no limit or specify the maximum number of postings to the list per day for each user (sender). This value must be less than or equal to the Maximum postings allowed per day for whole list (see above).

Figure 7-35 The LISTSERV List Wizard – Size/Message Limits Tab



The List Moderation tab defines the moderation settings of a list. The following options are available on this tab:

- **Moderator Addresses** – Specify the addresses to which list postings that require moderation are forwarded. Only after a moderator has reviewed and confirmed a list posting will it actually be distributed to the list. Click the **Edit** link to specify the addresses.
- **Moderation Type** – If there are several moderator addresses, then LISTSERV can either send a posting that requires moderation to only one of the moderators (LISTSERV selects which one) who must then approve the posting, or LISTSERV can send a copy of the posting to each moderator, and an approval from any of them will allow the posting to be distributed. Choose which type you want to use for this list.

Note: This choice is disabled unless you have at least two moderator addresses specified.

- **Moderator Approval of List Postings** – Select the mechanism by which a moderator must approve a posting that requires moderation:

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- **A simple "OK" is enough** – The moderator can approve postings by sending back an email to LISTSERV with "OK" as the only content, or the moderator can approve the a posting via the LISTSERV Web Interface (if the web interface is installed).
- **Require the moderator to forward the full message** – The moderate has to forward the whole message to the list in order to approve it (i.e. essential the moderator re-posts the same message, which will then be distributed directly). Note that with this mechanism an approval via the LISTSERV Web Interface is not possible.

- **Unmoderated Senders** – Specify any address that are allowed to post to the list without having to go through moderation (you do not have to specify any moderator addresses here since moderators are always allowed to post without going through moderation themselves.) Click the **Edit** link to specify the addresses.

7.4.6.1 Advanced Options

The Posting Confirmation tab is used to avoid spamming of a list and to verify the origin of a list posting. Using the options on this tab, it is possible to enforce that postings to the list are confirmed by the poster before they are actually being distributed to the list. (Note that postings sent with LISTSERV Maestro never require this additional confirmation and are therefore not affected by the settings made here. These settings apply only for manual postings.)

- **No confirmation required** – Postings are accepted without an additional confirmation (unsecure).
- **All messages require confirmation** – All postings are only distributed to the list once they have been confirmed with LISTSERV's "OK" mechanism (see below for details).

Note About LISTSERV's "OK" mechanism for confirmations: To confirm a posting, LISTSERV sends an email back to the poster requiring the confirmation. The poster must then respond to this confirmation request by either sending an email with "OK" in the body back to LISTSERV, or by clicking on the confirmation link provided in the email (the confirmation link is only provided if the LISTSERV Web Interface is installed on the LISTSERV server).

7.4.7 Topics for User Defined Lists

Large active LISTSERV lists often use "sub-groups" within the list to give subscribers the opportunity to receive only the posts to the list they are most interested in. Sub-groups are created in LISTSERV by defining the keyword `Topics` in the list header. Lists can have up to 23 topics defined in the header. List subscribers can elect to receive only those messages that fit into the topic(s) they are interested in reading. Similarly, messages can be posted only to specific topics. For example, a large list could have the general subject of XYZ Software. Topics could be defined by the types of users of the software, the type software purchased, or tips and tricks for using the software. For more information on Topics, see the LISTSERV List Owner's Manual.

To define a new topic, simply click the **New Topic** link and fill out the empty topic row that appears. In the list, topics are displayed either in the display mode or in the editable mode. In the display mode, each topic has an associated **Edit** link to set it into the

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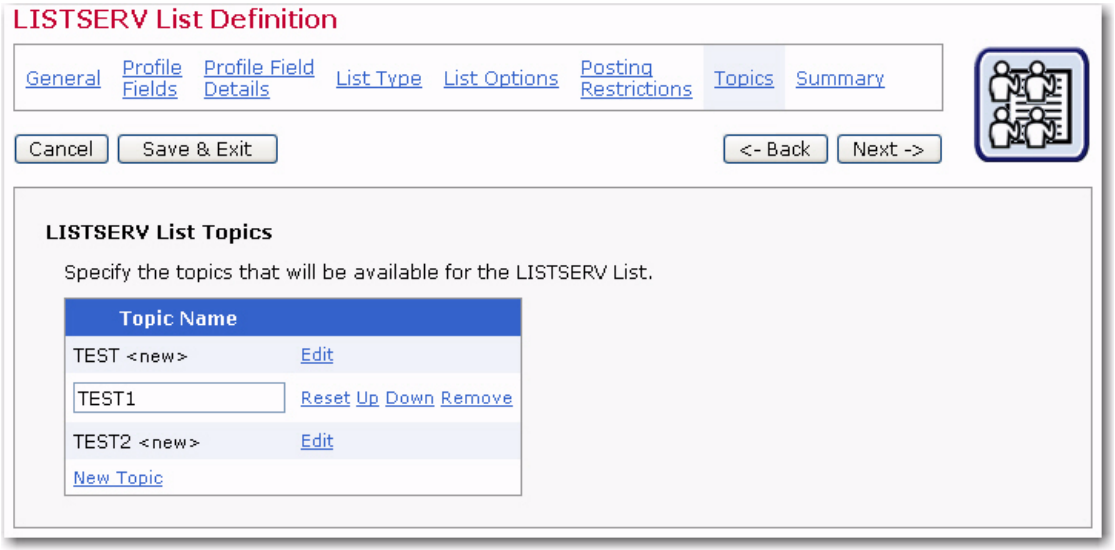
editable mode. In the editable mode, the topic name can be changed and the following actions are available: **Reset** (forget changes and reset the topic to the state it had when the editable mode was last entered for it), **Up** (move the topic up one step in the topics list), **Down** (move the topic down ones step in the topics list), and **Remove** (remove the topic).

Figure 7-36 The LISTSERV List Wizard – List Topics Screen



When the topic settings of a populated list change, all current subscribers' topic selections will need to be adjusted. This will occur when the LISTSERV list wizard is completed. The adjustment may take some time and a progress bar will be displayed as the system works.

Tip: Changing topics on a list where subscribers are currently very active needs to be carefully considered so a disruption does not occur. A better strategy would be to temporarily close the hosted LISTSERV list for maintenance (see Summary page), adjust the topics, and then re-open the list.

When adding new topics to a list that already has subscribers, an additional option, **Existing subscribers will have the new topics selected automatically**, will appear. Select this option to automatically add the new topics to all existing subscriptions. If this option is not selected, then the existing subscribers will not be subscribed to the new topics. Subscribers will be able to change their settings to add or drop the new topics if the dataset and list subscriber pages are enabled. This option applies to all topics that are added on this page during the same List wizard session. To add several topics, some of which the current subscribers are automatically subscribed to and some not, the List wizard has to be engaged twice, once with the option selected (for those topics to be added to all subscriptions) and once with the option not selected (for those topics that will not be added to all subscriptions).

Once you're finished specifying the topics available for the list, click **[Next ->]** to continue.

7.4.8 Summary for Moderated Discussion Lists

The Summary screen displays all the selections made for the LISTSERV list during its creation.

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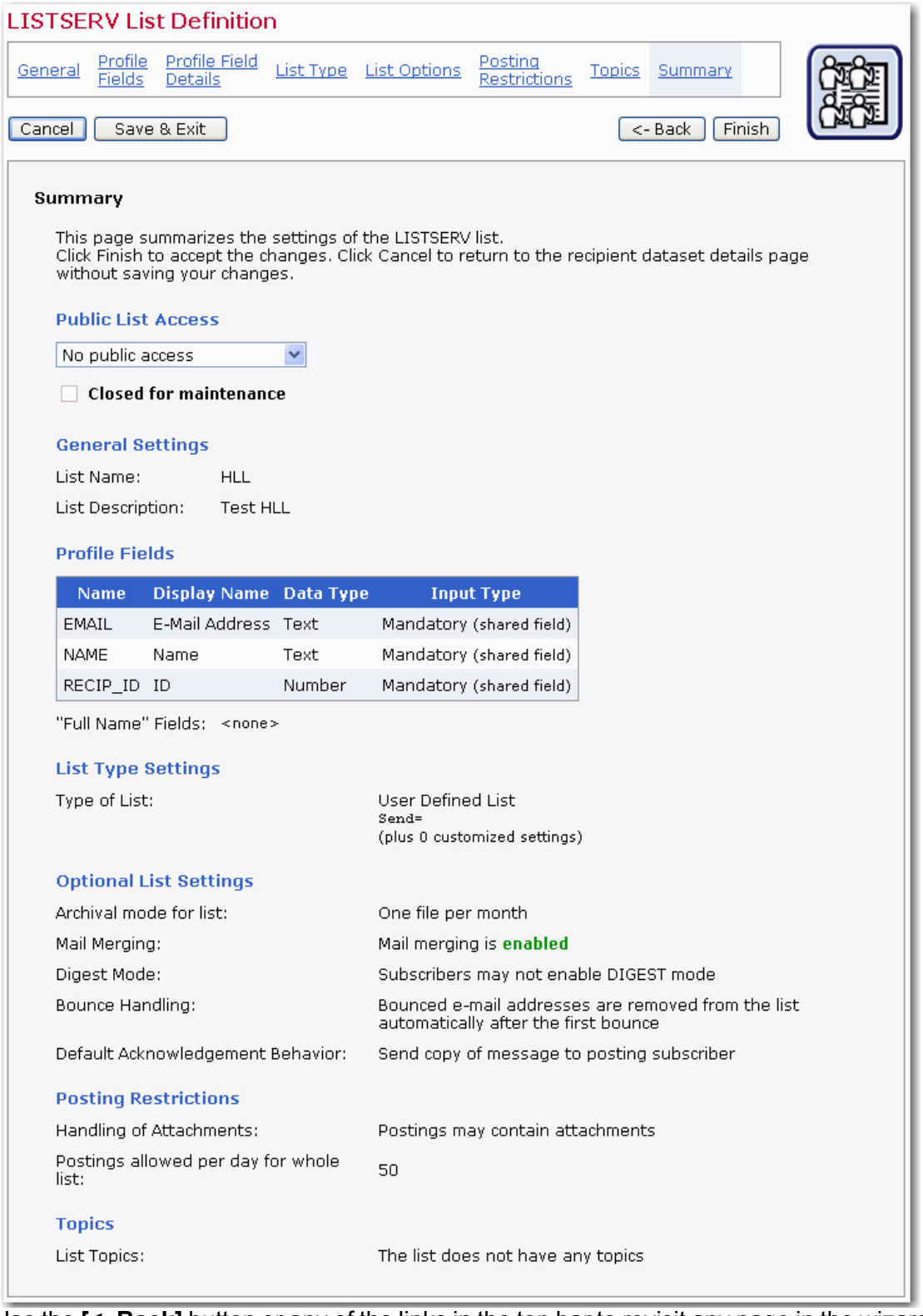
Figure 7-37 LISTSERV List Wizard - Summary



Use the **[<- Back]** button or any of the links in the top bar to revisit any page in the wizard to make changes.

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Before the list can be used, its access level needs to be set using the **Public List Access** drop-down menu. The list can be set to be accessible to anyone with access to the dataset wishing to subscribe, to be accessible to only list subscribers, or to have no public access. If a list is accessible to everyone, it will appear on the membership area Web page to anyone visiting that page. If the list is accessible only to members, the list will not appear in the membership area to everyone, it will only appear only to those who are subscribed to the list. This allows existing subscribers to manage their own settings, but new subscribers must be added by the Data Administrator or designated LISTSERV Maestro team members. Lists with no public access do not appear in the membership area to anyone.

Click **[Finish]** to accept the list as it is summarized and return to the Recipient Dataset Details screen.

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Section 8 Organizing Datasets

Datasets that have few lists usually have no special need to organize them in any particular way. Datasets that have many lists, or that want to make a clear distinction between one set of lists and another, can use categories and sub-categories to organize the lists.

8.1 Working with Lists

In the left pane of the Recipient Dataset Details screen, lists are displayed in alphabetical order by list name, regardless of the type of list – hosted recipient list or hosted LISTSERV list. The lists are also displayed in a tree-like structure, with the dataset as the root and each list as a node.

A Hosted Recipient List is show with a node icon that looks like a sheet of paper. For more information about this type of list, see Section 6 Creating Hosted Recipient Lists.

A Linked LISTSERV List is shown with a node icon that looks like a sheet of paper with the LISTSERV logo and a small arrow in the lower left corner. For more information about this type of list, see Section 8.3 Managing Linked LISTSERV Lists.

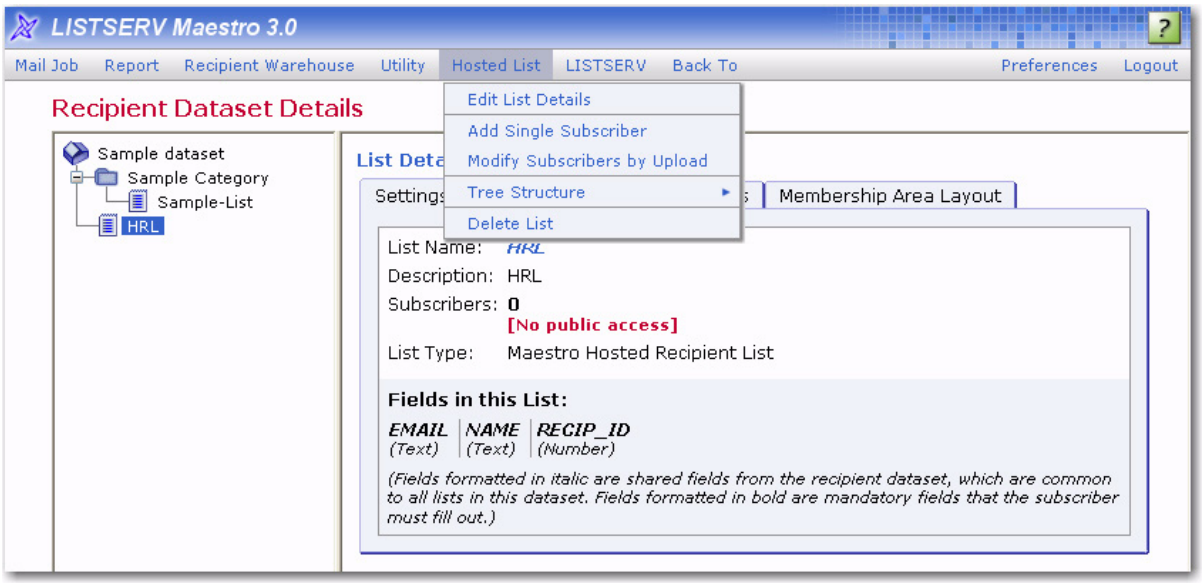
A Hosted Recipient List is show with a node icon that looks like a sheet of paper. For more information about this type of list, see Section 6 Creating Hosted Recipient Lists.

A Hosted LISTSERV List is shown with a node icon that looks like a sheet of paper with the LISTSERV logo. For more information about this type of list, see Section 7 Creating Hosted LISTSERV Lists.

A Linked LISTSERV List is shown with a node icon that looks like a sheet of paper with the LISTSERV logo and a small arrow in the lower left corner. For more information about this type of list, see Section 8.3 Managing Linked LISTSERV Lists.

To work on a specific list, simply click on that list and use the **Hosted List** menu to perform specific actions.

Figure 8-1 The Hosted List Menu



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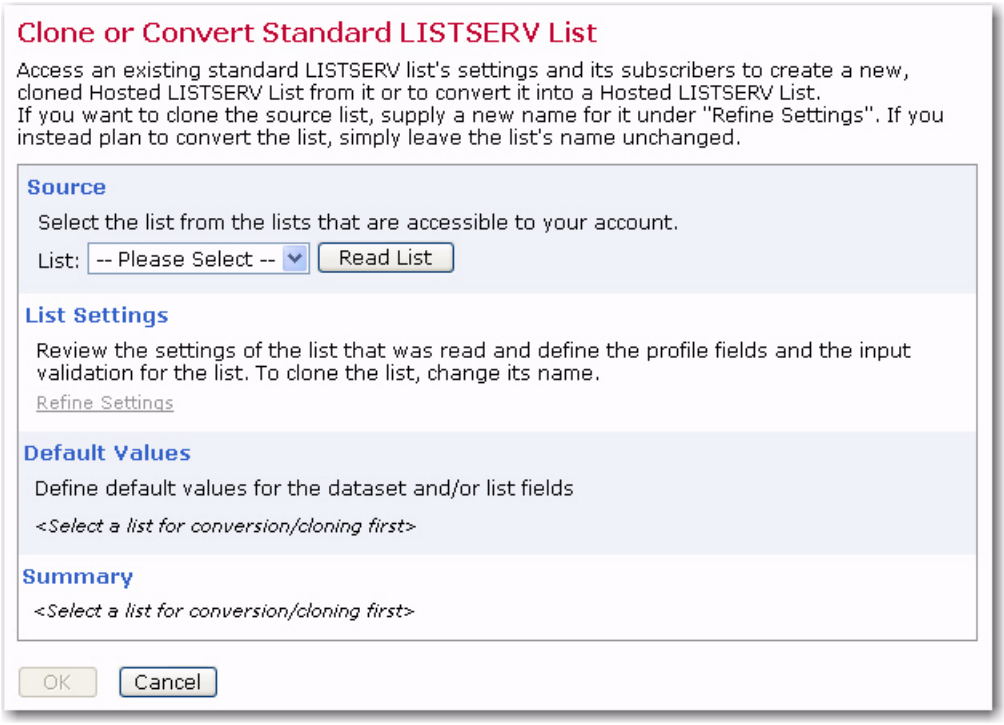
8.1.1 Converting or Cloning a Standard LISTSERV List

You can now convert an existing normal (not hosted) LISTSERV List into a Hosted LISTSERV List or create a Hosted LISTSERV List as a clone of an existing normal (not hosted) LISTSERV list (without changing the original list). The freshly created Hosted LISTSERV List will be located in the currently selected category, if applicable.

To convert or clone an existing list, click on the dataset in the left pane, and then click **Dataset** > **Create** > **Convert or Clone Standard LISTSERV List**. The Clone or Convert Standard List screen opens. Select the list you want to convert/clone from the drop-down menu. The settings and values for the list are displayed. To convert the list, simply leave the settings as is, and then click the **[OK]** button. To clone the list, click **Refine Settings** and enter a new name for the list. Click the **[OK]** button.

Figure 8-2 Clone or Convert a Standard LISTSERV List



8.1.2 Editing a List

To edit an existing list, select the list in the left pane of the Recipient Dataset Details screen, and then click **Hosted List** > **Edit List Details**. The list definition wizard for that type of list opens. For information on using a list definition wizard, see Section 6 Creating Hosted Recipient Lists and Section 7 Creating Hosted LISTSERV Lists.

Note: A list is only completely editable if it does not contain subscribers. For lists that do contains subscribers, only certain fields are editable.

8.1.3 Moving an Existing List into a Category

To move an existing list into a category, select the list in the left pane of the Recipient Dataset Details screen, and then click **Hosted List** > **Tree Structure** > **Cut**. The list will

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appear in the dataset as “grayed out”. The list still exists within LISTSERV Maestro, and it has not been disabled in any way. It will remain in its current position in the dataset tree until it is pasted somewhere else. Select the category to move the list into, and then click **Dataset** > **Tree Structure** > **Paste** to move the list into that category. To cancel the cut state and leave the list where it is, select the list in the left frame, and then click **Hosted List** > **Tree Structure** > **Clear Cut/Copy State**.

For information about creating categories, see Section 8.2.1 Creating a Category.

8.1.4 Deleting a List

To delete a list, click on the list that you want to delete in the left pane of the Recipient Dataset Details screen, and then click **Hosted List** > **Delete List**. Click **[OK]** to confirm. This action is not recoverable!

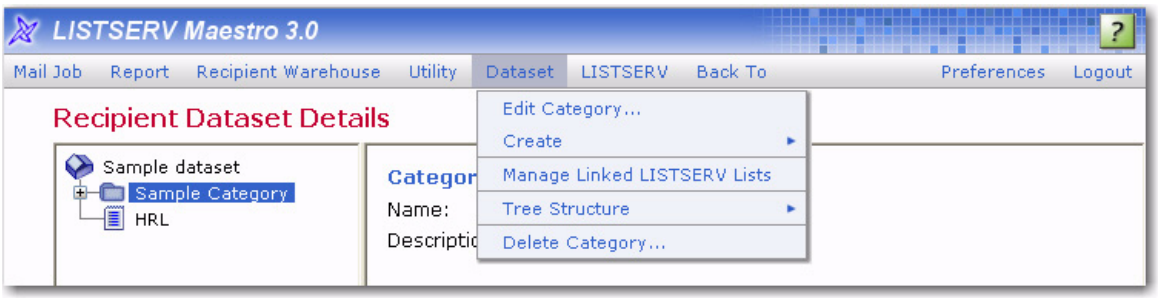
8.2 Working with Categories

Categories act like folders and sub-folders. They can be created at any time, either before or after the creation of hosted lists. Existing lists can be moved into and out of categories by cutting and pasting. New lists can be created inside existing categories.

In the left pane of the Recipient Dataset Details screen, a category is represented using a folder icon.

To work on a specific category, simply click on that category and use the **Dataset** menu to perform specific actions.

Figure 8-3 Using the Dataset Menu to Work with Categories



8.2.1 Creating a Category

To create a new category in a dataset, click **Dataset** > **Create** > **Create Category** from the Toolbar. The Recipient Dataset Details screen refreshes and you are able to enter the new categories information in the right pane. In the **Name** field, enter the name of the category. The name will appear in the left frame and on any public web pages that subscribers can access. In the **Description** field, enter a description of the lists that appear in the category. This description is to assist the data administrator and only appears internally. (The description is optional.)

8.2.2 Editing a Category

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To edit a category in a dataset, click on the category you want to edit in the left pane of the Recipient Dataset Details screen, and then click **Dataset** > **Edit Category**. The Recipient Dataset Details screen refreshes and the right pane displays the category's information, ready for editing. When you are finished editing the category's information, simply click the **[OK]** button to submit the changes. To cancel the editing, click the **[Cancel]** button.

8.2.3 Deleting a Category

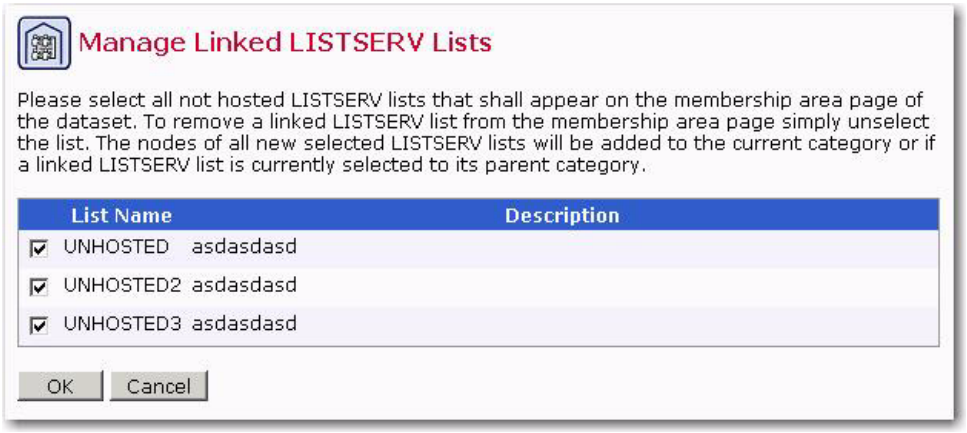
To delete a category, click on the category that you want to delete in the left pane of the Recipient Dataset Details screen, and then click **Dataset** > **Delete Category**. Click **[OK]** to confirm. This action is not recoverable!

8.3 Managing Linked LISTSERV Lists

Now you can create a "link" from your dataset to any existing traditional LISTSERV lists. Once linked, the list is integrated into the member area so that the subscribers can perform the usual tasks from within the member area, i.e. subscribe / unsubscribe / edit settings.

To create a link, click on the dataset in the left pane, and then click **Dataset** > **Refresh and Manage Linked LISTSERV Lists**. The Manage Linked LISTSERV Lists screen opens. From here, define which normal (not hosted) LISTSERV lists that exist on your LISTSERV server will also appear in the selected dataset.

Figure 8-4 Manage Linked LISTSERV Lists Screen



The screen displays a table with all normal LISTSERV lists (all LISTSERV which are not Hosted LISTSERV Lists, either of this or any other LISTSERV Maestro instance) that currently exist at the LISTSERV server (and which are visible to your account).

Check those lists for which you want a link to appear in the current dataset. The link will appear in form of a Linked LISTSERV List node in the dataset tree, either in the currently selected category or in the tree-root (if no category is selected).

Uncheck any LISTSERV list that has been linked previously to remove the link to this list. The corresponding Linked LISTSERV List node will also be removed from the dataset tree, no matter in which category (or tree-root) it is located.

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Click **[OK]** to submit your changes or **[Cancel]** to exit without submitting the changes.

Once a normal LISTSERV list has been "linked" into the dataset in this fashion, it will appear as an available list in the dataset's membership area so that subscribers can subscribe themselves to or unsubscribe from this list.

After you have created a Linked LISTSERV List node, you can move it to a different category in the dataset tree with the usual Cut & Paste operations. You can also access details of the LISTSERV list (like the name and title) from inside of LISTSERV Maestro. And, if the LISTSERV Maestro administrator has configured the system accordingly, there will also be a menu option that allows you to directly open the list configuration page of this list in the LISTSERV Web Interface.

Note: While it is possible to create a link to one and the same LISTSERV list in several datasets, this should normally be avoided (except for in special cases), as it may confuse subscribers that the same list is available in different membership areas.

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Section 9 Adding & Maintaining Dataset Members & List Subscribers

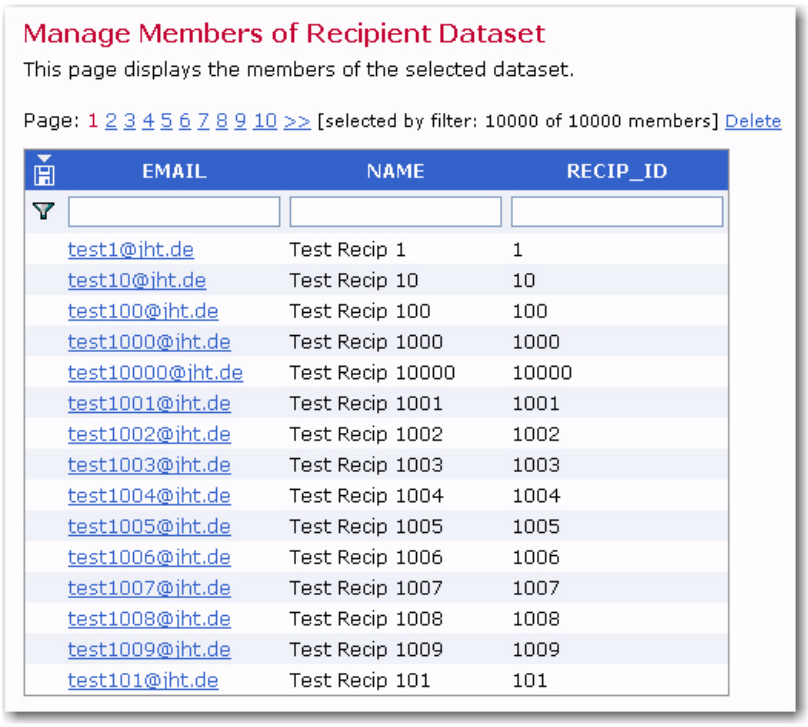
Dataset members and list subscribers can be added to a dataset and to lists by the data administrator or designated team members. Alternatively, they can add themselves if the dataset (membership area) or any lists in the dataset are visible to the public on the Web. Anyone joining a membership area using the web form has the option of subscribing to any available lists there. Subscribing directly to a list using the list's web form will automatically add the subscriber to the list's dataset. More information on self-subscribing to membership areas and lists is covered in Section 10 Allowing Members to Join a Dataset.

Once members belong to a dataset, their data can be managed within the dataset by the data administrator. Management can take place at the dataset level and at the list level. The data administrator can search for members, delete members, change a member's data, add a single member, download all members, and modify multiple members by uploading a file. Members of a dataset are managed by selecting the dataset. Subscribers to a list are managed by selecting the list.

9.1 Managing Dataset Members and List Subscribers

Dataset members can be reviewed, changed, or deleted by clicking on the dataset in the left pane of the Recipient Dataset Details screen and selecting **Dataset** > **Browse / Edit Confirmed Members** from the Toolbar. The Manage Members of Recipient Dataset screen opens.

Figure 9-1 Managing Members of a Dataset



This screen displays a list of all the confirmed members of a dataset. Confirmed members are those members who have been added to the dataset by the data administrator or have added themselves from the web form and then confirmed their

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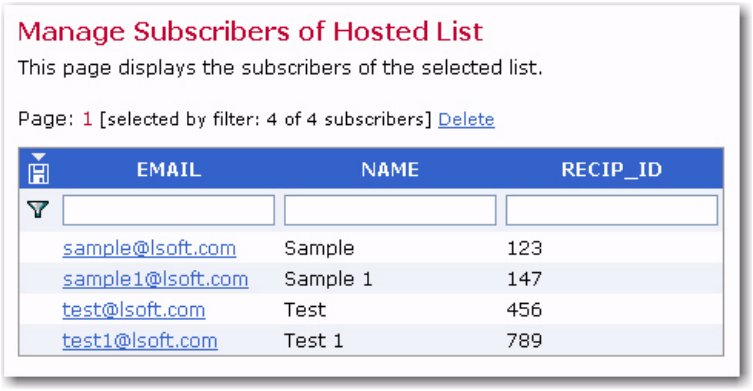
membership using a special email message sent to them by LISTSERV Maestro. Unconfirmed members are not displayed here. Unconfirmed members are those who have joined the membership area or subscribed to a list themselves, but have not yet replied to the confirmation email message sent to them by the system.

Subscribers can be reviewed, changed, or deleted by clicking on the list in the left pane of the Recipient Dataset Details screen and selecting **Hosted List** > **Browse / Edit Confirmed Subscribers** from the Toolbar. The Manage Subscribers of Hosted List screen opens.

Figure 9-2 Managing List Subscribers



If subscribers of a list are deleted from the list, they are not automatically deleted from the dataset. However, if members are deleted from a dataset, they will be deleted from all lists in that dataset. The functions and rules for managing dataset members and list subscribers are almost identical and will both be covered in this section. Pertinent differences will be pointed out in the text and screen shots.

The members of a dataset or list are displayed 15 at a time per page. A navigation system for paging through members appears when more than 15 members are in a dataset or list. Each page number is a clickable link and contains the next 15 members or subscribers. A maximum of ten page links will appear on the screen at a time. Datasets and lists with more than ten pages will use **<<** to denote the set of 10 pages before the open page, and **>>** to denote the set of 10 pages after of the current page links.

Members and subscribers are sorted alphabetically by email address. Members have their entire dataset profile displayed on the screen. Subscribers have their dataset profile along with any list specific fields displayed on the screen. The table header lists the profile field names in the dataset and list. Each column in the table represents one profile field on the web form. Each field is filled out with the corresponding value for that profile field and member. Mandatory fields have all values filled in for members, while optional fields can be blank. Boolean fields will have a “T” for true and an “F” for false. Datasets with selection menus that allow for multiple selections will display all selected values separated by commas. LISTSERV lists that have topics have all the selected topics displayed.

9.1.1 Editing Member and Subscriber Profiles

Each email address is a link that opens the profile page for that member. Click on the email address of the member to be edited. Enter the new data in the profile fields, and then click **[OK]** to save the new data and return to the previous screen. Click **[Cancel]** to

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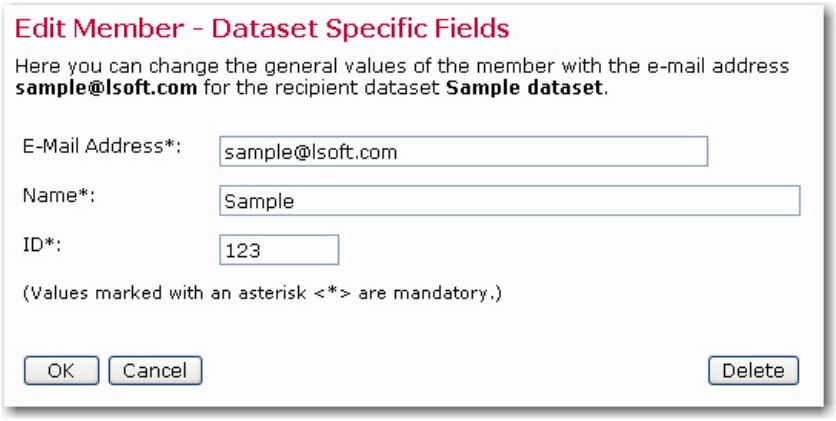
return to the previous screen without saving the new data. Click **[Delete]** to delete the member from the dataset.

Member profiles will contain only those fields that belong to the dataset.

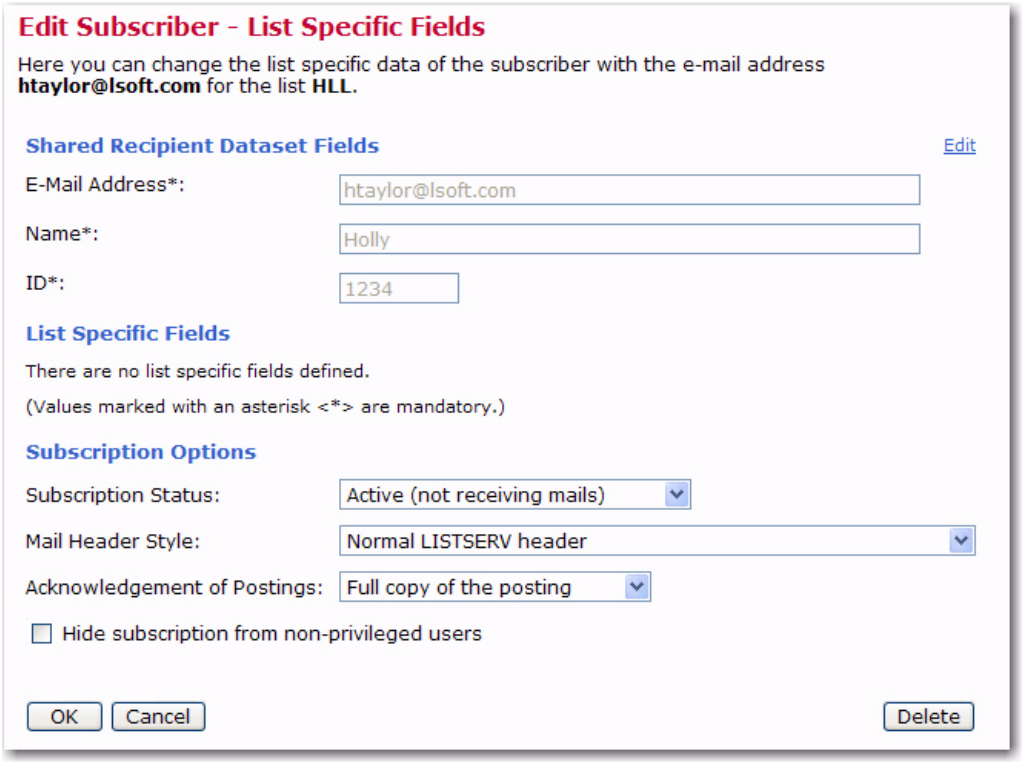
Figure 9-3 Edit Dataset Member



Subscriber profiles will contain the member profile in the top part of the screen with the values grayed out and the list specific fields and the subscription options below. It is possible to edit the member profile from the list profile screen by clicking the **Edit** link located on the upper right. The **Subscription Options** section lets the data administrator have access to the subscription options, just as the subscriber would.

New

Figure 9-4 Edit List Subscriber



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9.1.2 Filtering Members and Subscribers

Locating members within a large dataset can be easily accomplished by using the filtering system available on the Manage Members of a Recipient Dataset screen. Locating subscribers within a large list can be accomplished using the filtering system on the Manage Members of Host List screen. Filtering works the same way for members and subscribers.

A **funnel** icon located in the upper left of the recipient data table precedes a row of blank edit boxes at the top of each column. Use the boxes to enter filtering conditions to narrow the search for specific members or subscribers. After adding the filtering conditions in the text boxes, click the **funnel** icon to filter the members. A new set of members will be displayed on the screen. This set can be filtered again by adding additional conditions in the text boxes and clicking the funnel again. After filtering, the full set of matching members can be downloaded by clicking the **download** icon located in the blue header row of the table. The file that is downloaded is in zipped format.

There are many ways to enter conditions to filter members of a dataset or list subscribers. The type of profile field determines what types of filtering can take place. Wildcards and operators can assist with filtering.

- **Text Field Filtering** – Fields based on text can be filtered using the following operators and wildcards:

Text Box Content	Filtering Result
empty	No filtering, all members displayed.
GINA	All members with a field value of “GINA”.
=GINA	All members with a field value of “GINA”.
<>GINA	All members with a field value not equal to “GINA”.
<GINA	All members with a field value less than “GINA” (less than in terms of alphabetical order).
<=GINA	All members with a field value less than or equal to “GINA” (less than in terms of alphabetical order).
>GINA	All members with a field value greater than “GINA” (greater than in terms of alphabetical order).
>=GINA	All members with a field value greater than or equal to “GINA” (greater than in terms of alphabetical order).
GINA*	All members with a field value that starts with “GINA”.
*GINA	All members with a field value that ends with “GINA”.
GINA	All members with a field value with “GINA” in it somewhere.

The text “GINA” was used as an example in this table. Any text string can be filtered using these rules.

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- **Number Field Filtering** – Fields that are based on numbers can be filtered using the following operators and wildcards:

Text Box Content	Filtering Result
empty	No filtering, all members displayed.
23	All members with a field value of “23”.
=23	All members with a field value of “23”.
<>23	All members with a field value not equal to “23”.
<23	All members with a field value less than “23”.
<=23	All members with a field value less than or equal to “23”.
>23	All members with a field value greater than “23”.
>=23	All members with a field value greater than or equal to “23”.
23*	All members with a field value that starts with “23”.
*23	All members with a field value that ends with “23”.
23	All members with a field value with “23” in it somewhere.

The number “23” was used as an example in this table. Any number can be filtered using these rules.

- **Boolean Fields** – Fields that are based on Boolean logic display a drop-down menu with the choice of three filters:

Filter Choice	Filtering Result
ignore	No filtering, all members displayed.
True	All members with a field value of “T” for true.
False	All members with a field value of “F” for false.

- **Single Select Fields** – Fields that are based on single selection menus can be filtered using the same rules for filtering text.
- **Multiple Select Field Filtering** – Fields based on multiple selection menus cannot be filtered.
- **Topics Field Filtering** – LISTSERV lists that contain topics cannot be filtered using the special topics field that is displayed when browsing the list members.

9.2 Adding a Single Member or Subscriber

The data administrator can add members to a dataset or subscribers to a list one at a time. It is important to have the necessary data for each addition.

To add a single member to a dataset:

1. Select the dataset.
2. Click **Dataset** > **Add Single Member**.

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3. Fill in all the fields marked with an asterisk "*".
4. Optionally, fill in any other fields.
5. Click **[OK]**.

The member will be added to the dataset. Members added to a dataset are not automatically added to any lists in that dataset set. To add or change information at the dataset level, click **Dataset** > **Browse / Edit Confirmed Members**.

To add a single subscriber to a list:

1. Select the list.
2. Click **Hosted List** > **Add Single Subscriber**.
3. Enter the email address of the new subscriber in the edit box.
4. Click **[OK]**.
5. If the address is not already a member of the dataset, fill in all the mandatory fields for the dataset and the mandatory fields for the list. If the email address already is a member of the dataset, the dataset fields will already be filled in and their values will appear in gray. Fill in the list specific fields.
6. Optionally, fill in any other list fields.
7. Click **[OK]**.

New list subscribers that are not dataset members are automatically added to the dataset when they are subscribed to any list in that dataset. To add or change information on the list level, click **Hosted List** > **Browse / Edit Confirmed Subscribers**.

9.3 Modifying Members or Subscribers by Upload

Any existing dataset or list can have its current membership modified by the data administrator uploading a file in to the system. This is the easiest way to add many members to a dataset or subscribers to a list as well as update data for numerous members and subscribers. As with other management tasks, the steps for uploading a file to change data for a dataset and to change data for a list follow very similar procedures.

9.3.1 The Upload Wizard

LISTSERV Maestro uses the Upload wizard to assist the data administrator with modifying the data in an existing dataset or list. The wizard is comprised of seven pages that go through the process of modifying the data of an existing dataset or list step by step. Depending on the choices made on some wizard pages, other pages may become disabled or appear in different versions. If a wizard page is disabled, it is not necessary with the current selections and can safely be ignored.

Files uploaded to the system must be in `.TXT` or `.CSV` format, one record per line. The columns of data in the file do not have to be in the same order as they appear in the dataset or list. A header row is not required, but if the file has a header row, the header names do not have to be the same as the field names in the dataset or list. The Upload wizard will assist with parsing the data and matching header and field names. For more information on text formatted files, see Appendix B: About Comma Separated Files.

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To modify the current members of a dataset, select the dataset, and then click **Dataset > Modify Members by Upload**.

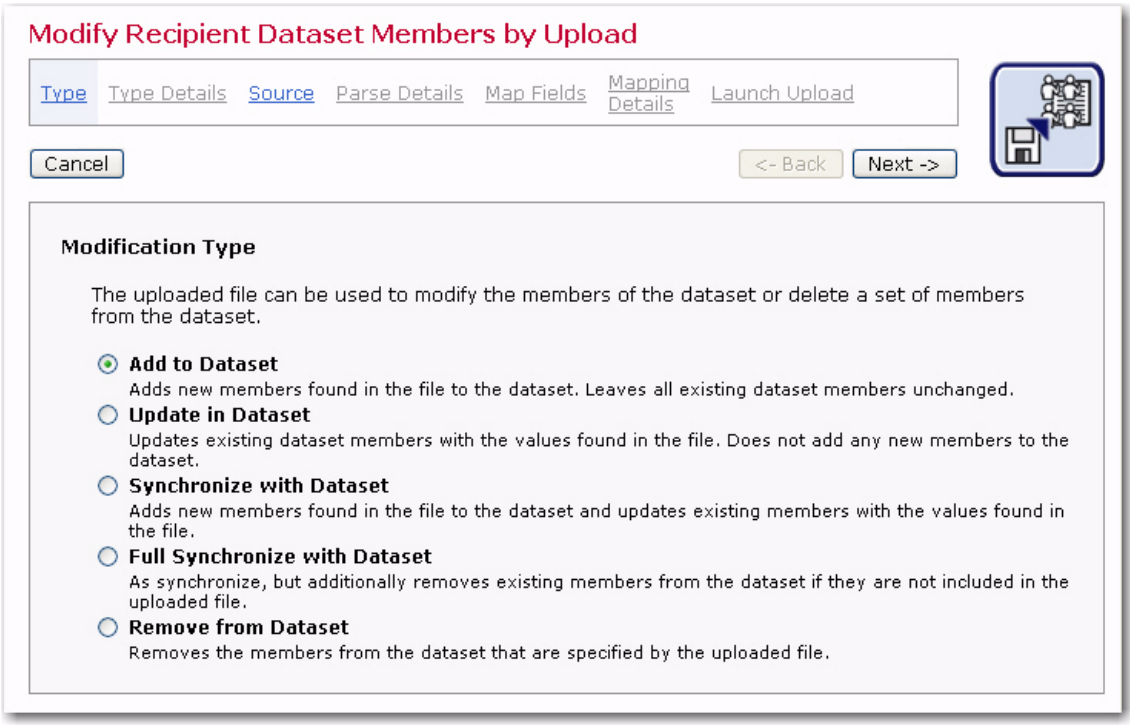
To modify subscribers of a list, select the list, and then click **Hosted List > Modify Subscribers by Upload**.

9.3.1.1 Type

The first screen of the Upload wizard is Type. The existing data can be modified five different ways. Available types for datasets are:

- **Add to Dataset** – Adds new members to the dataset. All existing members are left unchanged. If records for existing members or subscribers are present in the file, then these will be ignored.
- **Update in Dataset** – Updates the existing members with the values fond in the file. Does not add any new members to the dataset.
- **Synchronize with Dataset** – This is a combination of the "add" and "update" functions. Adds any new members found in the file and updates values for existing members found in the file.
- **Full Synchronize with Dataset** – The data in the file will become the exact data in the dataset. Adds any new members found in the file and updates values for existing members found in the file. Any existing members not included in the file will be deleted from the dataset and from any lists they are subscribed to.
- **Remove from dataset** – Removes members listed in the file from the dataset and from any lists they are subscribed to. Only the email addresses of those members to be deleted are required to be in the uploaded file; all other columns in the file are ignored.

Figure 9-5 The Upload Wizard –Type Screen for Dataset



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When modifying subscribers for a list, the values for the dataset are included. The available modifications for lists are:

- **Add to List** – Adds new subscribers to the list. All existing subscribers are left unchanged.
- **Update in List** – Updates the existing subscribers with the values found in the file. Does not add any new subscribers to the list.
- **Synchronize with List** – This is a combination of the "add" and "update" functions. Adds any new subscribers found in the file and updates values for existing subscribers found in the file.
- **Full Synchronize with List** – The list data in the file will become the exact data in the list. Adds any new subscribers found in the file and updates values for existing subscribers found in the file. Any existing subscribers not included in the file will be deleted from the lists. Subscribers removed from the list will not be removed from the dataset.
- **Remove from List** – Removes subscribers listed in the file from the list. Only the email addresses of those members to be deleted are required to be in the uploaded file; all other columns in the file are ignored.

Once you've selected the modification type, click **[Next ->]** to continue.

9.3.1.2 Type Details

The Type Details screen defines the details for the selected modification type. This screen may not be available for all modification types. For modifying datasets the following details are available:

Table 9-1 Modifying Datasets Details

Modification Type	Type Details Available
Add to Dataset	No Details Available.
Update in Dataset	**Overwrite Manual Changes:** If members have changed their settings since the last upload modification, will their changes be overwritten? Yes, overwrite manual changes with uploaded values. No, keep values of manually changed members.
Synchronize with Dataset (select the desired option button)	**Overwrite Manual Changes:** If members have changed their settings since the last upload modification, will their changes be overwritten? Yes, overwrite manual changes with uploaded values. No, keep values of manually changed members.
Full Synchronize with Dataset (select the desired option button)	**Overwrite Manual Changes:** If members have changed their settings since the last upload modification, will their changes be overwritten? Yes, overwrite manual changes with uploaded values. No, keep values of manually changed members.
Remove from Dataset	No Details Available.

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For modifying lists the following details are available:

Modification Type	Type Details Available
Add to List (select the desired option button)	If the new subscriber is not yet part of the dataset: Add as new dataset member – Adds the subscriber to the dataset and the list. Ignore subscriber row – Skips the row in the data file and does not add the subscriber to the dataset or the list.
Update in List (select the desired option button for each of the two sets of alternatives)	The Update may be applied to: List and dataset values – All changes to both the dataset and the list will be accepted. List values only – Changes in the list will be accepted and any changes to the dataset will be ignored. **Overwrite Manual Changes:** If subscribers have changed their settings since the last upload modification, will their changes be overwritten? Yes, overwrite manual changes with uploaded values. No, keep values of manually changed subscribers.
Synchronize with List (select the desired option button for each of the three sets of alternatives)	If the new subscriber is not yet part of the dataset: Add as new dataset member – Adds the subscriber to the dataset and the list. Ignore subscriber row – Skips the row in the data file and does not add the subscriber to the dataset or the list. The Update may be applied to: List and dataset values – All changes to both the dataset and the list will be accepted. List values only – Changes in the list will be accepted and any changes to the dataset will be ignored. **Overwrite Manual Changes:** If subscribers have changed their settings since the last upload modification, will their changes be overwritten? Yes, overwrite manual changes with uploaded values. No, keep values of manually changed subscribers.
Full Synchronize with List (select the desired option button for each of the three sets of alternatives)	If the new subscriber is not yet part of the dataset: Add as new dataset member – Adds the subscriber to the dataset and the list. Ignore subscriber row – Skips the row in the data file and does not add the subscriber to the dataset or the list. The Update may be applied to: List and dataset values – All changes to both the dataset and the list will be accepted. List values only – Changes in the list will be accepted and any changes to the dataset will be ignored. **Overwrite Manual Changes:** If subscribers have changed their settings since the last upload modification, will their changes be overwritten? Yes, overwrite manual changes with uploaded values. No, keep values of manually changed subscribers.
Remove from List	No Details Available.

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Once you've selected the type details, click **[Next ->]** to continue.

9.3.1.3 Source

The Source screen is used to determine where the uploaded text file originates. The file uploaded to the system must be encoded with the same character set (charset) that has been defined for the dataset being modified. For more information about character sets, see Appendix C: Email and International Character Sets.

Browse for the file on a local drive, and then click **[Upload]**. If a file has already been uploaded to the system, the **Upload a different file** link appears.

Once the files has been uploaded, click **[Next ->]** to continue.

9.3.1.4 Parse Details

The Parse Details screen lets you determine whether or not the data was uploaded and parsed correctly. When a text file is uploaded, LISTSERV Maestro will try to determine how the columns of data are separated, and how each column or field of data is labeled (header). In order to modify a dataset or list, LISTSERV Maestro must correctly interpret which column contains the email address of the recipient. Other fields may be included and will appear in the **Preview** table located on the lower half of the screen.

Click the **[Next ->]** button to continue if the parsing is accurate and each column of data is separated correctly and labeled with a header row.

If LISTSERV Maestro has not interpreted the data correctly, or an unconventional delimiter and/or quote character has been used, click on the **Specify separator and quote manually** link to configure the parsing manually. For example, if the `USERNAME` field contained `Tom "the cool cat" Jones` as an entry, and double quotes happened to be the quote character for the file, then the details would have to be specified manually. The same would be true if a field named `LOCATION` contained the entry `Atlanta, GA` where the comma was the separator character.

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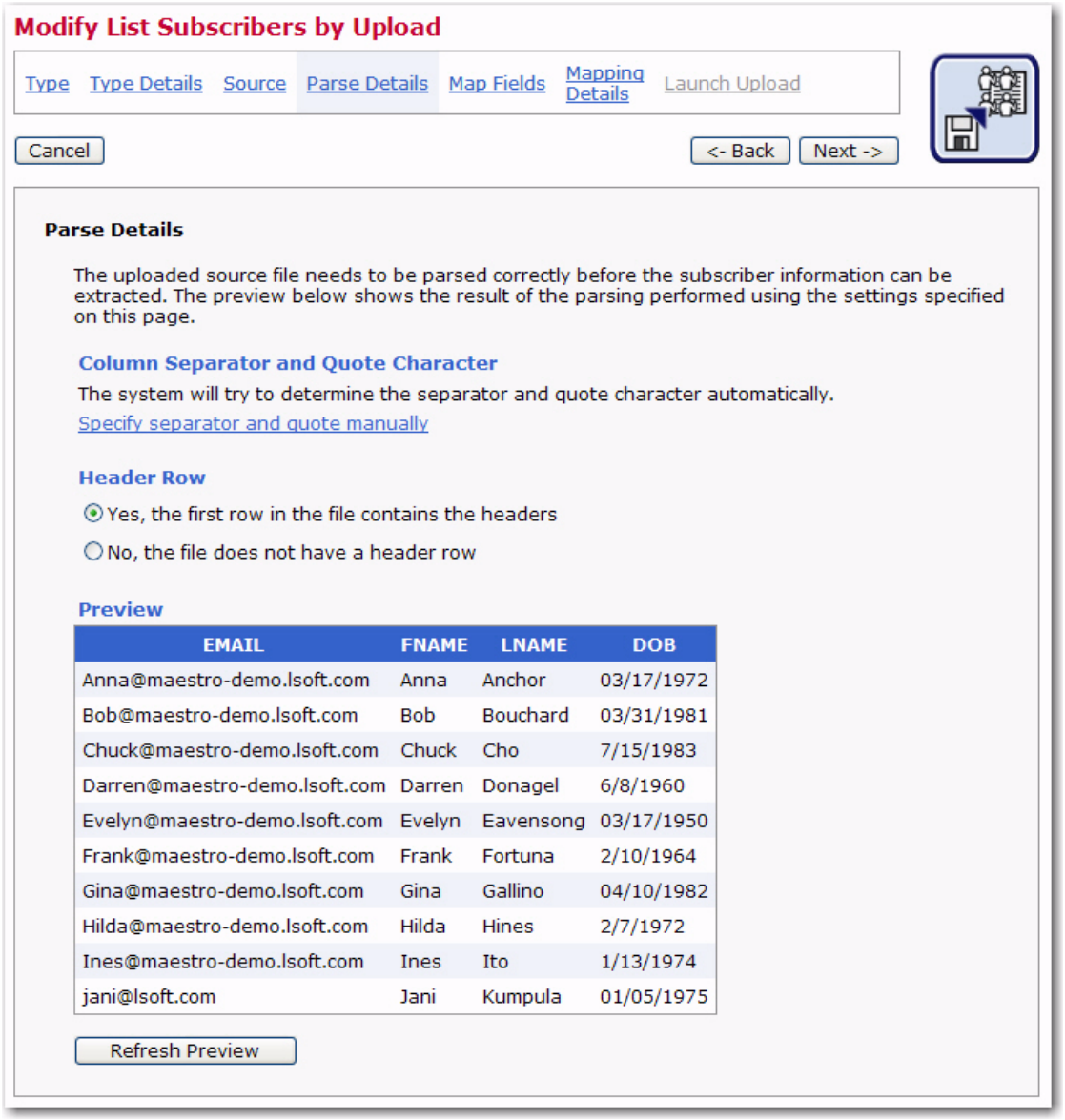
Figure 9-6 The Upload Wizard - Parse Details



LISTSERV Maestro has four selections for choosing separator characters:

- Tab (\t)
- Comma (,)
- Semicolon (;)
- Other – if this is chosen, type the character into the adjacent box.

Columns can be defined as **not enclosed by a quote character** or select the quote character from three choices:

- Double Quotes (“)
- Apostrophe (‘)
- Other – if this is chosen, type the character into the adjacent box.

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After separator and quote characters have been entered, and any encoding change made, click **[Refresh Preview]** to have LISTSERV Maestro attempt to parse the file again with the new settings. The new columns will then be displayed. If the columns are now separated correctly, proceed. If the columns are not correct, repeat the process and click **[Refresh Preview]** to see the new changes. Click the **[Next ->]** button to continue if the parsing is accurate and each column of data is separated correctly and labeled with a header row.

Headers are specially defined rows used to label the columns of data so that the system and the user can correctly identify the columns. An uploaded text file may contain headers or not. If the file does not contain headers, select the **No, the file does not contain a header row** option and the system will automatically add a header row. Each column of data in the header row will have a generic name using the pattern COL1, COL2, COL3, and so on. If the uploaded file does have a header row, select the **Yes, the first row in the file containers headers** option and the headers within the file will be used. Click the **[Next ->]** button to continue if the parsing is accurate and each column of data is separated correctly and labeled with a header row.

9.3.1.5 Map Fields

The Map Fields screen lets you map the columns of your uploaded file to the fields in the dataset. For example, if the header names for the columns of data do not match the names of the fields in the dataset or list, then they can be “mapped” to the correct fields. Boolean fields in this context are considered mandatory. Optional fields can be mapped, but it is not necessary for a successful upload. Any “extra” fields that may be contained in the file (fields that are not listed in the dataset or list) will be ignored by the system. This way, data to be used to modify datasets and lists does not need to match the format of the dataset or list exactly, but can contain other fields and different header names.

If the uploaded file contains headers, LISTSERV Maestro will attempt to map the fields to the column names. Fields that are mapped successfully appear with a **green checkmark** icon next to them. Fields that cannot be mapped automatically appear with a **yellow arrows** icon; these may be mapped to a column from the file, or a default value may be assigned in a later step. Fields that are mapped to more than one column have a **red null** icon; these must be fixed before proceeding.

To map a column from a file to a list or dataset field, use the drop-down menu under the header to locate the correct field and select it. If the file contains columns that do not map to any field, select **<ignore>** for these columns.

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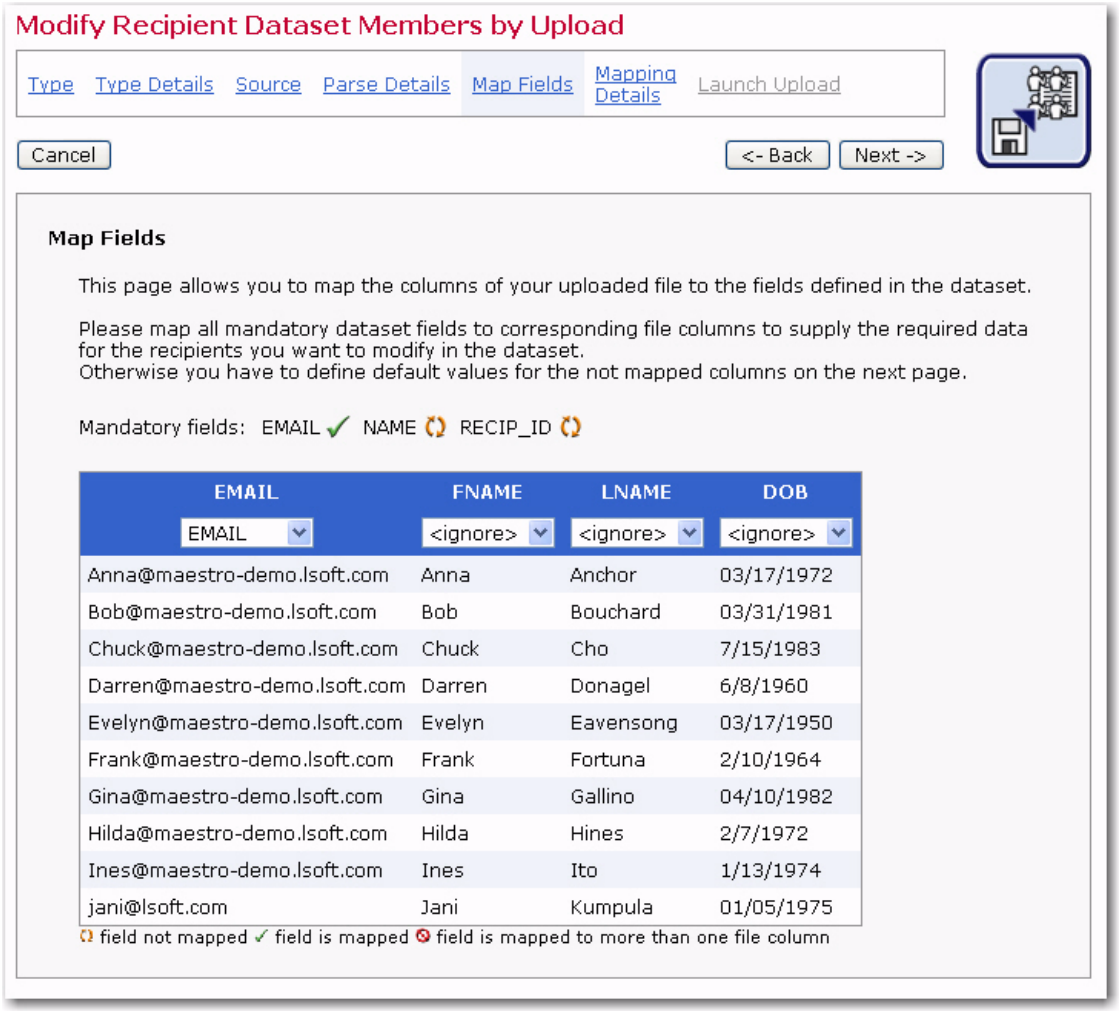
Figure 9-7 The Upload Wizard - Map Fields Screen



Once all the fields are correctly mapped, click the **[Next ->]** button.

9.3.1.6 Mapping Details

The Mapping Details screen is used for further defining fields so LISTSERV Maestro can correctly interpret the uploaded values. This screen is also used to provide default values, when necessary.

The following fields may be available for definition:

- **Default Values** – If values are missing in the uploaded data, then define the default values to be used for each field.
- **Boolean Value Mapping** – If Boolean fields are among those mapped on the Map Fields screen, then the Boolean value for these fields needs to be defined.
- **Multiple Value Parsing** – If Multiple Selection fields are among those mapped on the Map Fields screen, then the data in the uploaded file needs to be defined as to how it will be parsed to correctly extract multiple values from it.

The Mapping Details screen differs depending on the type(s) of fields mapped on the Map Fields screen. If only one of the above fields need further definition, then the

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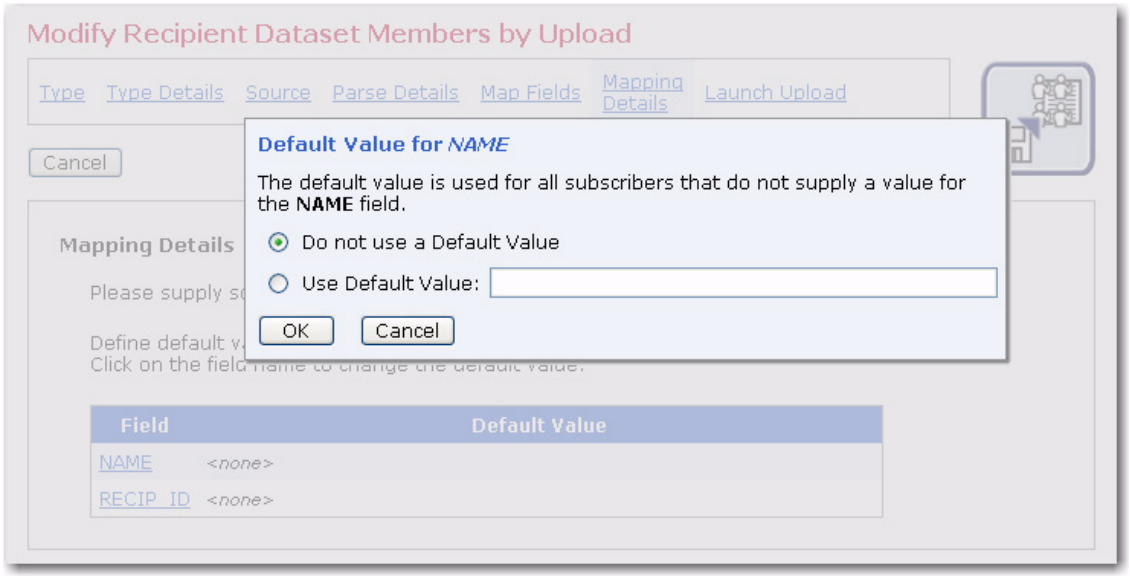
Mapping Details screen displays only that value. If there is more than one field that needs defined, then the screen will display a tab for each type of field. For example, if both Boolean fields and multiple selection fields need further definition, then the Mapping Details screen will appear with two tabs, one representing each type of field, allowing you to define each value. When each tab is completed, a green checkmark will appear on that tab. The **[Next->]** button will not be available until all required mapping details are completed.

Default Values

Default values are applied when field values from the uploaded data are missing. This tab displays a list of all the fields with the currently defined defaults. Click on a field to edit its default value. The Define Default Value screen opens.

Figure 9-8 The Upload Wizard - Mapping Details for Default Values



Default values are used in two cases:

- If the field is not mapped to a file column at all, then the provided default will be used for all uploaded rows to provide the field with a value.
- If the field is mapped to a file column, then the provided default will only be used for those uploaded rows where the value of the mapped column is empty. In this case, the field will not be assigned the empty value from the column, but the default defined here.

For fields that are **optional** (including the **hidden** and **read-only** types, which are variations of the **optional** type), then it is not necessary to define a default. If, for such a field, no default is defined, then the empty default is assumed. Therefore, for fields of this type, you can define a default (to get the defaulting behavior as described above), but it is not mandatory.

For fields that are **mandatory** (including the **visible** type, which is a variation of the **mandatory** type), then, in some situations, a default is required, and in some, it is not:

- Mandatory fields that are not mapped to a file column: For fields of this type, it is required to define a default; otherwise, the field would be empty for every uploaded

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row, and since a mandatory field is not allowed to be empty, then that would mean every uploaded row would be rejected as invalid.

- Mandatory fields that are mapped to a file column: For fields of this type it is not required to define a default; however, in many cases it may be advisable. If no default is defined, then any uploaded row where the value of the mapped file column is empty will be rejected as invalid (because the mandatory field may not be assigned an empty value). Therefore, if you want to avoid rows being rejected, define a default for use whenever the mapped column is empty.

Boolean Fields

When Boolean fields are present in a dataset or list, LISTSERV Maestro needs to know what value equates to “true” and what value equates to “false” for each field. These values do not have to be the same for all fields in the dataset or list. Each Boolean field can have its own true and false values. For example, one field might have the digit “1” represent true and the digit “0” represent false, and another field might have the letter “Y” represent true and the letter “N” represent false. Once the true and false values have been defined, they can be used to tell the system how to use the values to register a true or false in the dataset.

A “true” value can be registered by selecting one of the options:

- True is every value that is equal to the value entered in the **True** field.
- True is every value not equal to the value in the **False** field.

A “false” value can be registered by selecting one of the options:

- False is every value that is equal to the value entered in the **False** field.
- False is every value not equal to the value in the **True** field.

Three valid combinations of these options are possible:

- A value representing “true” is specified and a value representing “false” is specified. This combination will assign the corresponding Boolean values to all rows that have the specific true and false values. Any rows that do not have the specified true and false values will be skipped as invalid and can be downloaded from the Results Statistics screen after the upload is completed.
- A value representing “true” is specified and the “false” is every value that is not equal to the true value. This combination will assign the true value to those rows that have the specified value, and assign false to all other rows. No rows will be skipped due to an invalid value in that field.
- A value representing “false” is specified and “true” is every value that is not equal to the false value. This combination will assign the false value to all those rows that have the specified value, and true to all other rows. No rows will be skipped due to an invalid value in that field.

In the second step of Boolean field mapping, select which field to apply the values to by clicking the name of the field. If all of the Boolean fields use the same definition, click the **apply to all fields** link.

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Multiple Select Values

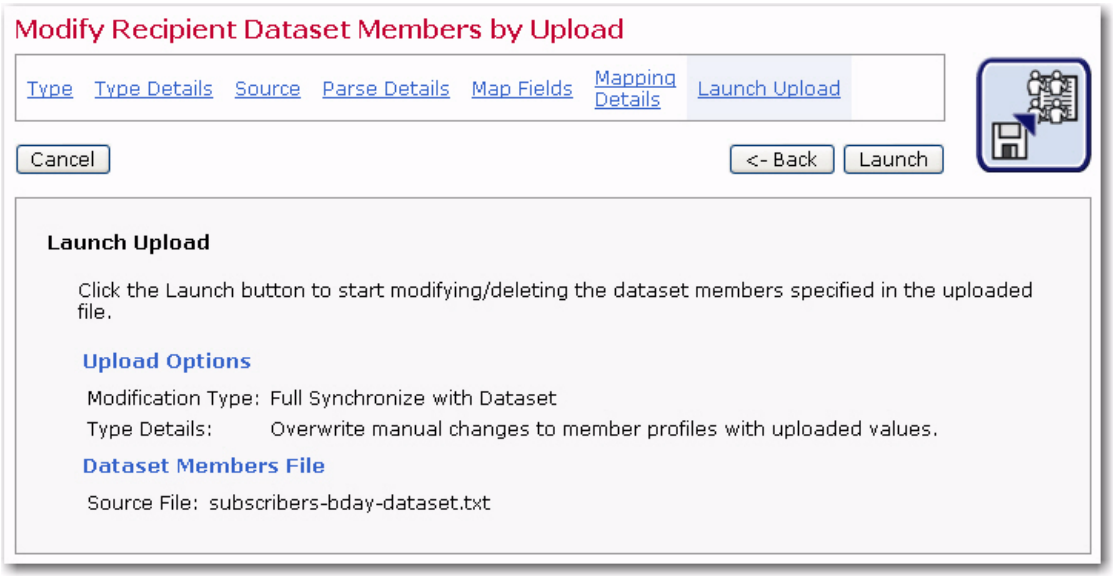
If there are multiple selection fields, LISTSERV Maestro needs to know how multiple entries are separated. If the separator character is used in one or more of the entries, those entries need to be surrounded by a quote character that LISTSERV Maestro needs to be aware of as well (see Section 9.3.1.4 Parse Details).

Click **[Next ->]** to continue if there are no other tabs to set mapping details for, or if each tab has a green checkmark.

9.3.1.7 Launch Upload

The Launch Upload screen summarizes the options for the upload. Use the **[<- Back]** button to return to the previous screen, or any of the links in the navigation bar to return to a previous screen to change selections. Click the **[Launch]** button to upload the file and modify the dataset or list. An Operation in Progress bar will display until the upload and modification are completed. Results of the modification will be displayed. Download any unprocessed rows by using the **download** links.

Figure 9-9 The Upload Wizard - Upload Results Statistics



Click **[OK]** to accept all modifications and return to the Recipient Dataset Details screen.

9.4 Team Collaboration

Team Collaboration is now available for datasets, allowing the data administrator to designate certain rights to other team members. These rights include the ability to add, remove, or modify subscribers, plus the ability to browse through subscriber data for purposes of downloading data for reports. Also available is the right to customize the subscriber access web pages.

To set up team collaboration for a dataset, click **Dataset** > **Team Collaboration**. The Team Collaboration screen opens. All of the team members in the same group as your own account are listed in the table on this screen.

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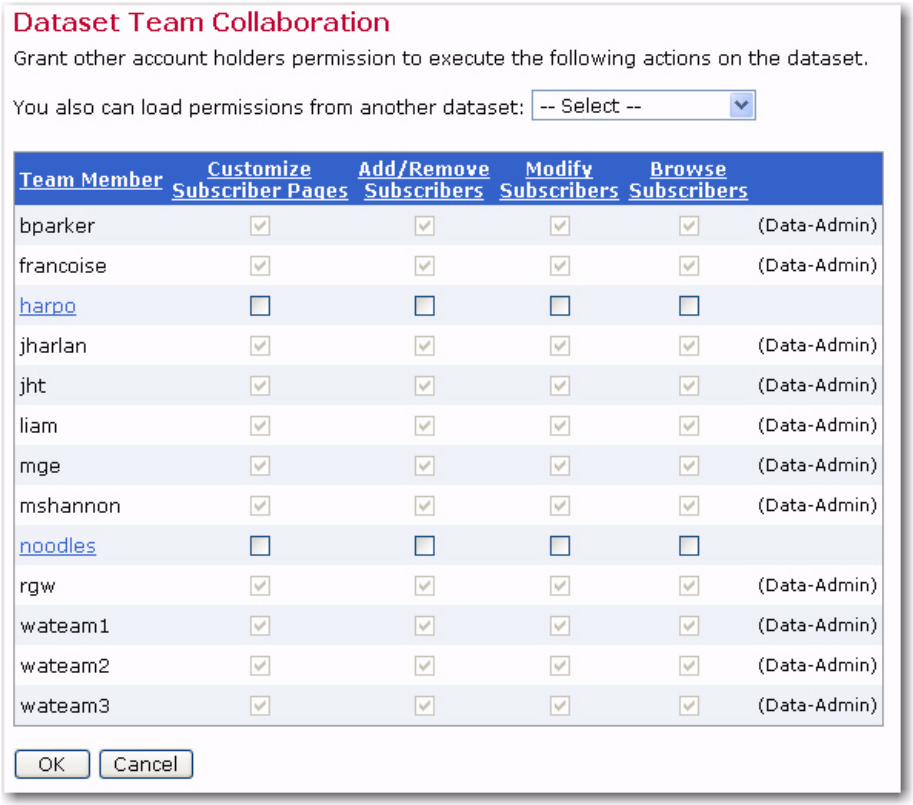
Note: Only data administrators have the right to grant team collaboration permissions to other team members; therefore, if you cannot access the Team Collaboration screen, then you are not a data administrator.

To grant permissions to other team members, simply check the box that corresponds to that particular permission. To revoke permissions, simply uncheck the box for that particular permission. To grant or revoke all of the permissions for a team member, click on the team member's name. To grant or revoke all of the permissions for all team members, click the **Team Member** link. To grant or revoke one specific permission to all team members, click the link for that permission. All of the boxes will either be checked or unchecked simultaneously.

To copy existing permissions from another dataset, select the dataset from the drop-down menu. The permissions will be automatically copied.

Figure 9-10 Team Collaboration Screen



The following permissions can be granted to a team member:

- **Customize Subscriber Pages**
  If this box is checked, then the team member has permission to customize the subscriber pages associated with the dataset and its hosted lists.
- **Add/Remove Subscribers**
  If this box is checked, then the team member has permission to add new members to the dataset and new subscribers to the hosted lists in the dataset. They can also remove members or subscribers from the dataset or its lists.

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If this permission is granted, then the **Modify Subscribers** and **Browse Subscribers** permissions are also automatically granted.

- **Modify Subscribers**
  If this box is checked, then the team member has permission to modify existing members of the dataset or modify existing subscribers of the hosted lists in the dataset.

  If this permission is granted, then the **Browse Subscribers** permission is granted. If this permission is revoked, and the **Add/Remove Subscribers** permission was already granted, then both permissions are revoked.

- **Browse Subscribers**
  If this box is checked, then the team member has permission to browse and view the list of current members of the dataset or subscribers of the hosted lists in the dataset.

  If this permission is revoked, and the **Add/Remove Subscribers** and/or the **Modify Subscribers** permissions were already granted, then all three permissions will be revoked.

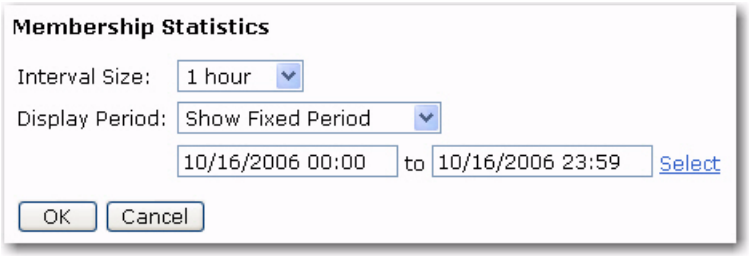
Note: Some team members in the list may be displayed as "read only", with all permissions granted and the Data-Admin label. This means that this particular team member is a data administrator. A data administrator always possesses all possible permissions, which can not be revoked from them on this screen. A user is considered a data administrator if the **Administer Hosted Recipient Datasets** option is granted in the Administration HUB (set by the administrator).

9.5 Member and Subscriber Statistics New

The Membership Statistics or Subscriber Statistics tabs on the Recipient Dataset Details screen show dataset and list subscriptions and signoffs over time using line charts.

Click on the **Show Settings** link to change the time period or interval for the line chart.

Figure 9-11 Change Settings for the Membership/Subscriber Statistics Tab



To view information for a specific date, move the cursor back and forth until you find the date, then click on that date. A box is displayed with the specific information for that date. This box may also contain links that, if clicked, will display another chart with the statistics for that day.

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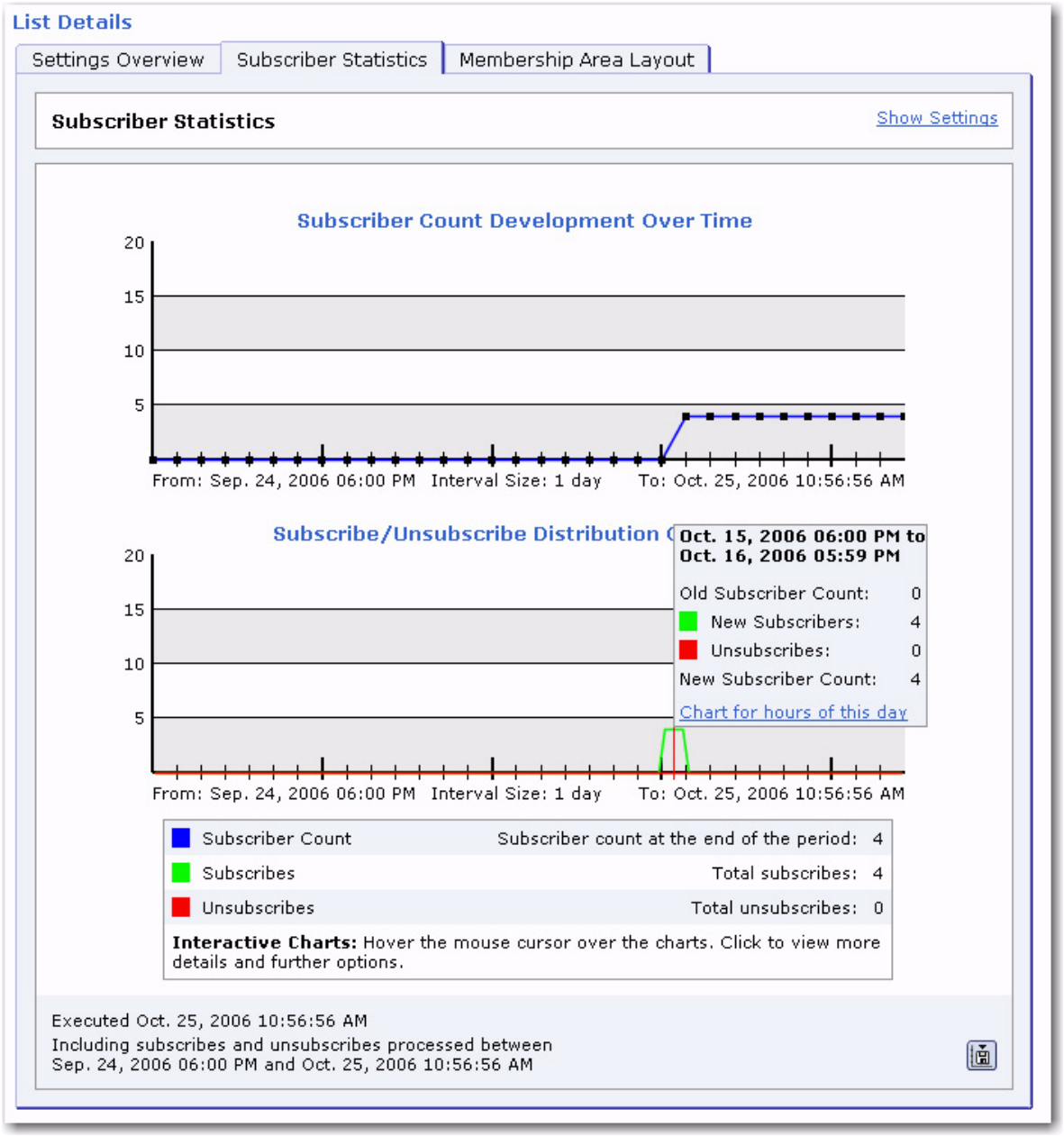
Figure 9-12 Sample Subscriber Statistics Report



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Section 10 Allowing Members to Join a Dataset

Although data administrators can add members to a dataset and subscribers to a list, allowing people to sign themselves up to receive the email they want is the best way to grow an internal mailing list. One of the best practices an organization can undertake to ensure that their messages are received, opened, and reacted to by those who wish to participate is to build a strong authentic subscriber base. Allowing people to join a dataset, subscribe to the lists they want, and manage their own settings can save the data administrator time and create goodwill between an organization and its membership.

LISTSERV Maestro provides several different levels of access for dataset members and list subscribers so that the data administrator can control how members and subscribers are added and removed from the system. Access to datasets and lists are set on the Summary screen of each definition wizard (dataset and list).

For datasets, the access levels pertain to the availability of the membership area on the Web. The membership area contains a form to join for non-members, login for current members, and once logged in, a membership profile settings page (made up of the values of the fields in the dataset and their password) and subscription settings. There are three levels of access to membership areas:

- **Open to everyone** – The membership area is open to anyone who can access the URL from the Web. Anyone can join, login, and manage profile and subscription settings. Passwords are created by individuals joining the membership area. Membership is not confirmed until new members respond to a confirmation email message sent by the system to the address used in the sign up form. This level of access requires the lowest level of interaction from the data administrator and the highest level of interaction from members.
- **Access for members only** – The data administrator must add members to the dataset. Membership is automatically confirmed without the need for a confirmation email. Passwords are not assigned by the data administrator, but generated by LISTSERV Maestro. Members must request a password before they can login to manage their settings. Once added and with a valid password, these members have access to the membership area. This level of access requires a moderate level of interaction from the data administrator and a moderate level of interaction from members.
- **No public access** – The membership area is closed to everyone. Members cannot join, manage their profiles, or leave. This level of access requires the highest level of interaction from the data administrator and the lowest level of interaction from members. Members wishing to be removed from a dataset will need to contact the data administrator and request removal.

Access levels can be changed at any time, but care needs to be exercised if access levels are suddenly going from being open to being restricted.

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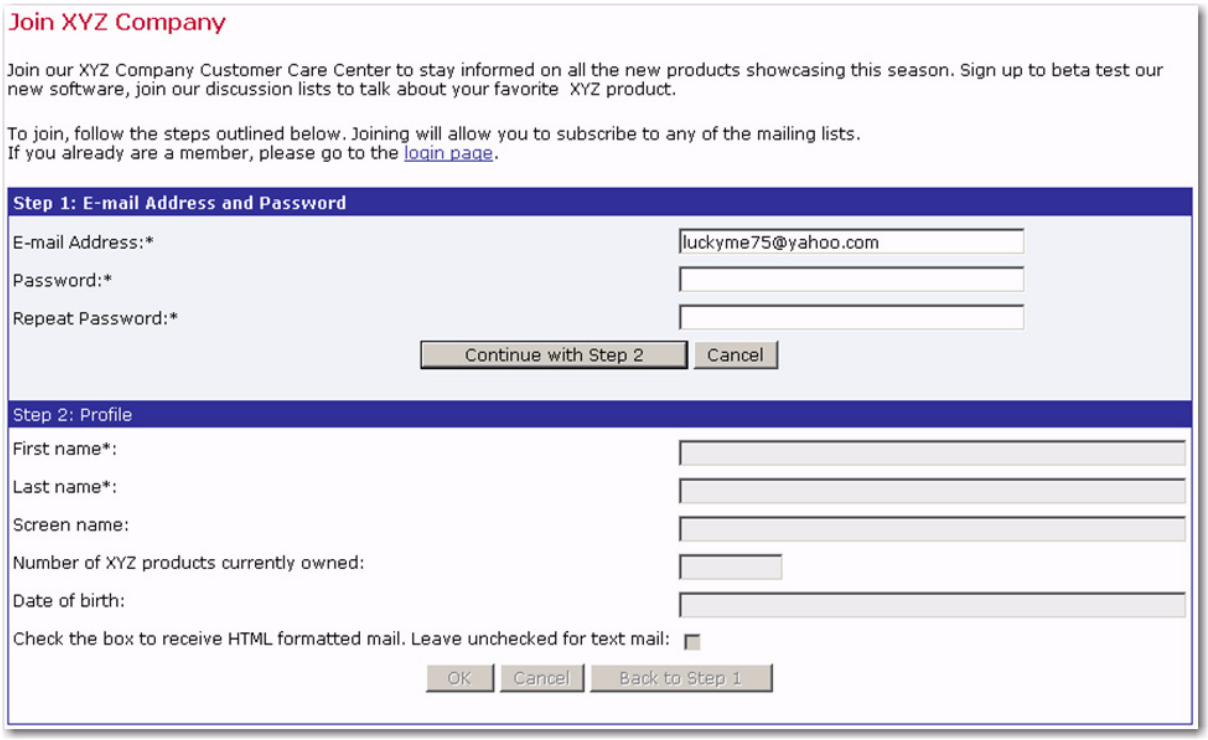
10.1 Joining a Membership Area (Dataset)

When people want to subscribe to a list, they can join the membership area that contains the list using the web form created by LISTSERV Maestro when the dataset was created. By filling out this form, they automatically become members of the dataset that contains the list. They will be able to log into the membership area and subscribe to lists, but they will not receive any list mail until they confirm their membership by replying to an automatically generated email message that was sent to the address they used when joining. Members usually have 48 hours to confirm a membership. They can also request another confirmation message be sent to them if they misplaced the original one.

Joining a dataset using the membership form is a two step process. The first step is to enter an email address and password, if applicable. The second step involves filling out the profile fields in the form. Mandatory fields must be filled out in order to join successfully. Optional fields can be left blank.

Figure 10-1 Joining a Membership Area



New **Note:** The **Password** field may not always be available when joining a membership area. When the dataset is created, the data administrator may choose between a member creating the password or the system defining the password. This only affects how the initial password is defined when a member joins the membership area. In both cases, it is still possible for the member to change the password at a later time.

Once the form is filled out and sent, a prospective member will be sent to the membership area where profile data can be changed and lists can be subscribed to, but no mail will be sent to the address until the member has confirmed the request.

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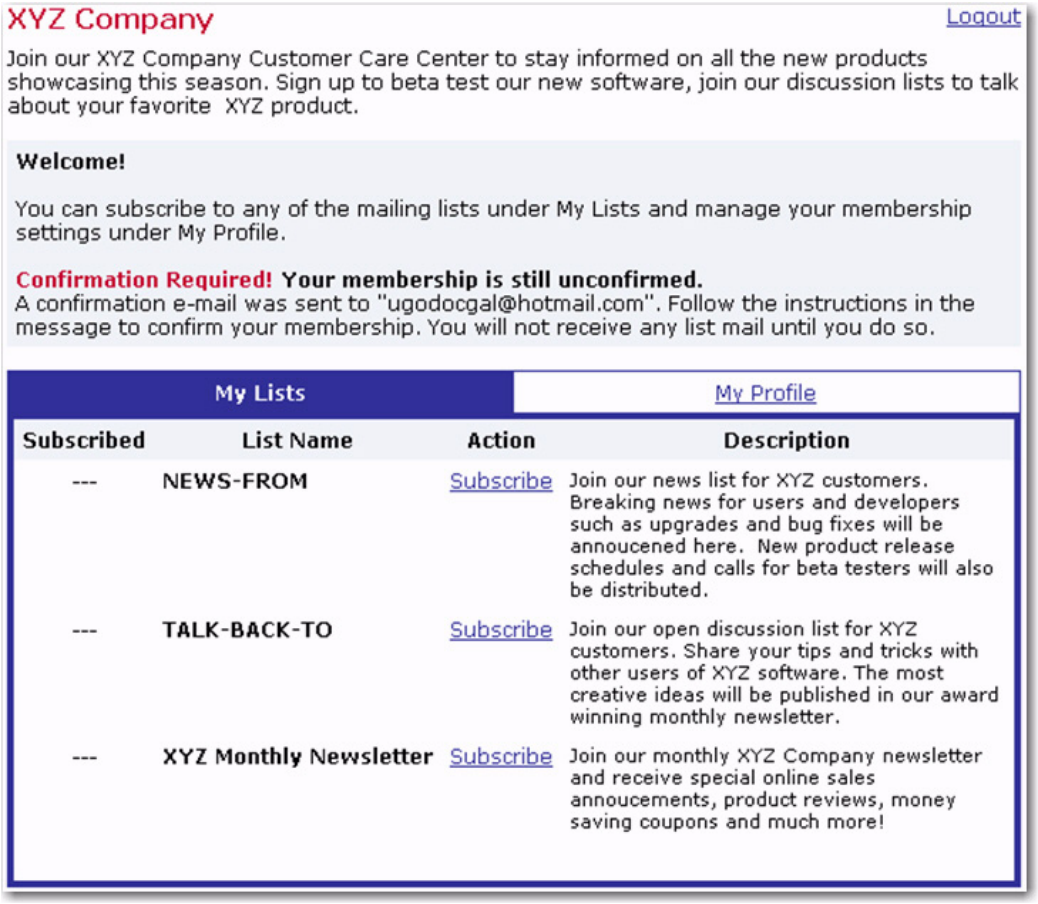
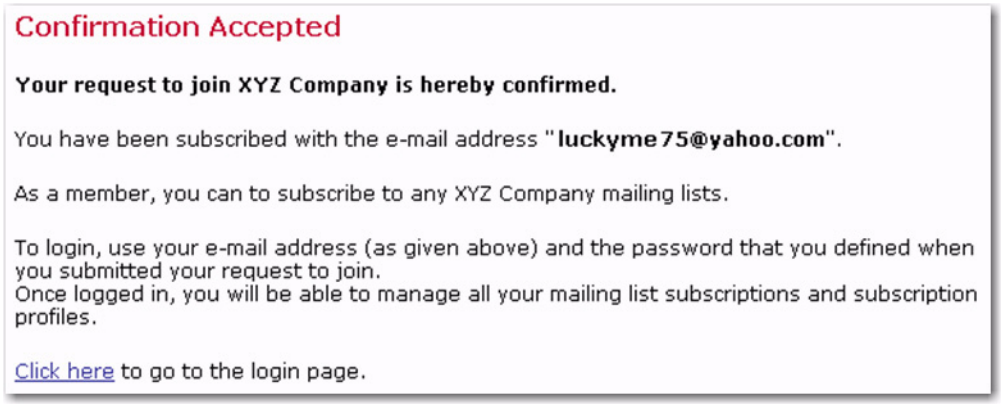
Figure 10-2 Membership Area for an Unconfirmed Member



LISTSERV Maestro will send a confirmation email message to the address used in the membership form. A link in the message must be clicked in order for the membership to be confirmed. A Confirmation Accepted message will appear once the link is accessed. From here, a new confirmed member can go to the login page.

Figure 10-3 Confirmed Membership Message



A confirmed member's login page will appear without the Confirmation Required warning. Members can subscribe and unsubscribe to any mailing lists that appear on the My Lists tab. Members can edit their profiles, change their passwords, and unregister from the My

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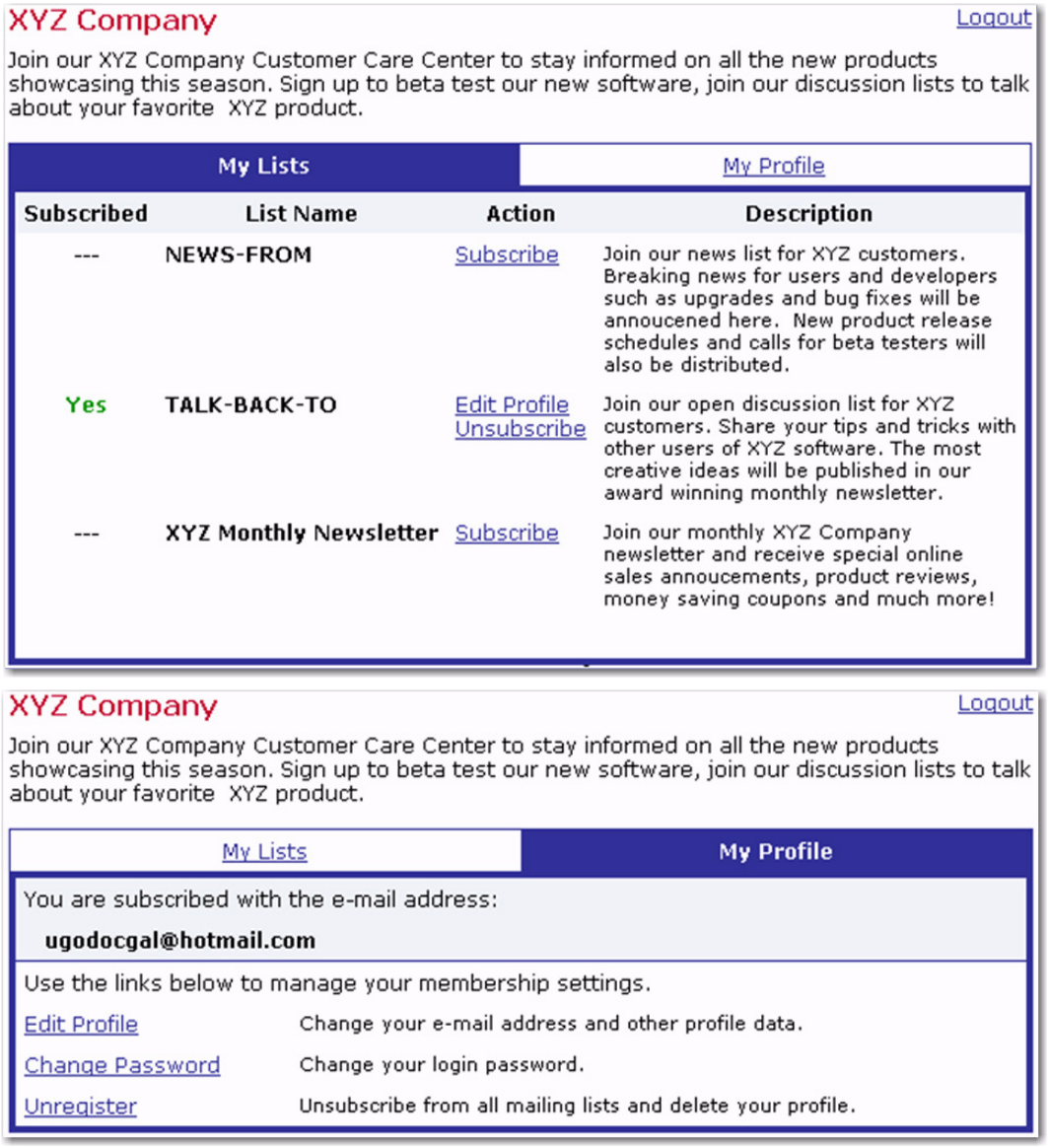
Profile tab. Unregistering from a membership area removes the member from the dataset and unsubscribes them from all lists in that dataset.

Figure 10-4 Membership Area for Confirmed Member



10.1.1 Accessing LISTSERV Archives

New

For datasets that contain Hosted LISTSERV Lists with archives, the subscriber pages/ membership area provides a link to the list's home page and archives within the LISTERV Web Interface.

10.1.2 Accessing the LISTSERV Maestro Subscriber Pages from LISTSERV

New

If give the right by the LISTSERV Maestro administrator, then the data administrator can request that the subscriber pages for any dataset be accessible from the Subscriber's Corner in the LISTSERV Web Interface. If this is the case, then the Subscriber's Corner menu will contain options that access each of the available datasets in LISTSERV Maestro.

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in addition, the Single Sign-On feature can also be available to subscribers so that, having logged into LISTSERV, they can automatically be logged into the LISTSERV Maestro subscriber pages that they visit.

10.2 Subscribing to a List

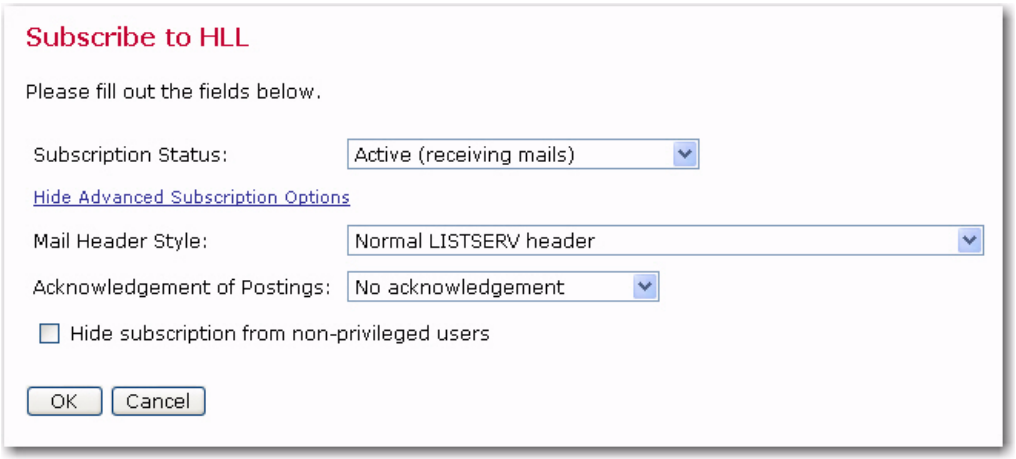
There are two different ways that people can self-subscribe to a list. They can join a membership area as described in Section 10.1 Joining a Membership Area (Dataset) and subscribe to the lists displayed there, or they can subscribe to a list directly if the data administrator has made the list subscription link accessible to anyone.

10.2.1 Subscribing from the Membership Area

Once a member, anyone can subscribe themselves to any visible lists from the My Lists tab. Any lists that a member is not subscribed to has a **Subscribe** link in the **Action** column. Click this link to open the Subscribe to "List" screen. Fill out any mandatory list specific fields, and then click **[OK]**. The member is now subscribed to the list.

Note: If applicable, the LISTSERV subscriber options can also be changed by clicking the **Show Advanced Subscription Options** link on the Subscribe to "List" screen. To hide these options, click **Hide Advanced Subscription Options**.

Figure 10-5 Subscribe to "List" from Membership Area with Advanced Subscription Options



Once a member is subscribed to a list, two new links become available in the **Action** column – **Edit Profile** and **Unsubscribe**.

The **Edit Profile** link will open any list specific profile fields that can be changed and saved. Use the **Subscription Status** drop-down menu to suspend ("nomail") or activate mailings. If the member is subscribed to a Hosted LISTSERV List (HLL), and that HLL has the digest setting enabled, then use the **Subscription Type** drop-down menu to change the DIGEST settings.

Note: These settings are also available if the member clicked the **Subscribe** link. If the member is subscribing to a Hosted Recipient List (HRL), then only the **Subscription Status** option is available. If the member is subscribing to a Hosted LISTSERV List (HLL), and that HLL has the digest setting enabled, then the **Subscription Status** and **Subscription Type** options are available.

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The **Unsubscribe** link removes the member from the mailing list, but does not remove the member from the membership area (dataset).

10.2.2 Subscribing from a List URL

Each list has its own web subscription form. If this form is made accessible to everyone, subscribers can fill out the form and subscribe to a list.

There are two steps to this process. The first step requires a valid email address and a password. LISTSERV Maestro checks to see if the email address is already a member of the list's dataset. If so, the dataset's profile fields will be automatically filled in, leaving only the list specific fields (if any) to be filled in by the subscriber. If the subscriber is not a member of the dataset, the mandatory dataset fields will have to be filled in along with any mandatory list specific fields.

Figure 10-6 Subscribe to List Screen from a List URL

10.3 Sending Mail to Hosted Lists

Sending mail to a hosted list can be accomplished once the list is complete and subscribers are added. The method for sending mail can be different, depending on the type of hosted list.

For hosted LISTSERV lists, users that have permission can send mail directly to any hosted LISTSERV list by selecting the **Send to an Existing LISTSERV List** option using the Define Recipients wizard when defining the recipients for a mail job. If users do not have the right to use that recipient definition, the data administrator will have to create a

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target group based on the hosted LISTSERV list. See Section 14 Classic LISTSERV List Target Groups for instructions. It is also possible to send mail to a hosted LISTSERV list by sending a message to the list address using a regular email client; the From: address on such a message must be permitted to post to the list. Mailings sent from outside of LISTSERV Maestro cannot be tracked.

Target groups are required to send mail to hosted recipients lists. Whenever a hosted recipient list is created and at least one subscriber is added, LISTSERV Maestro automatically creates a corresponding target group that encompasses all the current subscribers of that list. This target group is placed within a special target group category called <Hosted Recipients Lists Target Group>. The data administrator must enable this target group for use before any mail can be sent to the hosted recipient list. See Section 13 Hosted Recipient List Target Groups for instructions.

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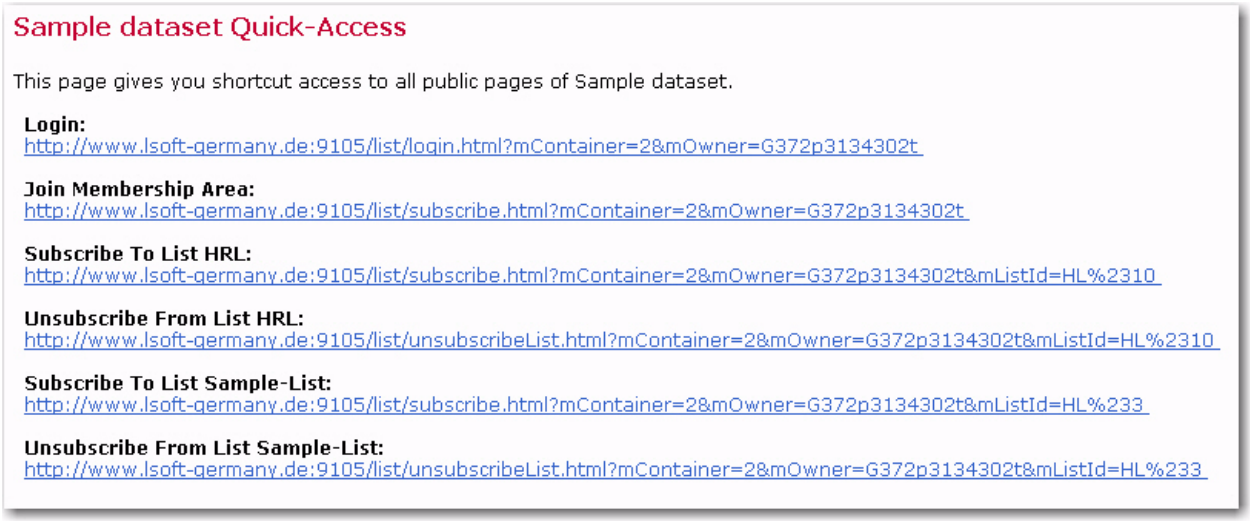
Section 11 Subscriber Access Web Page URLs and Customization

One of the final steps in the process of setting up a Recipient Warehouse – to collect, organize, and manage recipient data and email lists – is to provide people with access to the membership and list subscription areas. LISTSERV Maestro automatically generates URLs to all of the public pages of a dataset as each dataset and the lists within it are created. These URLs can then be used in links on the organization's main web site or sent in an email message in order to invite members and subscribers to join. Subscriber access URLs can be found on the Recipient Dataset Details screen by clicking **Dataset** > **Subscriber Access URLs**. Each dataset may have the following URLs defined:

- **Login** – Takes existing members to their membership page when they enter their email address and password. Members that have been added by the data administrator but do not have a password can enter their email address and request a password. Members that have forgotten their password can request a new one. There is also a link that brings people who are not members to the join membership area page.
- **Join Membership Area** – Takes a prospective member to the sign up page for the membership area (dataset). This URL is only available for datasets that are defined as "Open to everyone".
- **Subscribe to List [list name]** – Takes a prospective subscriber to the list's subscription page. Each list defined as "Open to everyone" in a dataset that is "Open to everyone" will have its own subscription URL.
- New **Unsubscribe to List [listname]** – Takes an existing subscriber to the list's unsubscribe page.

Figure 11-1 Subscriber Access URLs



Click on each of the subscriber access URLs to view what the public pages look like. After seeing what the public sees, it may be necessary to go back and edit the dataset fields or list fields. If the automatically generated web pages are inadequate for your site, they may be customized.

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11.1 Customizing the Subscriber Access Web Pages

The Customization wizard for the Subscriber Interface makes it possible for the data administrator to customize every page and email that a subscriber will see. This will make it easier for you to focus on your subscriber's "touch points" and convey your organization's message. This same customization can be applied to all of the pages related to a single dataset or you can customize each individual page. For example, text for some lists can be in English, and text for others can be in French, or the entire look and feel of the signup page for an individual list can be different from all other lists in the dataset.

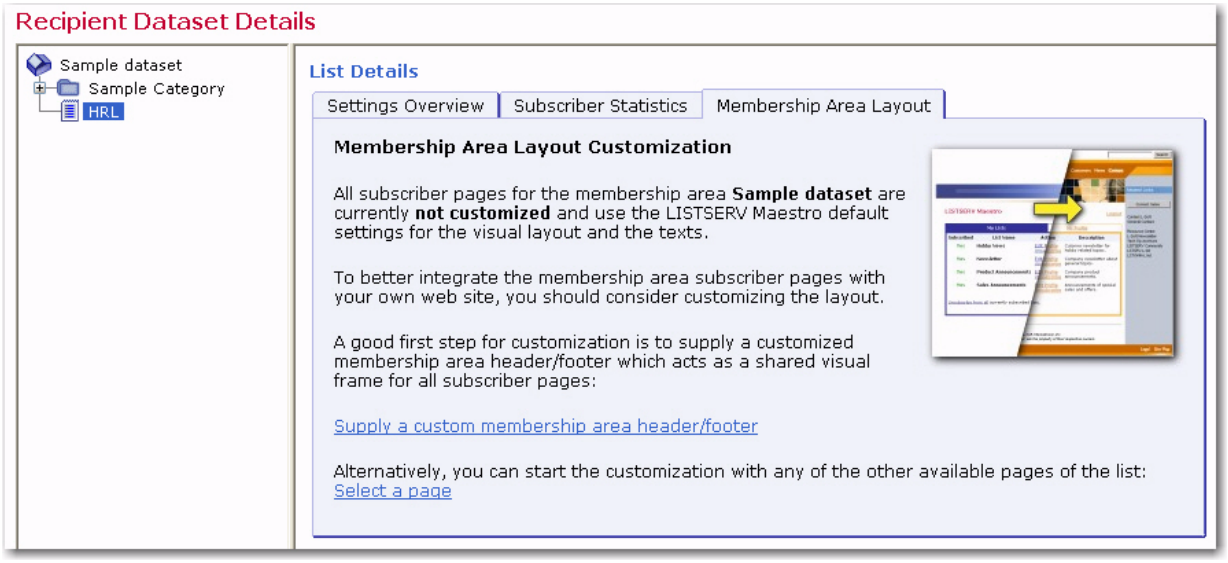
Context-sensitive instructions guide you through the Customization wizard, describing each template, listing the placeholders used in each template, and showing you how each template relates to the others.

The Customization wizard maintains two versions of every template – a draft version and a production version. You are also able to test the draft version of the template, using varying conditions, before releasing it into production.

To access the Customization wizard, click **Recipient Warehouse** > **Datasets** from the Toolbar. Click on the name of the dataset that you want to customize. The Recipient Dataset Details screen opens; click on the Membership Area Layout tab. If you have not customized your subscriber pages, then a general overview and introduction into the topic of membership area customization is displayed.

Note: If the subscriber pages are not customized, then LISTSERV Maestro will use the default setting for the visual layout and text.

Figure 11-2 Membership Area Layout Customization



To start customization, click on either the name of the dataset or the name of the list you want to customize, and then click either of these links:

- **Supply a custom membership area header/footer** – The header/footer is a common template which is (by default) shared by all pages that constitute the membership area; therefore, any changes to the header/footer will automatically

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affect all pages. Because of this, the header/footer is the ideal place to start the customization, providing a common layout for all pages.

- **Select a page** – In addition to the header/footer template, there are a number of other layout elements which can be customized. This link takes you to a list of all available layout elements.

Note: The sections below only summarize the customization process. For more information, see the Interface Customization Manual or the online help.

11.1.1 Supplying a Custom Membership Area Header/Footer

The Supply a custom membership area header/footer link opens the Customize Page Layout screen. This screen allows you to preview the draft and production version for each layout element you want to customize for the dataset.

To customize the membership area layout for the dataset, click the **Currently Customizing** drop-down menu and select **Membership Area Layout**. This layout is shown by default. To customize the list(s) in the dataset, click the drop-down menu and select list you want to customize (i.e. if you have a list named XYZ, then select **Layout of List XYZ**).

11.1.1.1 Customizing the Membership Area Layout

The Customize Page Layout screen for the Membership Area Layout is divided into two panes. The left pane is where you select the page or template that you want to customize. The default is the Membership Area Header/Footer page. To change, simply click the drop-down menu and select a different page/template to work with. From this menu, you can also select to customize notifications, messages, or error text. Once you make a selection, the area below the drop-down menu displays the following:

- If you selected a **template page**, **normal page**, or a **notification email**, then a short description of the selected layout element is displayed.
- If you selected a **message text** for a message group, then a list of available message for that group is displayed. Click on one of the messages to select it as the layout element you want to customize (or view). When you initially select a message group from the drop-down menu, the first message in the group is selected, by default.
- If you selected an **input validation error** for an error group, then a list of available errors for that group is displayed. Click on one of the errors to select it as the layout element you want to customize (or view). For each error group, there is an Error Group Header/Footer option that defines a common opening and closing text that is shared by all of the errors in this group. This header/footer appears first in the list of errors for the group and is select, by default, when you initially select an error group from the drop-down menu.

The right pane contains two tabs – the Draft Version tab and the Production Version tab. The production version is the version that subscribers, who access the membership area pages, actually see. The draft version, on the other hand, is not visible to the subscribers. This means that you can safely make any changes to the draft version without them becoming immediately visible. For example, you may want to customize one page after

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the other by editing their draft versions; but, you want to make the customized versions available all at once, after you have finished with all pages. Or, you may want to experiment a bit with the layout, without disturbing the actual production versions that subscribers see. Only when you finally deploy the draft version as the new production version will your changes become visible to subscribers.

Various action icons may be displayed, letting you execute certain action on the current draft version of the selected layout element. Not all actions are always available.

- **Edit Source** – Click to edit the current draft version.

- **Deploy as Production Version** – Click to deploy the current draft version as the new production version. This will make a copy of the current draft version of the selected layout element and write it into the element's production version, making this the version of the selected element which subscribers actually see. The draft version remains unchanged.

- **Copy from Production Version** – Click to make a copy of the current production version and use it as the new draft version. This will overwrite all current changes to the draft version. The production version remains unchanged.

- **Reset to System Default** – Click to reset the current draft version to the LISTSERV Maestro system default. This will overwrite all manual changes to the draft version and will reset it to its default. The production version remains unchanged.

Various comments may also be displayed, depending on the type of layout element you selected to customize.

- **Header/Footer Template** – The comment displays how many pages (in the dataset and its lists) that are currently using the header/footer template (i.e. pages that do not have a header/footer defined of their own but are inheriting the template). Click the **Details** link to view a detailed list of pages using this template.
- Any of the **List Page Templates** – The first comment displays if the template page inherits the header/footer template (see above) or if the header/footer is defined locally on the list page template. The second comment (below the first one) displays how many list pages are currently using the corresponding template (i.e. pages that do only define the layout of the actual list profile fields locally, but inherit the rest of the page layout from this template).
- Any of the **Normal Pages** – The comment displays if the page inherits the header/footer template (see above) or if the header/footer is defined locally on the page.
- Any of the **Message Page Texts** – The comment describes the currently selected message and the circumstances under which it is displayed to the subscriber.
- Any of the **Input Validation Errors** – The comment describes the currently selected error message and the circumstances under which it may occur. Also, unless the current message is already the error-header/footer of the error group, then it provides a link to select the error-header/footer for the current error group. By editing the error-header/footer, you can provide all errors in one error group with the same opening and closing texts.

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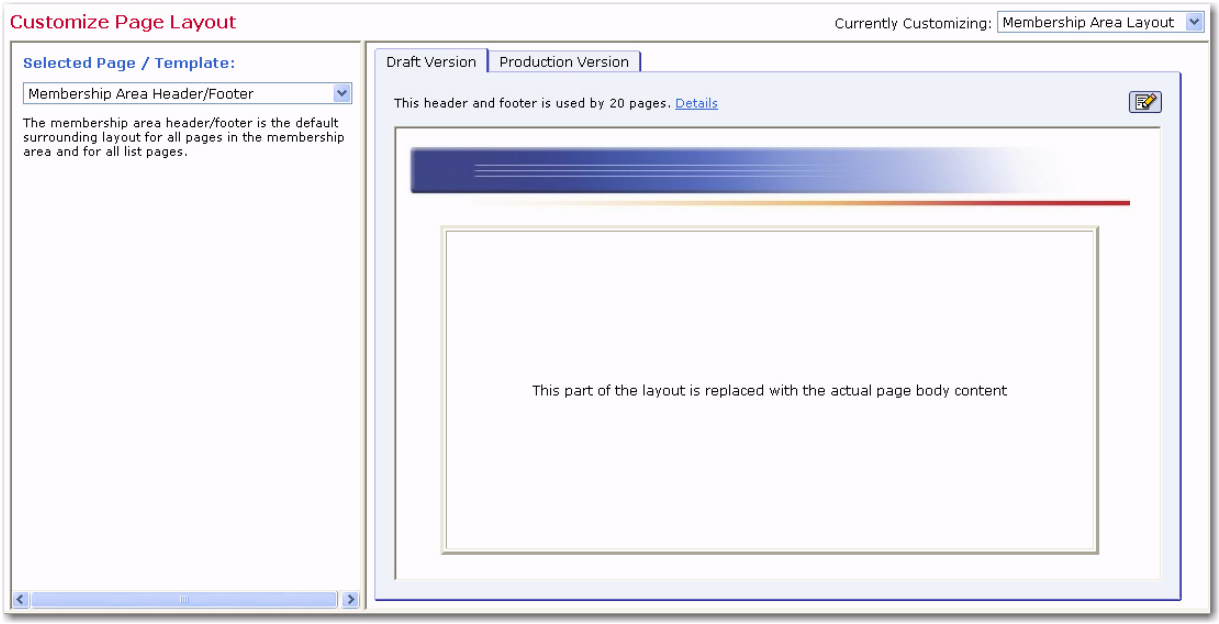
Additional controls may also appear, allowing you to simulate certain system states so you can verify their impact on the actual preview. These controls vary depending on the layout element selected, and only a few elements offer them. For information on these controls, please see the online help.

Figure 11-3 Customizing the Membership Area Layout



11.1.1.2 Customizing the Layout of a List

The Customize Page Layout screen for the selected list is divided into two panes. The left pane is where you select the list page that you want to customize. The default is the External Subscribe, Step 1 page of the list. To change, simply click the drop-down menu and select a different list page to work with. Once you've made a selection, a short description of the current list page is displayed below the drop-down menu.

Various action icons may be displayed, letting you execute certain action on the current draft version of the selected layout element. Not all actions are always available.

- **Edit Source** – Click to edit the current draft version.

- **Deploy as Production Version** – Click to deploy the current draft version as the new production version. This will make a copy of the current draft version of the selected layout element and write it into the element's production version, making this the version of the selected element which subscribers actually see. The draft version remains unchanged.

- **Copy from Production Version** – Click to make a copy of the current production version and use it as the new draft version. This will overwrite all current changes to the draft version. The production version remains unchanged.

- **Reset to System Default** – Click to reset the current draft version to the LISTSERV Maestro system default. This will overwrite all manual changes to the draft version and will reset it to its default. The production version remains unchanged.

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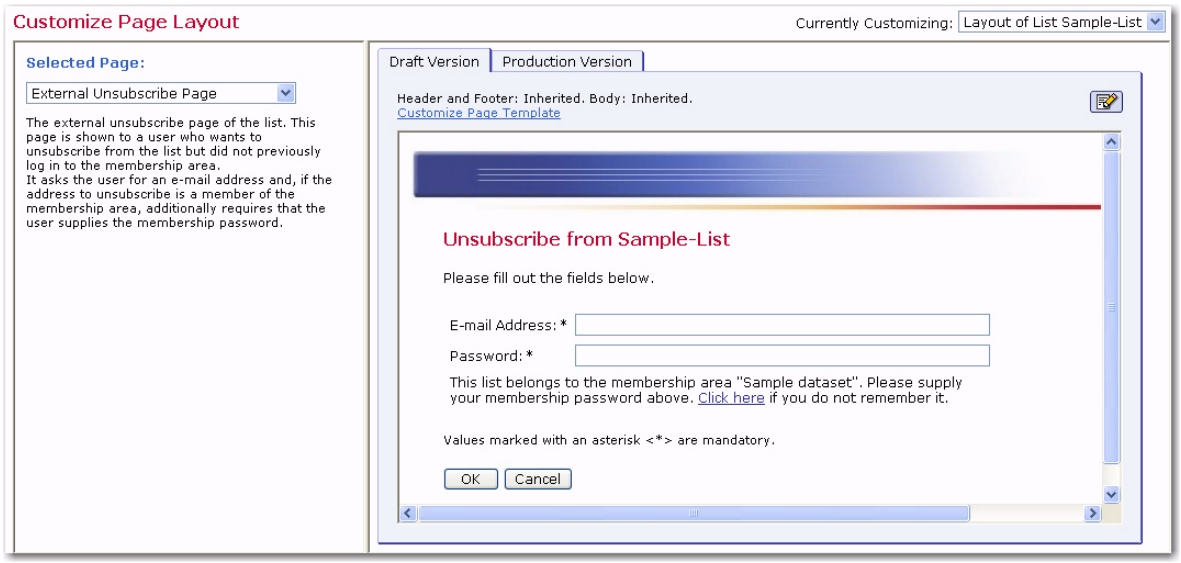
Various comments may also be displayed, giving further details about the current list page. All list pages consist of three parts – the outer header/footer, the page body, and the inner list fields. It is possible to customize each page on three levels.

- Inherit the header/footer and the page body from the list template and customize only the inner list fields.
- Inherit the header/footer from the list page and customize the body, including the inner list fields.
- Customize the whole page, including header/footer, body, and inner list fields.

Additional controls may also appear, allowing you to simulate certain system states so you can verify their impact on the actual preview. These controls vary depending on the layout element selected, and only a few elements offer them. For information on these controls, please see the online help.

Figure 11-4 Customizing the Layout of a List



Note: Previously, unsubscribing from a list required either logging in to the membership pages or clicking on an unsubscribe link in a message. New pages, which can be linked from any web page, have been added specifically for unsubscribing from lists without first logging into the membership pages. An example of this page is shown above, and can be customized to meet your needs.

11.1.2 Selecting a Subscriber Page

To start customizing a subscriber page, click on either the dataset name or the list name (in the right pane of the Recipient Dataset Details screen), and then click the **Select a page** link.

11.1.2.1 Customizing Subscriber Pages for a Dataset

Once you've selected to customize a subscriber page for a dataset, then the Membership Area Layout tab refreshes and displays a list of all customizable layout elements. The layout elements are divided into three tables – Templates, Pages, and Subscriber

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Notification Mails. Each table lists the available elements and displays their current customization status:

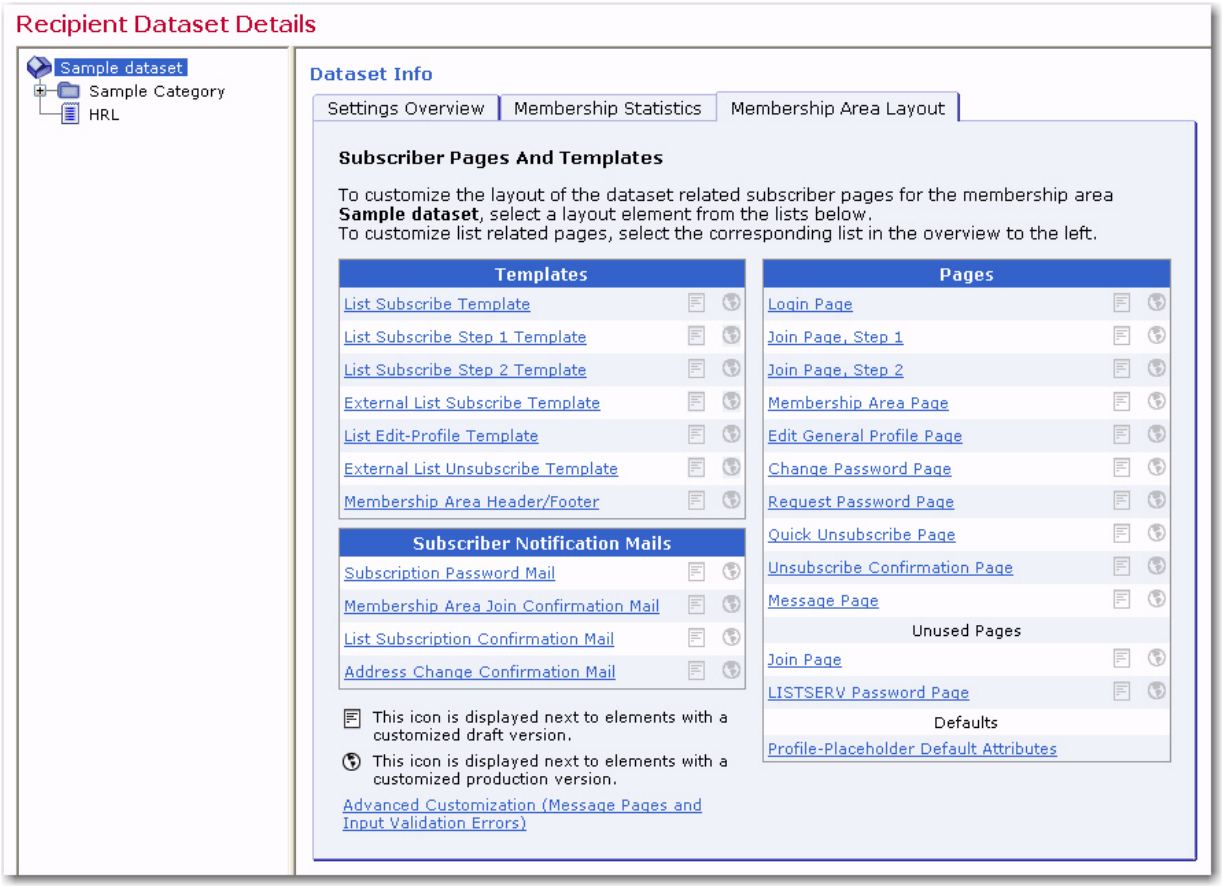
- The draft version of the layout element is not customized.

- The draft version of the layout element is customized.

- The production version of the layout element is not customized.

- The production version of the layout element is customized.

Figure 11-5 Selecting a Subscriber Page for a Dataset



To start customizing a layout element, simply click on it.

If at least the draft or production version of a layout element is customized (or both), then either an equals or not equals sign is displayed between the two icons. This lets you know whether or not the current draft version is equal to the current production version. If both versions are not customized, then the equals-sign is not displayed because the two versions are the same.

If you have at least one layout element in the dataset where the draft version is different than the current production version, then the **Deploy** icon allows you to deploy all these draft versions at once (either the ones in the dataset itself or all draft versions in the dataset and all its lists).

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For some customization placeholders (that you can use on customized pages), it is possible to provide certain attributes that determine how each placeholder will be rendered on the final HTML page. For these placeholders, it is also possible to define which attributes shall be used by default (i.e. on all pages that do not define individual attributes for their placeholders). Click the **Profile-Placeholder Default Attributes** link at the bottom of the Pages table to define these defaults. For more information, please see the online help.

If the customized versions of some pages are no longer compatible to the dataset, then the following additional icons may be displayed instead of the icons explained above:

- The draft version of the page is customized, but the customized version is no longer compatible with the dataset. Therefore, before you can view (or deploy) the current customized draft version, you will have to make it compatible to the dataset again.

- The production version of the page is customized, but the customized version is no longer compatible with the dataset. Therefore, the system has automatically modified the customized production version to make it compatible again (and has saved a backup copy of the original customized production version).

If the customization of any page is currently incompatible to the matching dataset, then the tab also displays an additional notification message about this fact and contains a link to a page where you can view (and access) all incompatible pages.

11.1.2.2 Customizing Subscriber Pages for List

Once you've selected to customize a subscriber page for a list, then the Membership Area Layout tab refreshes and displays a list of all customizable layout elements. The layout elements are divided into two tables – Pages and Matching Templates.

Note: The Pages table contains the actual layout elements that can be customized for the selected list, while the Matching Templates table contains the layout elements of the dataset that the list belongs to. However, since the list pages by default make use of these templates, the templates have been included for convenience.

Each table lists the available elements and displays their current customization status:

- The draft version of the layout element is not customized.

- The draft version of the layout element is customized.

- The production version of the layout element is not customized.

- The production version of the layout element is customized.

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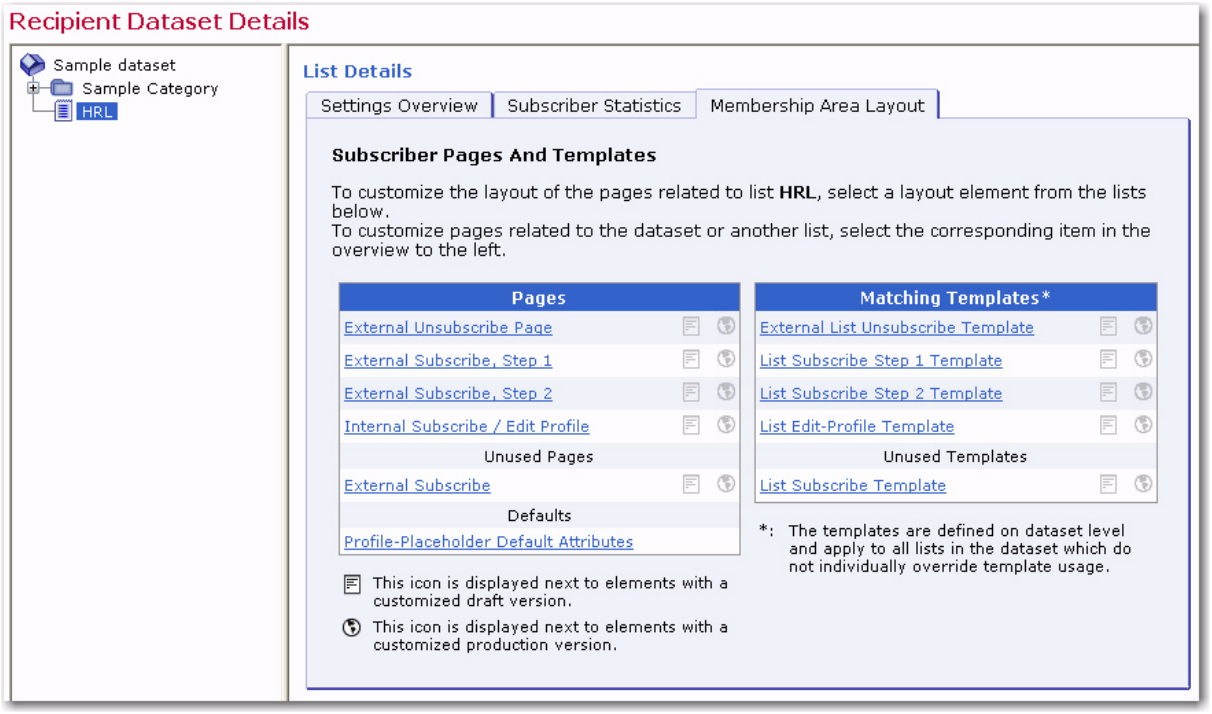
Figure 11-6 Selecting a Subscriber Page for a List



To start customizing a layout element, simply click on it.

If at least the draft or production version of a layout element is customized (or both), then either an equals or not equals sign is displayed between the two icons. This lets you know whether or not the current draft version is equal to the current production version. If both versions are not customized, then the equals-sign is not displayed because the two versions are the same.

If you have at least one layout element in the list where the draft version is different than the current production version, then the **Deploy** icon allows you to deploy all these draft versions at once (either the ones in the dataset itself or all draft versions in the dataset and all its lists).

For some customization placeholders (that you can use on customized pages), it is possible to provide certain attributes that determine how each placeholder will be rendered on the final HTML page. For these placeholders, it is also possible to define which attributes shall be used by default (i.e. on all pages that do not define individual attributes for their placeholders). Click the **Profile-Placeholder Default Attributes** link at the bottom of the Pages table to define these defaults. For more information, please see the online help.

If the customized versions of some pages are no longer compatible to the list, then the following additional icons may be displayed instead of the icons explained above:

- The draft version of the page is customized, but the customized version is no longer compatible with the list. Therefore, before you can view (or deploy) the current customized draft version, you will have to make it compatible to the list again.

- The production version of the page is customized, but the customized version is no longer compatible with the list. Therefore, the system has automatically modified the

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customized production version to make it compatible again (and has saved a backup copy of the original customized production version).

If the customization of any page is currently incompatible to the matching list, then the tab also displays an additional notification message about this fact and contains a link to a page where you can view (and access) all incompatible pages.

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Section 12 Introduction to Recipient Target Groups

The data administrator account can simplify and streamline the use of data sources, including databases, uploaded text files, and email lists, to select recipients and recipient data to the point where end users do not need to know anything about how and where data is stored. To do this, the data administrator creates predefined recipients lists, complete with a name and description, called Recipient Target Groups.

Users can choose among these target groups to select the recipients for their jobs. The data administrator builds the recipient target groups by writing SQL statements to retrieve data from a database, a data source such as a spreadsheet, or in the case of hosted recipient data, building a query using the LISTSERV Maestro interface. The data administrator also designs the methods end users employ to select the data (in a series of check boxes, drop-down menus, and/or text boxes).

There are many advantages to using recipient target groups.

- Using recipient data stored in a database can save time and system resources.
- The database can be continually updated until the time the job is sent, ensuring that the most current data is used for the job.
- Recipient target groups are shared among group members and can be reused for multiple jobs.
- Parameters can be inserted into recipient target groups so that end users have some control over what recipients are retrieved for each job. Using parameters reduces the number of individual queries that need to be written for jobs.
- The data administrator does not need to be involved with any other parts of email jobs.
- Specific recipient target groups can be removed from use without deleting them. They can be reinstated whenever desired.
- Recipient target groups can be organized into categories for easy recognition.

12.1 Creating Recipient Target Groups

To create recipient target groups, the data administrator must first log into his/her account. Recipient target groups are created and saved in the Recipient Warehouse. To create, click **Recipient Warehouse** > **New Recipient Target Group**, and then select the type of target group you want to create. To view alist of targets groups, click **Recipient Warehouse** > **Recipient Target Groups** to open the Recipient Target Groups screen. This screen lists all defined target groups (if any) and provides a wizard to create new target groups.

The Recipient Target Groups screen shows the list of target groups in the selected category. Choose the category to view from the **Category** drop-down menu. The table below will then be refreshed to show all target groups in that category.

Target groups not assigned to a specific category will be displayed under <No Category> in the drop-down menu. Target groups automatically created by the system for hosted lists will be displayed under <Hosted Lists Default Target Groups>.

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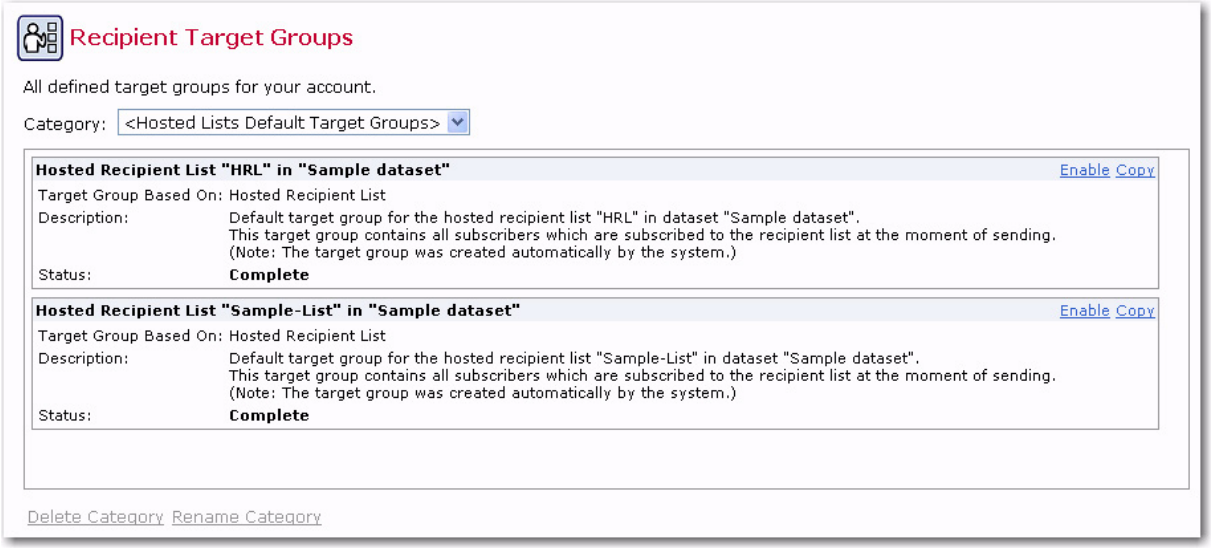
Figure 12-1 Recipient Target Groups



Each target group is displayed with the following information:

- **Name** – The name of the target group. The name is a clickable link used to open the target group for editing in the Target Group Definition wizard for all target groups except those listed under <Hosted Lists Default Target Groups>. In order to edit target groups for hosted lists, they first must be copied (see below).
- **Copy** – Click to create a new target group as a copy of the selected one. The name of a copied target group will be listed alphabetically as "*Copy of 'original name'*". This name can be changed when editing the target group. When a hosted list default target group is copied, the copy is placed in the <No Category> category. The category may be changed by engaging the Target Group Definition wizard.
- **Delete** – Click to delete the selected target group.
- **Target Group Type** – Displays the type of the data the target group is based on. Currently five types are supported:
    - Hosted Recipient List
    - Classic LISTSERV List
    - Uploaded Text File
    - Database accessed by LISTSERV Maestro
    - Database accessed by LISTSERV (see Section 12.2 Selecting the Type of Target Group for more details).
- **Description** – The description of the target group. It is important to create an accurate description of the type of data being retrieved so that end users will be able to select an appropriate target group for their email jobs.
- **Status** – The current status of the target group:
    - **Incomplete** – This target group has not yet been completed. It may be partially defined and remain in this state while the target group administrator edits it.

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- **Complete** – This target group has been completed, but the target group has not been enabled for use. A target group in this state has been completed by the data administrator, or automatically created by the system for hosted lists, but is not open for users to select it for recipient definition.
- **Enabled** – This target group has been completed and has been enabled for use in the Define Recipients wizard. A target group in this state is complete and has been enabled for use as a recipient definition.

Below the list that displays the target groups in the selected category are links to manipulate the category itself:

- **Delete Category** – Allows the currently selected category to be deleted. Only available if the current category is empty. Not available for <No Category> or <Hosted Lists Default Target Groups>.
- **Rename Category** – Allows the name of the currently selected category to be changed. Not available for <No Category> or <Hosted Lists Default Target Groups>.

12.2 Selecting the Type of Target Group

To create a new target group, click **Recipient Warehouse** > **New Recipient Target Group**. Next, select one of the five options for creating a new target group. The Target Group Definition wizard will initiate the process of creating the new target group. Wizard pages will be different for the different types of target groups. Each target group type is described below:

- **Hosted Recipient List** – This target group is based on a hosted recipient list. The target group wizard will display all the datasets and their respective hosted recipient lists. Once a list is selected, the wizard will allow for conditions and parameters to be set in order to segment the list.
- **Classic LISTSERV List** – This target group is based on the **Send to an Existing LISTSERV List** recipient type in the Define Recipients wizard. (For more information, see Section 4.2 Send to an Existing LISTSERV List in the LISTSERV Maestro User's Manual.) When this target group is selected, the Target Group Definition wizard will display all available LISTSERV lists on the server assigned to the account group. Select a list from the drop-down menu, and then select the type of LISTSERV message to send – standard or mail merge.
- **Uploaded Text File** – This target group is based on the **Upload a Recipients Text File** recipient type in the Define Recipients wizard. (For more information, see Section 4.5.Upload a Recipient's Text File in the LISTSERV Maestro User's Manual.) The Data Administrator can upload the file into the system while defining the target group, storing the recipients at that time, or set up a server file to be uploaded just before the job is delivered.
- **Database accessed by LISTSERV Maestro** – This target group type is based on the **Select Recipients from a Database** recipient type in the Define Recipients wizard. (For more information, see Section 4.6 Selecting Recipients From a Database in the LISTSERV Maestro User's Manual.) When this target group type is

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selected, the Target Group Definition wizard will require that a database connection, a SQL statement, merge column headers, and duplicate elimination be entered, the same way as when using the underlying recipient type in the Define Recipients wizard. Optionally, the SQL statement may be parameterized. Using parameters in the SQL statement allows the user to fill in values to be used for segmenting the recipients when this target group is used for a recipient definition. For more information on using parameters, see Section 18 Defining Parameters.

- **Database accessed by LISTSERV** – This target group type is based on the **Let LISTSERV Select Recipients From a Database** recipient type in the Define Recipients wizard. For more information on this part of the Define Recipients wizard, see Section 4.7 Letting LISTSERV Select Recipients From a Database in the LISTSERV Maestro User's Manual. When this target group type is selected, the target group wizard will require that a database name, a SQL statement, and merge column headers be entered, the same way as when using the underlying recipients type in the recipients wizard. Optionally, the SQL statement may be parameterized. Using parameters in the SQL statement allows the user to fill in values to be used for segmenting the recipients when this target group is used for a recipient definition. For more information on using parameters, see Section 18 Defining Parameters.

12.3 The Target Group Definition Wizard

The Target Group Definition wizard takes the data administrator through all of the steps necessary to define the settings of the target group. The top row of the wizard displays links to each of the steps necessary to complete the wizard. The current step is marked with a highlighted background. Depending on the choices made on some of the wizard screens, other screens may become disabled or be displayed differently. If a wizard step is disabled, it means that the step is not necessary with the current selections and can be safely ignored.

When the wizard is entered for the first time for a newly created target group, it is necessary to click **[Finish]** or **[Save & Exit]** in the wizard to create the target group. A new target group will not be created if the wizard is terminated by clicking **[Cancel]**, clicking any of the navigational icons, or by closing the browser.

For an existing target group, if the wizard is exited by clicking **[Cancel]**, clicking navigational icons, or closing the browser, then the target group will still exist, but all changes made since the last save will not be applied.

The **[Finish]** button is only available on the Summary screen of the wizard. The Summary screen only becomes available if the entire wizard is completed. If the wizard is closed by clicking **[Finish]**, then the target group will exist in the **Complete** or in the **Enabled** state, depending on whether the **Yes, allow the definition of recipients based on this target group** checkbox on the Summary screen was selected or not.

The **[Save & Exit]** button is available on every screen. Clicking this button saves the current state of the wizard, allowing the data administrator to re-enter the wizard and complete the definition. This will put the target group in any of the three states – **Incomplete**, **Complete**, or **Enabled**, depending on whether all screens in the wizard were completed, and if the **Yes allow the definition of recipients based on this target group** checkbox on the Summary screen was selected or not.

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A completed target group may be enabled at any time by entering the Target Group Definition wizard, and going directly to the Summary screen (click on the **Summary** link at the top of the page). On the Summary screen, check **Yes, allow the definition of recipients based on this target group**.

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Section 13 Hosted Recipient List Target Groups

Recipients for this type of target group are derived from lists that have their recipients stored (hosted) in LISTSERV Maestro. Once any type of list is created from a dataset and the first recipient has been added, a default target group is automatically generated by the system. This default target group contains all of the list subscribers. These target groups are located in a special category named <Host Lists Default Target Groups>. They are named using the phrase "*Hosted Recipient List*" followed by the name of list.

Although the target group is automatically created, it must be enabled in order for it to be used in the recipient definition of a mail job. Click the **Enable** link in the upper right corner to allow the target group to be used.

Unlike other types of target groups, the name of a hosted list default target group is not a clickable link that engages the Target Group Definition wizard. In order to manipulate an automatically generated target group, click the **Copy** link in the upper right corner to make a copy. The copy acts like a regular target group, with a clickable name that will access the wizard. Target groups based on hosted recipient lists can also be created from scratch by using the Target Group Definition wizard as described below.

Tip: It can be faster to make a copy of an existing target group and edit it than to create a new one from scratch.

To create a new hosted recipient target group, click **Recipient Warehouse** > **New Recipient Target Group** > **Based on Hosted Recipient List**.

13.1 General

The general characteristics of the target group consist of a name, a category, and a description. This information will be used by end users to locate and identify the target groups they want to use for jobs. Both name and description are mandatory. Enter a meaningful name and a good description so the end users who are selecting target groups in the Define Recipients wizard will have all the information they need to decide which target group to use.

Target groups can be clustered in categories, making it easier for users to select a target group. A category is meant to contain target groups that are related to each other. The intent of categories is to minimize the time needed to locate a specific target group. By selecting a category first, users do not need to browse through all the available target groups, but only those in the relevant category.

To add a target group to a category, select the category for the target group from the drop-down menu. To create a new category, click the **New Category** link and define a new category. Target group categories are optional. If no category is selected or created, target groups are placed into the <No Category> category by default.

Once you're finished entering the information for the target group, click **[Next ->]** to continue.

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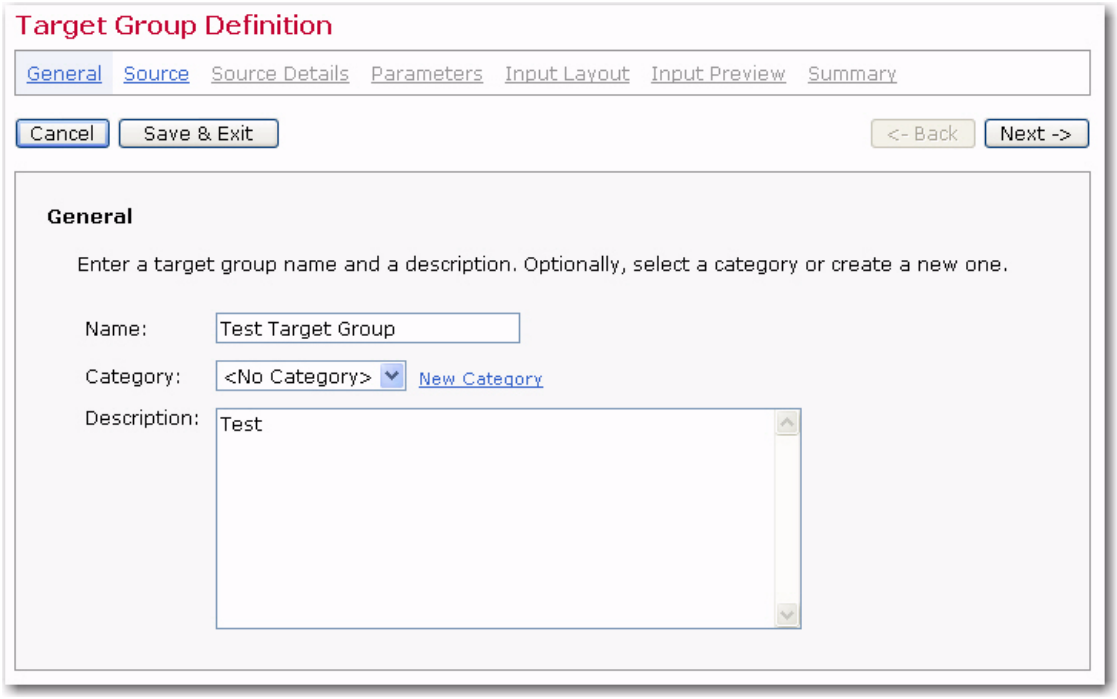
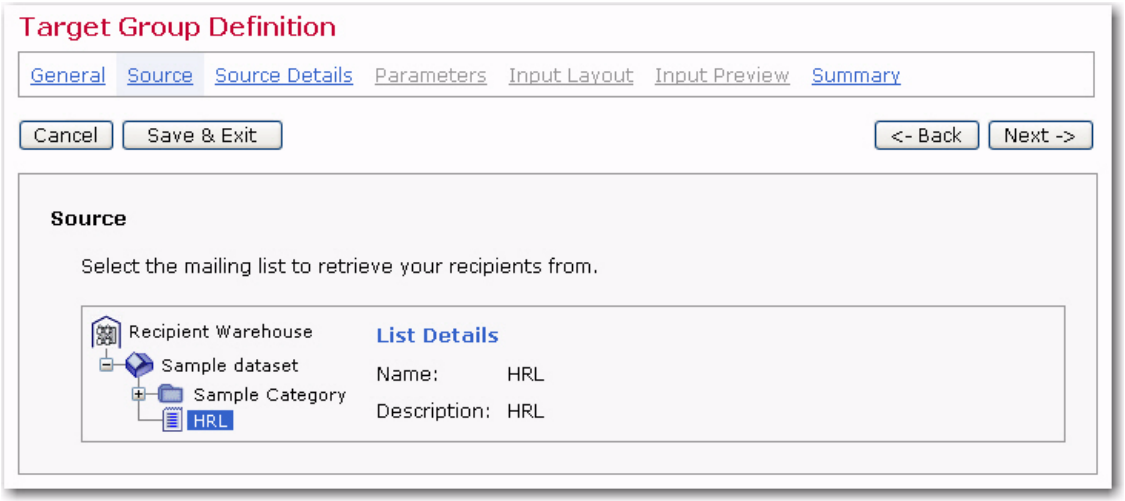
Figure 13-1 The Target Group Definition Wizard – General Screen for Hosted Lists



13.2 Source

The Source screen displays all the datasets in the Recipient Warehouse. Select the dataset and the list from which to retrieve the recipients. To open a dataset, simply click on the plus sign "+". If there are categories within the dataset, then click on the plus sign to expand the category to see the available lists.

Figure 13-2 The Target Group Definition Wizard - Source Screen for Hosted Lists



Once you're finished selecting the dataset and list, click **[Next ->]** to continue.

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13.3 Source Details

The Source Details screen can be used to segment the list's subscribers by setting conditions to pull certain recipients from the list. Conditions are based on the fields of data in the dataset and operators that select specific recipients based on their data. Multiple fields of data can be used along with combined operators to fine tune which messages are sent to specific sets of recipients.

By selecting conditions and operators, the Data Administrator builds the query that will be submitted to the dataset to pull recipients from the dataset. Like other queries in the Target Group Definition wizard, they can be parameterized so that end users can fill in the details of the selection criteria. See Section 18 Defining Parameters for more information.

The Source Details screen defaults to opening with an AND operator in place after the list name. To set a list subscriber condition it is possible to change the operator, add a condition, add a job based condition, add a combination operator or copy a combination operator. As operators and conditions are selected, a diagram displays the selections and the SQL query is displayed below. Click on the **Actions on Selected Node** link to select an action type:

- **Change Operator Type** – Changes the operator type. Select the operator from the drop-down menu and then click OK to accept the change or Cancel to disregard the selection. Available operators are:
    - Combines with AND
    - Combines with OR
    - Combines with AND, then negate the result
    - Combines with OR, then negate the result

  For more information on how operators act, see Appendix D: Building Hosted Recipient Queries.
- **Add Condition** – Adds a condition based on a field, a number, a text string, a Boolean value, or the value of a formula. Depending on the choice, different information is required to build the query. Parameters can be used so that end users have more flexibility to select targeted recipients. For more information, see Appendix D: Building Hosted Recipient Queries.
- **Add Job Based Condition** – Job based conditions are used when building a target group based on a reaction to a previous job. This is similar to the **Based on a Previous Job** recipient type in the Define Recipient wizard. Select whether the recipients were part of the original source job, and if so, what tracked behavior did they perform, or whether the recipients were not part of the original source job.
- **Add Combination Operator** – Adds another operator to the condition tree. Available operators are:
    - Combines with AND
    - Combines with OR
    - Combines with AND, then negate the result

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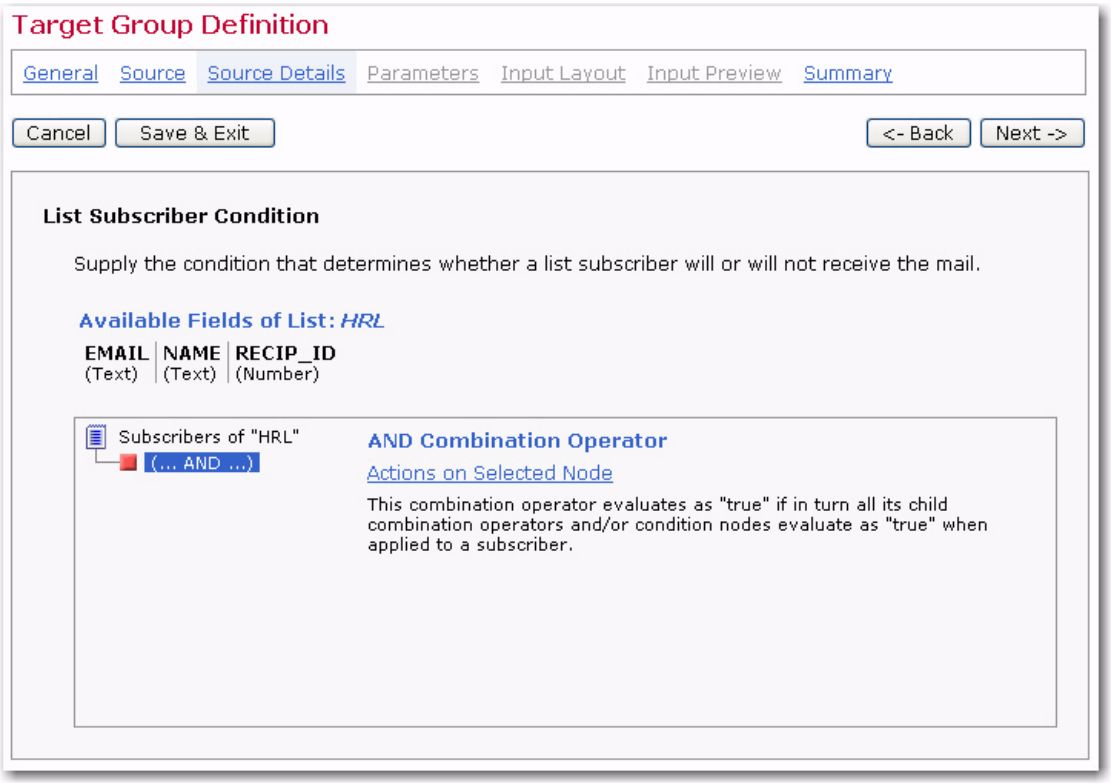
• Combines with OR, then negate the result

For more information on how operators act, see Appendix D: Building Hosted Recipient Queries.

- **Copy** – Copies the selected combination operator.

Figure 13-3 The Target Group Definition Wizard - Source Details Screen for Hosted Lists



Once you're finished setting conditions for the list, click **[Next ->]** to continue.

13.4 Parameters

The Parameters screen only becomes active if there are parameters in the target group. Click on each condition to define the parameter label and description. This text will appear when employing the target group for a recipient definition.

Once you're finished entering the details for each parameter, click **Next ->** to continue.

13.5 Input Layout

The Input Layout screen will only become active if there are parameters in a target group and they have been labeled on the previous screen. If there are multiple parameters, the order in which they appear to end users may be reordered by using the **Up** and **Down** links.

To provide end users with more information on the parameters, optional headings can be added to each parameter or a group of parameters. Click the **New Heading** link to add a

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heading and optional introductory text. Click the **[Save Entry]** button to save headings and introductory text. Use the **Delete Heading** link to remove a saved heading.

Once you're finished entering any parameter details, click **[Next ->]** to continue.

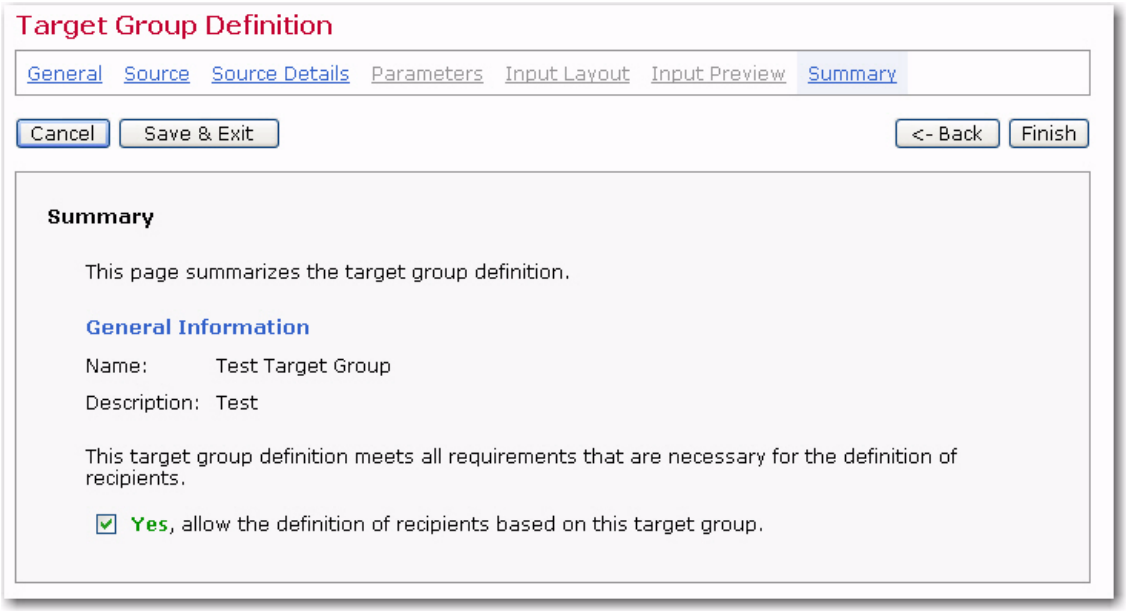
13.6 Input Preview

The Input Preview screen only becomes active if there are parameters in a target group and the Input Layout screen has been successfully completed. A preview of the parameter input page as end users will see it is generated here. Verify that the layout is acceptable. If it is acceptable, click the **[Next ->]** button. If it is not, then click the **[<- Back]** button to return to previous pages in the wizard to make changes.

13.7 Summary

The Summary screen displays the target group definition, conditions, and parameters. In order for users to access the target group when defining recipients for a mailing, it must be enabled. Check **Yes, allow the definition of recipients based on this target group** to enable it. If left unchecked, the target group will not appear in the list of available target groups to end users.

Figure 13-4 The Target Group Definition Wizard - Summary Screen for Hosted Lists



Click **[Finish]** to save the target group and return to the Recipient Target Groups screen.

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Section 14 Classic LISTSERV List Target Groups

This target group type is based on the **Send to an Existing LISTSERV List** recipient type in the Define Recipients wizard. Multiple screens guide the data administrator through defining a recipient target group using LISTSERV Maestro to select recipients from a LISTSERV List.

To create a new hosted recipient target group, click **Recipient Warehouse** > **New Recipient Target Group** > **Based on Classic LISTSERV List**.

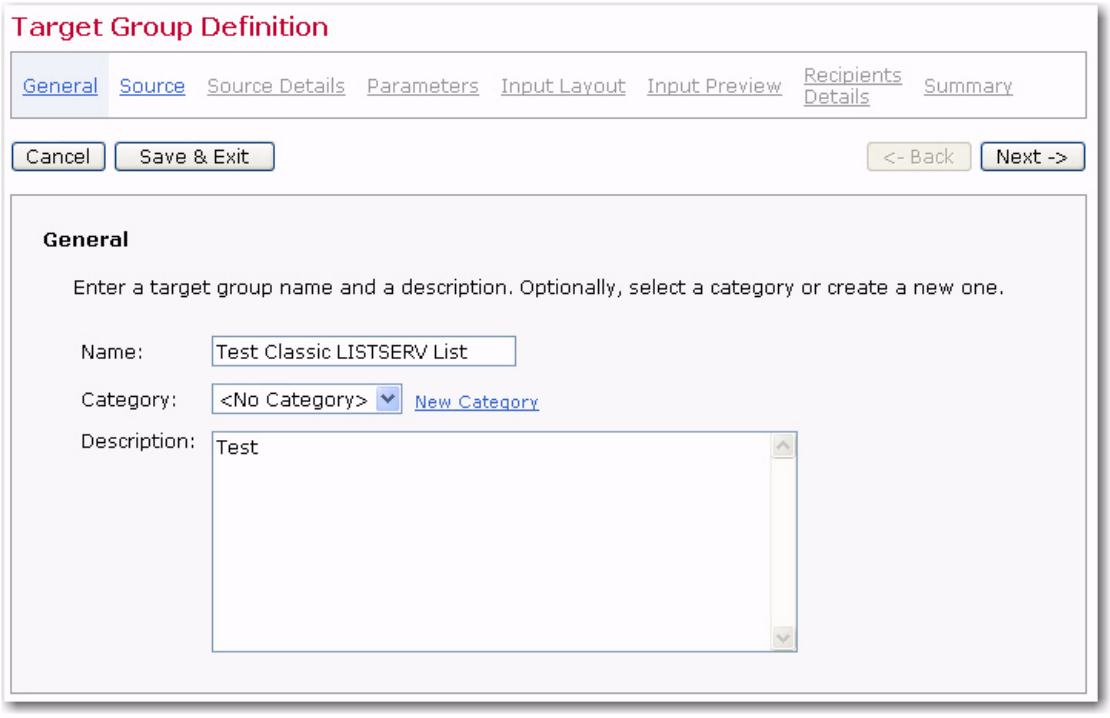
14.1 General

The General screen in the wizard defines the name, category, and description of the target group. Both name and description are mandatory. Enter a meaningful name and a good description so the users who are selecting target groups in the Define Recipients wizard will have all the information they need to decide which target group to use.

Target groups can be clustered in categories, making it easier for users to select a target group. A category is meant to contain target groups that are related to each other. The intent of categories is to minimize the time needed to locate a specific target group. By selecting a category first, users do not need to browse through all the available target groups, but only those in the relevant category.

To add a target group to a category, select the category for the target group from the drop-down menu. To create a new category, click the **New Category** link and define a new category. Target group categories are optional. If no category is selected or created, target groups are placed into the <No Category> category by default.

Figure 14-1 The Target Group Definition Wizard – General Screen for Classic LISTSERV Lists



Once you're finished entering the information, click **[Next ->]** to continue.

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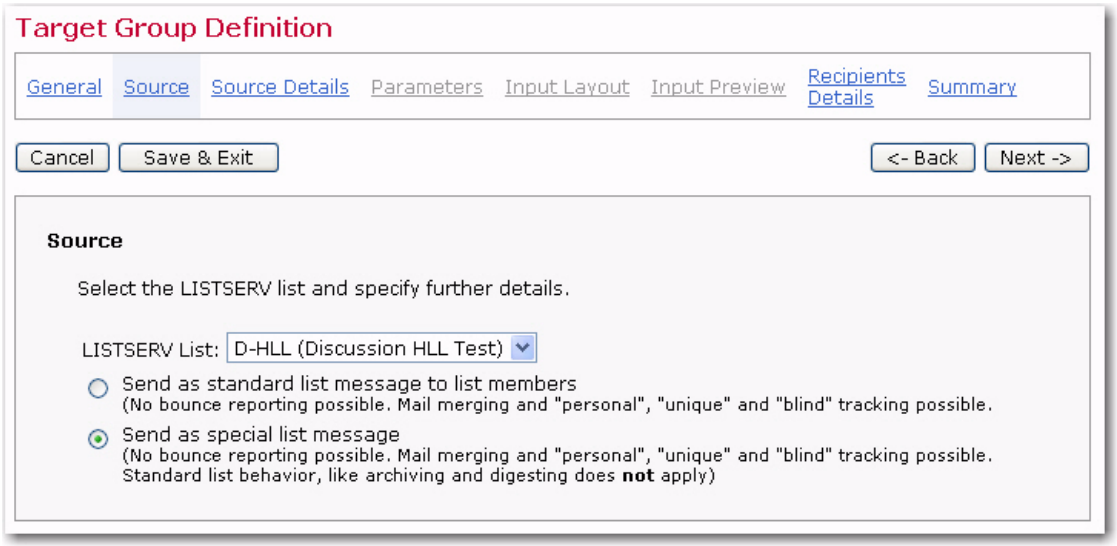
14.2 Source

The Source screen lets you select the LISTSERV list and specify any additional information. Select the LISTSERV list for the drop-down menu. Next, select the type of message by selecting **Send job as standard list message to list members** or **Send as special list message**. Standard list messages are sent to the list subscribers just as a normal list posting would be from a list subscriber or editor. The message will be archived if there are list archives, and the message will be available for list digests.

Special list messages are what LISTSERV calls a “distribute job”. Mail merging is possible by using special substitution placeholders created by surrounding the names of the data fields (column headers) associated with the list with an ampersand “&” at the beginning and a semi-colon “;” at the end, for example `&INDUSTRY;`. Special list messages do not go into the archives or digests.

Figure 14-2 The Target Group Definition Wizard – Source Screen for Classic LISTSERV Lists



Click **[Next ->]** to continue. If the job is sent as a standard list message to a list with no topics defined, the wizard will skip to the Summary screen. If the job is sent to a list with topics or as a special list message, the wizard will continue with additional pages.

14.3 Source Details

The Source Details screen will appear differently depending on the type of message being sent. Standard list messages for lists that have topics will need to select the topic or topics. Special list messages will need to select options and decide whether to set conditions that can segment the list based on the existing subscriber data.

14.3.1 Standard List Messages with Topics

Active LISTSERV lists often use "sub-groups" within the list to give subscribers the opportunity to receive only the posts they are most interested in and not receive all the list mail. Sub-groups are created in LISTSERV by defining the keyword `Topics` in the list header. If the LISTSERV list was created in LISTSERV Maestro, topics are defined within the List Definition wizard.

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Lists can have up to 23 topics. List subscribers can elect to receive only those messages that fit into the topic(s) they are interested in reading. Similarly, list members can post their messages to only those topics their messages are relevant to, if subscribers are allowed to post to the list. For example, a list could have the general subject of Software Development. Topics could be defined by operating system, type of software, or type of development. For more information on Topics, see the LISTSERV List Owner's Manual.

Select the way that topics will be used in the target group definition from these options:

- **Send only to subscribers with the following topics** – The message will be sent only to those list subscribers that selected any of the checked list topics.
- Expose the topics as parameters so that end users can select which topic or topics to use in their job definitions.
- Use topics as selected above.
- **All subscribers, ignore topics** – The message will be sent to all list subscribers regardless of their topic selections.
- **Send to subscribers with no topics or with the OTHER topic** – The message will be sent to list subscribers who have no topics selected or with the “OTHER” topic.

Click the **Select Topics** link to open the Topics Selection screen. From here, you can choose which topics to use. Also, you can hide or expose the selected topics in the subject line of the message by selecting the corresponding option. If the list subscribers are aware of the topics and are accustomed to using them (for example, if they set up filters in their email clients to move list messages to different folders depending on the topic), then consider exposing the topics in the subject line. However, if there are many topics selected for the message, a rather lengthy subject line will result. In this case, consider hiding the topics from the recipients. Hiding topics can also be useful if the topics are only used to sub-divide the list and are not used by the recipients. Topics will be defined in an email “X-header” so they will be revealed to recipients who choose to view the (usually hidden) email headers in their email clients.

14.3.2 Special List Messages

There are four options for a LISTSERV list that can be set by checking the adjacent boxes. The options are standard LISTSERV settings that subscribers may have set for their subscriptions.

- MAIL – Will deliver the message to all normally subscribed users.
- DIGEST – Will deliver the message to users that receive only a digest.
- INDEX – Will deliver the message to users that receive only a topics index.
- NOMAIL – Will deliver the message to users that currently receive no mail.

Setting a condition is a means of creating a subset of recipients from the selected LISTSERV list based on the email address, or, in the case of DBMS backed or LISTSERV hosted lists, other information in the list’s database table. Conditions begin with an ampersand “&” followed by the name of the data column (header) and contain an operator such as equal to “=” or less than “<” and finally the value to be assessed. For

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example, a LISTSERV list could set the condition of sending mail to all those subscribers who own a dog or cat. This condition would look similar to this:

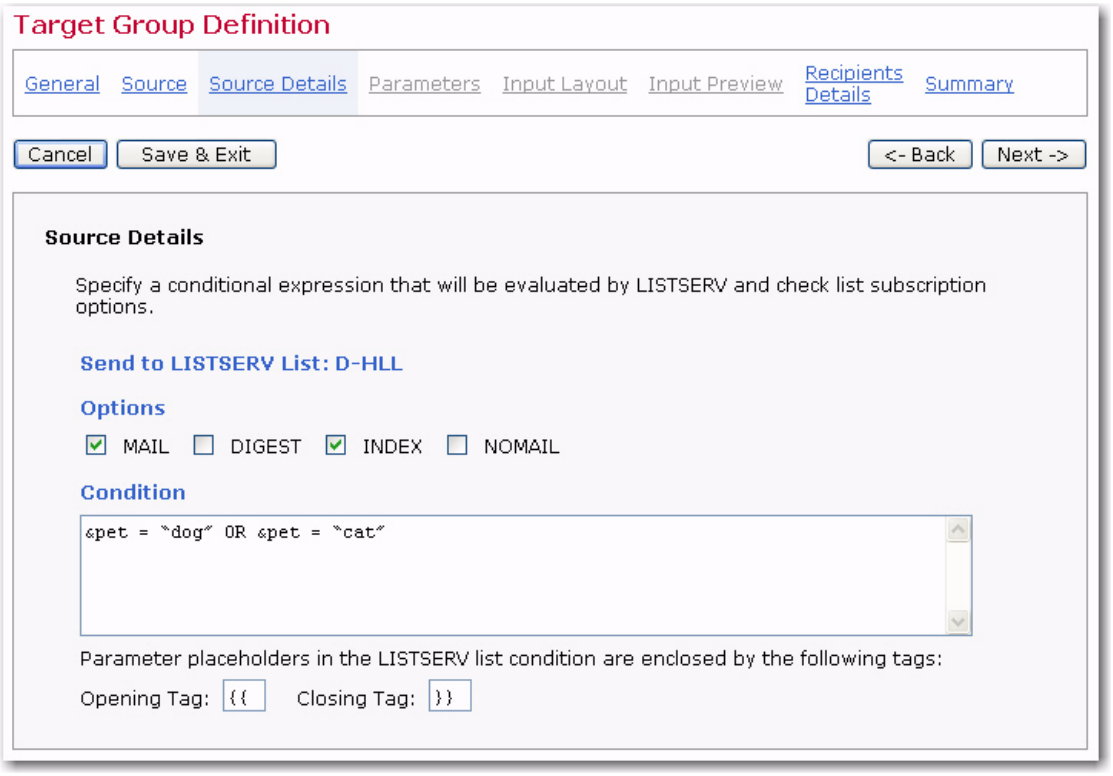
```
&pet = "dog" OR &pet = "cat"
```

Conditions may use parameters that are then filled out by users when they define the recipients of email jobs. The condition in the example above containing parameters could look like this:

```
&pet = "{{pet_type}}" OR &pet = "{{pet_type}}"
```

The brackets denote a parameter name to the system. The text inside the brackets is the name of the placeholder that will be replaced by the selection made by the user when defining the recipients for a mail job. Setting parameters for a LISTSERV condition uses the same process as setting a parameter for an SQL query. See Section 18 Defining Parameters for further details. For information on setting conditions for a LISTSERV list, see the LISTSERV Developer's Guide, available online at http://www.lsoft.com/resources/manuals.asp

Figure 14-3 The Target Group Definition Wizard - Source Details Screen for a Special List Message



New **Special Note:** In a LISTSERV condition (target groups of the LISTSERV list type with the special list message defined), it is now possible to prefix the parameter name with the "text:" string, which will give the following result:

- A parameter that is immediately enclosed with quotes will be interpreted as a text-parameter.
- A parameter that is not immediately enclosed with quotes will be interpreted as a number-parameter unless the parameter name starts with "text:"; in which

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case, it will also be interpreted as a text-parameter.

Because of this, it is now possible to write

&*TO=* “*@{{text:domain_param}}”

and the “text:domain_param” parameter that is defined will be a text-parameter even though it is not immediately enclosed in quotes.

Once you’re finished setting up any conditions for the list, click **[Next ->]** to continue.

14.4 Parameters

The Parameters screen will only open if the target group is set up to send mail as a standard list message with the topics that are exposed as a parameter, or the target group is set up to send mail as a special list message containing a condition with parameters.

14.4.1 LISTSERV Topics as Parameters

A target group definition that uses the topics of a LISTSERV list as a parameter allows the users to select which topic(s) to use in the recipient definition of their email jobs. Fill out the parameter details by giving the parameter a label and a description. These will help users understand what they are selecting for their recipient definition. Select the input type, either a single select list or a multiple select list. Single select allows one topic choice from the drop-down menu; multiple select allows for more than one topic choice from the drop-down menu. Use the **Up** and **Down** links to shift the order of the topics in the drop-down menu.

Once you’re satisfied with the parameter details, click **[Next ->]** to continue.

14.4.2 Conditional Expression Parameters

Conditional expressions may have one or more parameters. Parameters that are highlighted in yellow are undefined; parameters appearing as normal links have already been defined. To select a parameter, simply click on it. Fill out the parameter’s initial definition, or edit an existing definition in the lower part of the screen. The definition of the parameters made here will affect the choices that the end user will have when using this target group in the Define Recipients wizard. For more information on creating parameters, and the different parameter types, see Section 18 Defining Parameters.

Once you’re satisfied with the parameter details, click **[Next ->]** to continue.

14.5 Input Layout

The Input Layout screen allows the data administrator to design how the recipient target group appears to end users. Headings and additional screen text can be added to further describe the choices users have among the different selections available in the target group. If there are multiple parameters, then they can be grouped under headings and their order can be arranged. The more description users have, the easier it will be for

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them to decide how to use the target groups to select the recipients they want for their email jobs.

14.5.1 Input Layout for LISTSERV Lists with Topics

Target groups sending standard list messages to lists with topics expressed as a parameter will only have the single parameter to describe to end users.

Once you're finished, click **[Next ->]** to continue.

14.5.2 Input Layout for LISTSERV Lists with Parameters in Conditions

Target groups sending special list messages to lists with conditions that have parameters may have one or more parameters to arrange and describe. Concise descriptions and intuitive layouts make using target groups easier for end users.

Once you're finished, click **[Next ->]** to continue.

14.6 Input Preview

The Input Preview screen reveals how the target group will appear to users when defining recipients. Use this screen to check the appearance of the target group and make selections that are run against the data.

Click the **[<- Back]** button to return to the Input Layout screen to make changes, or click the **[Next ->]** button to continue.

14.7 Recipients Details

The Recipients Details screen displays a view of details about the recipients and, in some cases, allows additional details to be supplied. In the case of hosted LISTSERV lists, no further data needs to be supplied and this screen is for informational purposes only.

For LISTSERV lists not hosted by LISTSERV Maestro, where mail merging is set in the list header and the list is DBMS backed, additional recipient fields can be added in the edit box, one column name per line. These column names can be used for mail merge placeholders in the body of the email message.

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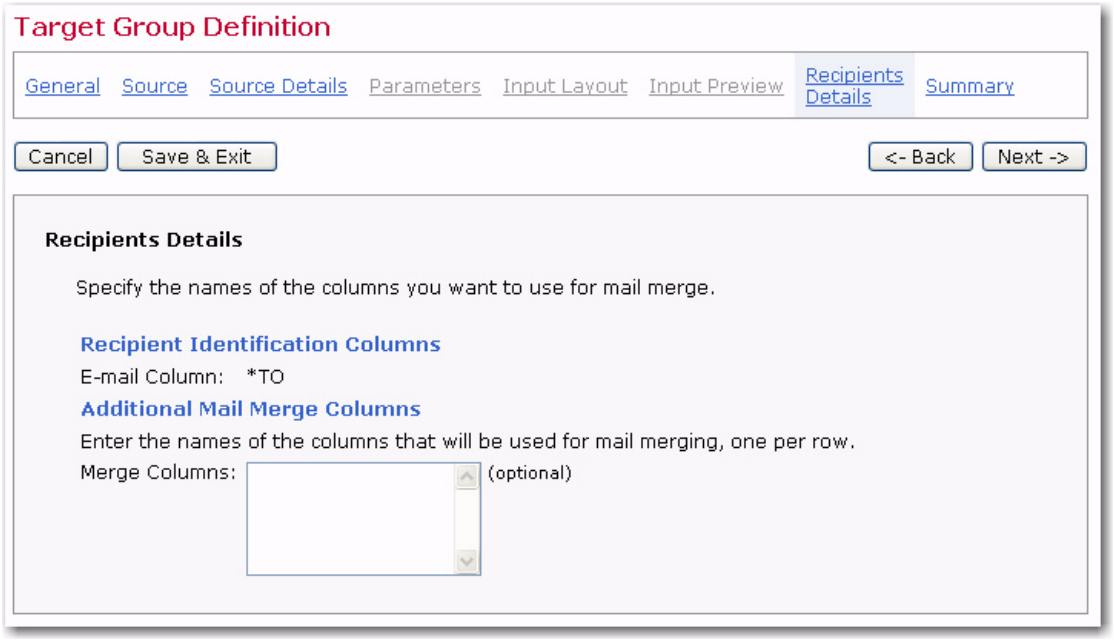
Figure 14-4 Recipient Details for Hosted LISTSERV Lists



Once you're finished, click **[Next ->]** to continue.

14.8 Summary

The Summary screen displays all the selections for the target group definition, listing conditions and parameters. In order for users to access the target group to define recipients for a mailing, it must be enabled. Check **Yes, allow the definition of recipients based on this target group** to enable it. If left unchecked, the target group will not appear in the list of available target groups in the Define Recipients wizard.

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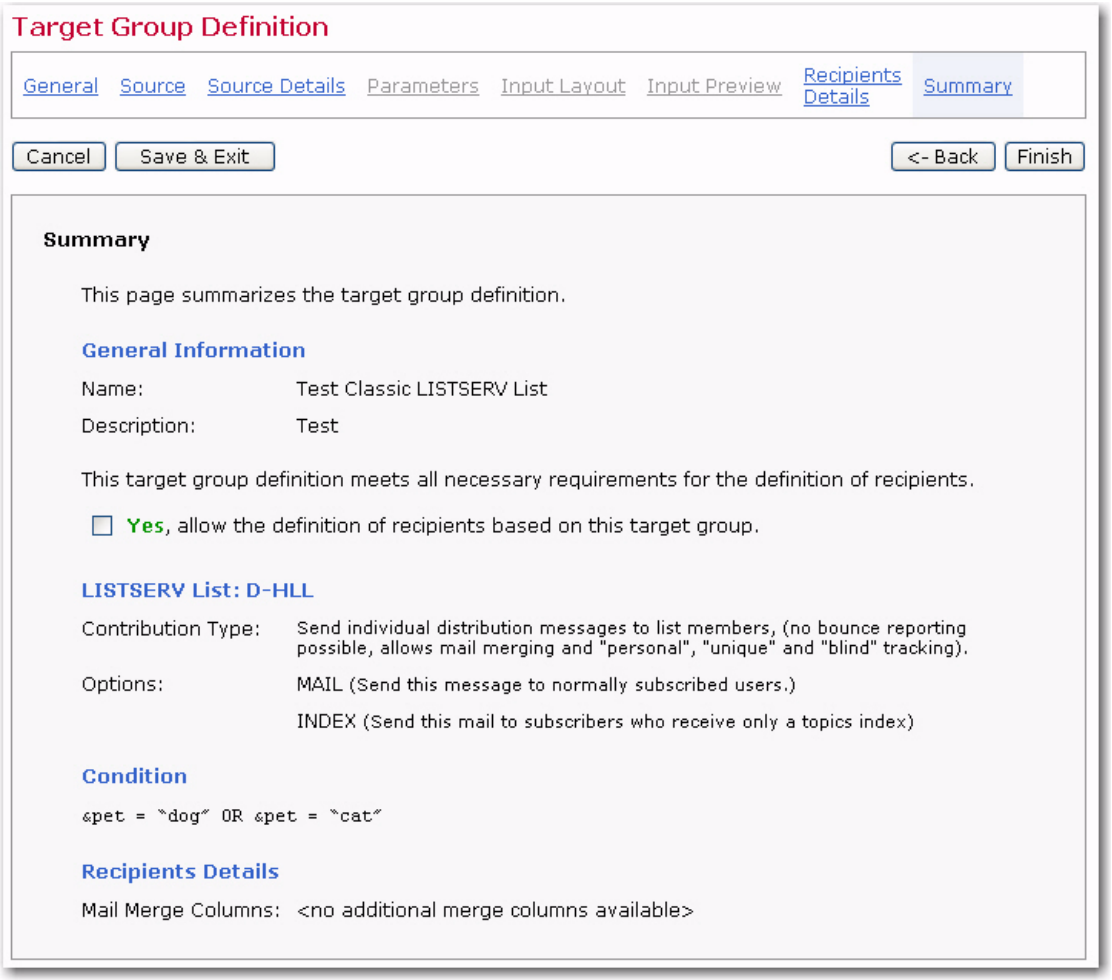
Figure 14-5 The Target Group Definition Wizard – Summary Screen for Classic LISTSERV Lists



Click the **[Finish]** button to complete the target group definition and return to the Recipient Target Groups screen.

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Section 15 Target Groups Based on an Uploaded Text File

This target group type is based on the **Upload a Recipients Text File** recipient type in the Define Recipients wizard. Multiple screens take the data administrator through the process of defining a recipient target group using LISTSERV Maestro to select recipients from an uploaded text file.

15.1 General

The general characteristics of the target group consist of a name, a category and a description. This information will be used by users to locate and identify the target groups they want to use for jobs. Both name and description are mandatory. Enter a meaningful name and a good description so the users who are selecting target groups in the Define Recipients wizard will have all the information they need to decide which target group to use.

Target groups can be clustered in categories, making it easier for users to select a target group. A category is meant to contain target groups that are related to each other. The intent of categories is to minimize the time needed to locate a specific target group. By selecting a category first, users do not need to browse through all the available target groups, but only those in the relevant category.

To add a target group to a category, select the category for the target group from the drop-down menu. To create a new category, click the **New Category** link and define a new category. Target group categories are optional. If no category is selected or created, target groups are placed into the <No Category> category by default.

15.2 Source

The Source screen for a target group based on an uploaded text file contains two options concerning when the recipients file will be uploaded to the system.

- Select **Define recipients now** to immediately upload a file from a local drive that will be the source of the recipients for the target group. Once the file is uploaded, the recipient definition is static, meaning it will not change between the upload time and the job delivery time. Every job that uses this target group will send to the exact same list of recipients. In order to update the list of recipients, the data administrator will have to update the definition of the target group and reload an updated file.

– OR –

- Select **Load recipients just before sending from a server file** to link to a file on the server running LISTSERV Maestro to become the source of the recipients for the target group just before the job is sent for delivery. This recipient definition is dynamic, meaning that the file containing the recipients can change between the time the target group is defined and the time the mail job is delivered. Each job using this target group may end up sending to different recipients if the file is updated on the server between jobs.

If you selected the **Define recipients now** option, then the **Upload a recipients file** link is enabled. Click the link to upload a text file from a local drive. Browse for the file on a

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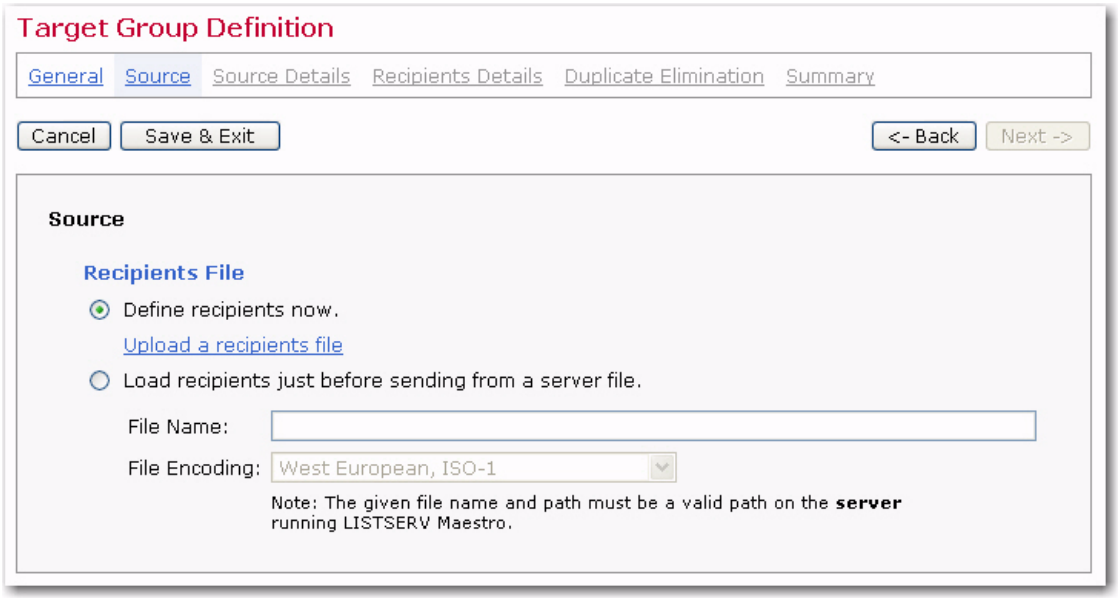
local drive and select the encoding for the file if necessary. For more information on encoding, see Appendix C: Email and International Character Sets.

Figure 15-1 Define Recipients from an Uploaded File



Once a file had been uploaded, information about that file will appear on the screen. The link to upload a file will change to **Upload a different file** after one file has been successfully uploaded to the system.

If you selected the **Load recipients just before sending from a server file** option, then enter the path and name of the file the recipients will be imported from at the moment just before the message is sent. The file must be on a valid path on the server running LISTSERV Maestro. The file must also be included in a list of files that can be accessed by LISTSERV Maestro. This list of permissible files is controlled by the system administrator and is necessary to maintain server security. See the LISTSERV Maestro Administrator's Manual for more information on granting access to server files. If the file is not available at the moment of sending, the job will fail.

In order to proceed with the next steps, it is necessary to have a file of the right name on the server. It does not have to be the final recipient file – it could contain just test recipients – but it needs to use the same formatting as the final file so that LISTSERV Maestro can determine how to import it correctly.

Click **[Next ->]** to continue or **[<- Back]** to return to the previous page.

15.3 Source Details

The Source Details screen parses the text file containing recipients for the target group. When a text file is uploaded, LISTSERV Maestro will try to determine how the columns of data are separated, and how each column or field of data is labeled (header). In order to create a target group, LISTSERV Maestro must correctly interpret which column contains the names of the recipients and which column contains the email addresses of the recipients. Other fields may be included and will appear in the results table located on the lower half of the screen.

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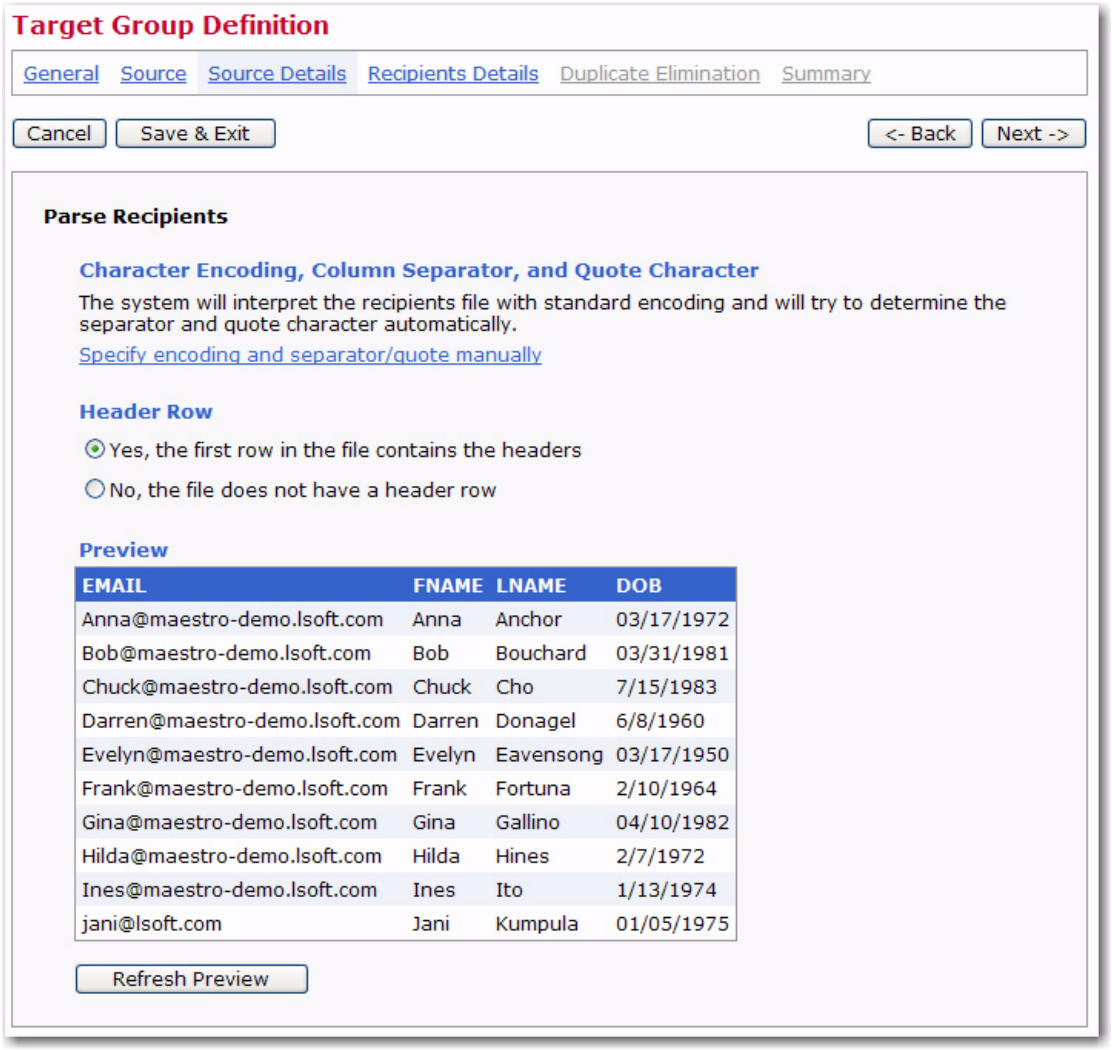
Figure 15-2 The Target Group Definition Wizard - Parse Recipients Screen for an Uploaded Text File



If the parsing is accurate with each column of data separated correctly and labeled with a header row, then click the **[Next ->]** button to continue.

If LISTSERV Maestro has not interpreted the data correctly, or an unconventional delimiter and/or quote character has been used, click on the **Specify encoding and separator/quote manually** link to configure the data manually.

Use the **Specify encoding and separator/quote manually** link when the delimiter (separator character) or the quote character is used in some of the data fields. For example, if the `USERNAME` field contained `Tom "the cool cat" Jones` as an entry, and double quotes happened to be the quote character for the file, the details would have to be specified manually. The same would be true if a field named `LOCATION` contained the entry `Atlanta, GA` where the comma was the separator character.

LISTSERV Maestro has four selections for choosing separator characters:

- Tab (\t)
- Comma (,)
- Semicolon (;)

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- Other – if this is chosen, type the character into the adjacent box.

Columns can be defined as **not enclosed by a quote character** or select the quote character from three choices:

- Double Quotes (“)
- Apostrophe (‘)
- Other – if this is chosen, type the character into the adjacent box.

After separator and quote characters have been entered, and any encoding change made, click **[Refresh Preview]** to have LISTSERV Maestro attempt to parse the file again with the new settings. The new columns will then be displayed. If the columns are now separated correctly, proceed. If the columns are not correct, repeat the process and click **[Refresh Preview]** to see the new changes.

Headers are specially defined rows used to label the columns of data so that the system and the user can correctly identify the columns. An uploaded text file may contain headers or not. If the file does not contain headers, select the **No, the file does not contain a header row** option and the system will automatically add a header row. Each column of data in the header row will have a generic name using the pattern COL1, COL2, COL3, and so on. If the uploaded file does have a header row, select the **Yes, the first row in the file containers headers** option and the headers within the file will be used.

If the parsing is accurate with each column of data is separated correctly and labeled with a header row, then click the **[Next ->]** button to continue.

15.4 Recipient Details

Once LISTSERV Maestro can successfully separate the recipient data into columns or otherwise quantify the data, the next steps are to define the column that identifies the email address, decide whether to use additional recipient data for mail merging and tracking, and to edit the column headers, if necessary. The Recipients Details screen is split into three sections to accommodate these steps.

15.4.1 Usage of Recipients Data

LISTSERV Maestro needs to know if additional recipient data will be used for mail merging and tracking, or whether this information is to be ignored and the job sent as bulk email. If the **Use additional recipient data for mail merging and tracking** option is selected, columns from the text file or database can be used in the email message to create personalized messages. These columns can then also be used to identify recipients for more detailed tracking reports. For more information on using mail merging, see the LISTSERV Maestro User’s Manual, Section 6.6 Merge Fields and Conditional Blocks.

If the **Ignore additional recipient data and send job as bulk email** option is selected, any additional columns that were uploaded with the file or that appear in the database will be ignored by the system. It will not be possible to use mail merging. Tracking for the message will be limited to blind tracking, meaning that the tracking data available from the job will not be associated with identifiable individuals or other demographic information. It is possible to enter an address and optional name for the “`TO:`” field in the message header.

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15.4.2 Recipient Identification Columns

In order to process an email job, LISTSERV Maestro needs to know which column represents the recipients' email addresses. Use the drop-down menus to select the **Email Column**. When additional recipient data is being used for mail merging, it is possible to select the **Name Column** as well. This drop-down menu will not appear when sending bulk email.

15.4.3 Header Definition

Headers are specially defined rows used to label the columns of data so that the system and the user can correctly identify the columns. Recipient data files containing a header will be sorted or parsed by LISTSERV Maestro based on that header row, and the table reflected on the screen will have the columns labeled. It is possible to edit the existing headers for an uploaded text file in order to make them easier to use in mail merging. Changing the headers in LISTSERV Maestro will not change the headers in the original text file.

If the recipient data file does not contain a header, it is possible to define a header within LISTSERV Maestro. Header labels are limited to upper and lower case letters, the numbers 0-9, and the underscore "_". Any illegal characters in the headers will have to be changed before proceeding. Before continuing to the next screen, specify the **Email Column** and the **Name Column** using the drop-down menus.

Once you're finished selecting the columns and defining the headers, click **[Next ->]** to continue.

15.5 Duplicate Elimination

On the Duplicate Elimination screen, define how duplicate recipients that may exist in the text file will be handled. Choose between the following options:

- **Do not remove duplicates** – All recipients in the text file will be used for delivery, even if some of them are duplicates.
- **Remove duplicates with the same email addresses** – If the text file contains entries with the same email address, then only the first of these entries will be used for delivery, the others will be ignored.
- **Use my list of columns to determine duplicates** – If the text file contains entries with the same values in all of the columns selected in the column list below this option, they will be considered duplicates. Only the first instance of each will be used for delivery; the others will be ignored. Select the columns that will be considered for this comparison from the list. Use `SHIFT` and `CTRL` to select multiple entries.

The recipient sample at the bottom of the screen is displayed to make it easier to understand the contents of each column. This will assist with deciding which columns are to be considered for comparison and which are not to be considered.

Tip: Removing duplicates from recipient data can be a useful way to ensure that multiple messages are not sent to the same recipient. It is common practice for one person to have more than one email address, for example, a work email address and a personal email address. By creatively selecting one or more criteria to remove duplicates, it is possible to avoid sending multiple messages to the same person with

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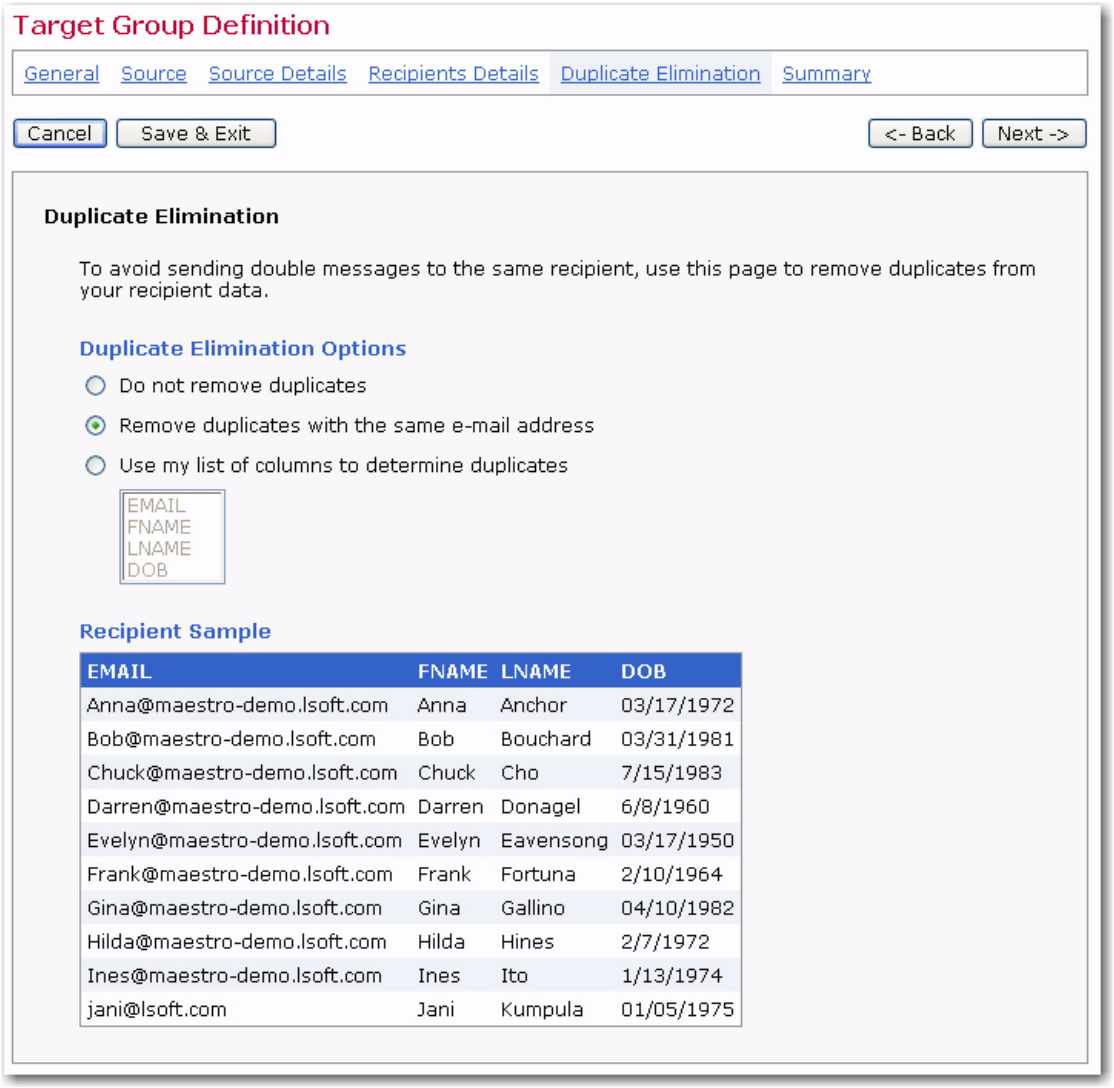
different email addresses. In contrast, several recipients may use the same email address, for example, family members sharing an ISP may also share an email address. In this case, it might be desirable to send multiple messages to the same address shared by multiple recipients, but addressed to each individual using the email account.

Figure 15-3 The Target Group Definition Wizard - Duplicate Elimination Screen for an Uploaded Text File



Once you're finished setting up the removal of duplicates, click **[Next ->]** to continue.

15.6 Summary

The Summary screen displays all the selections for the target group definition. In order for end users to access the target group, it must be enabled. Check **Yes, allow the definition of recipients based on this target group** to enable it. If left unchecked, the target group will not appear in the list of available target groups to end users.

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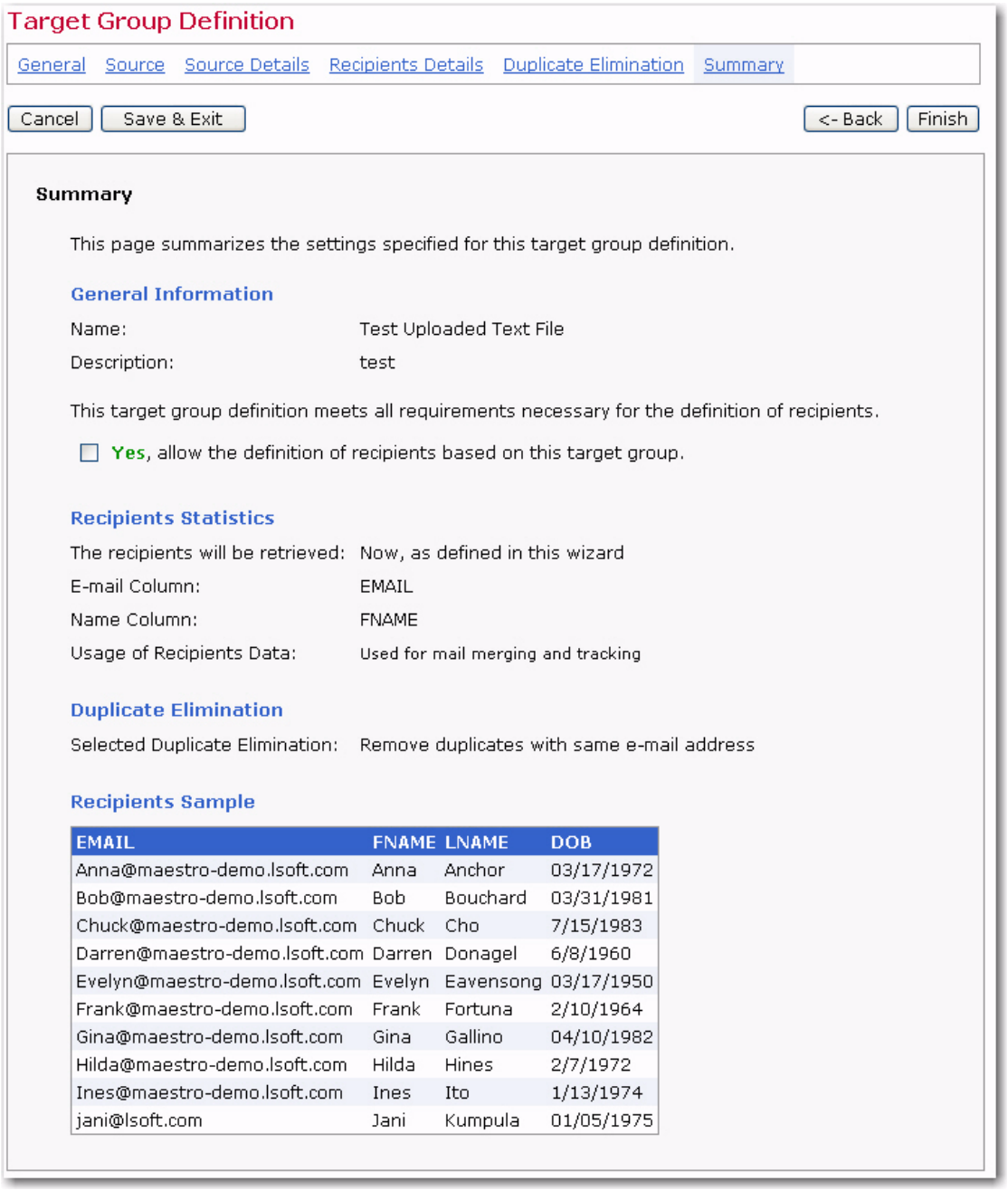
Click **[Finish]** to complete the target group and return to the Recipient Target Groups screen.

Figure 15-4 The Target Group Definition Wizard - Summary Screen for an Uploaded Text File



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Section 16 Target Groups from a Database Accessed by LISTSERV Maestro

This target group type is based on the **Select Recipients from a Database** recipient type in the Define Recipients wizard. Multiple screens take the data administrator through the process of defining a recipient target group using LISTSERV Maestro to select recipients from a database.

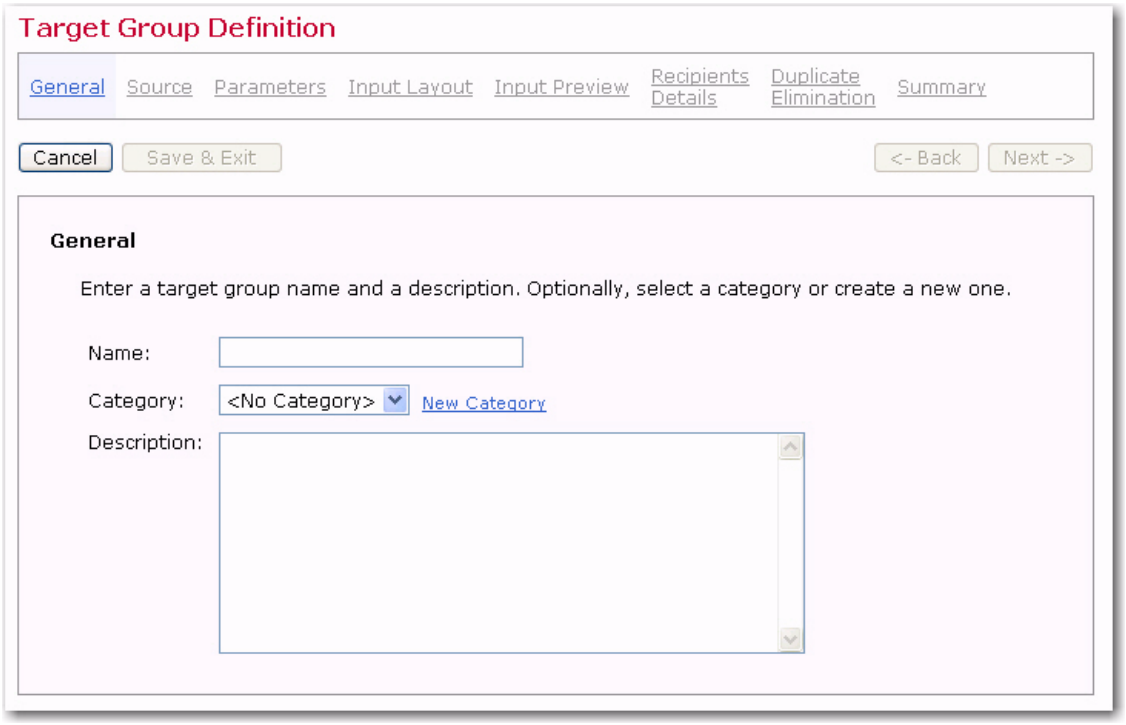
16.1 General

The General screen in the Target Group Definition wizard defines the name, category, and description of the target group. Both name and description are mandatory. Enter a meaningful name and a good description so the users who are selecting target groups in the Define Recipients wizard will have all the information they need to decide which target group to use.

Target groups can be clustered in categories, making it easier for end users to select a target group. A category is meant to contain target groups that are related to each other. The intent of categories is to minimize the time needed to locate a specific target group. By selecting a category first, users do not need to browse through all of the available target groups, only those in the relevant category.

To add a target group to a category, select the category for the target group from the drop-down menu. To create a new category, click the **New Category** link and define a new category. Target group categories are optional. If no category is selected or created, target groups are placed into the <No Category> category by default.

Figure 16-1 The Target Group Definition Wizard – General Screen



Once you're finished enter a name and description, click **[Next ->]** to continue.

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16.2 Source

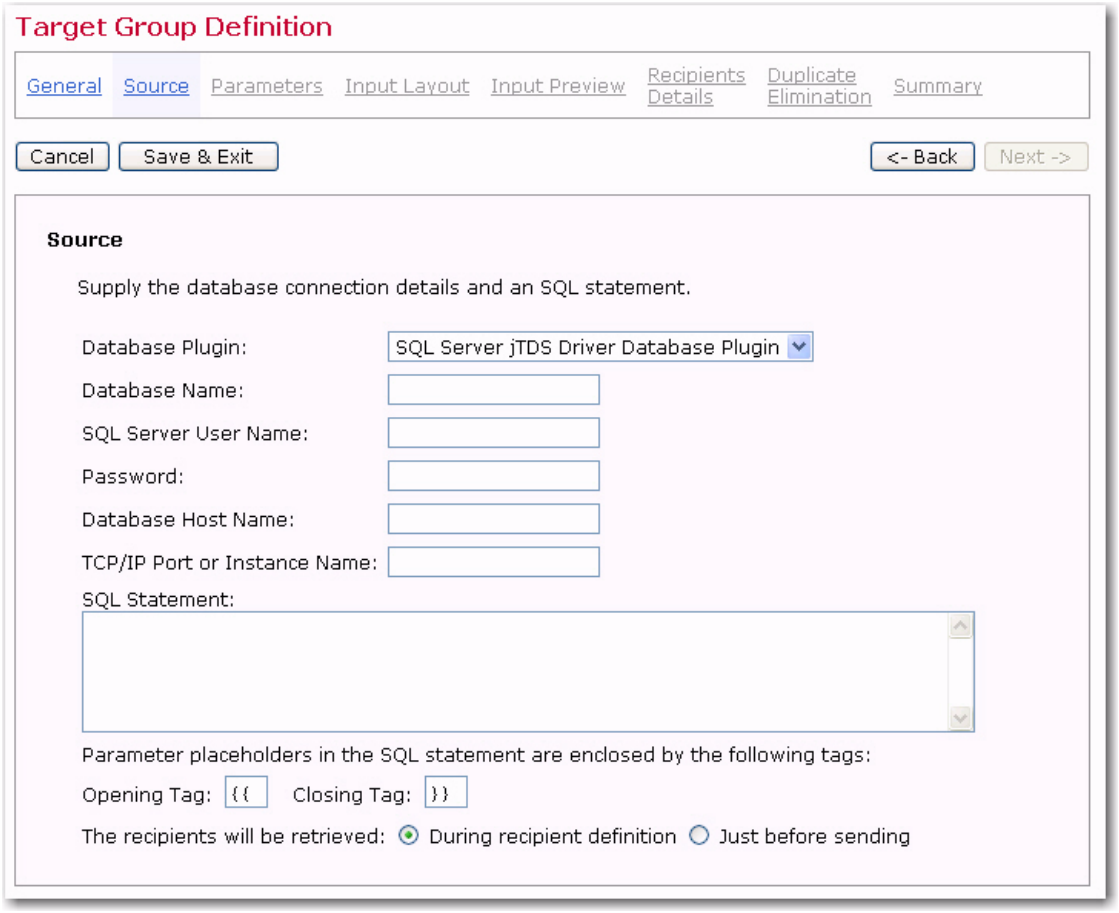
On the Source screen of a target group, where LISTSERV Maestro retrieves the recipients, select the database plugin that matches the database to be accessed. Plugins are available for MySQL, Oracle, SQL Server, DB2, and ODBC. If the desired plugin is not listed on the drop-down menu, then that means it has not been registered in the Administrative HUB – contact the LISTSERV Maestro administrator to request plugin registration.

Once a selection has been made, the screen will automatically refresh with input boxes for connection parameters. The Source screen is slightly different for each database types.

Next, enter the connection values required by that plugin, such as host name, database name, password, and/or TCP/IP port. These values depend on the database being accessed.

Enter the SQL statement that will be executed to retrieve the recipients. This statement is executed using the connection data specified above. The statement may be a fixed statement or it may contain parameters that are later filled out when this target group is used for defining recipients. See Section 18 Defining Parameters for more information on how to parameterize the SQL statement and for details on the **Opening Tag** and **Closing Tag** fields.

Figure 16-2 The Target Group Definition Wizard – Source Screen



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Select an option to define when the SQL statement will be executed:

- **During recipient definition** – The SQL statement will be executed when this target group is used in the Define Recipients wizard, and when the Summary screen of that wizard is entered. This means that if the user chooses this target group in the Define Recipients wizard, then the list of the actual recipients is defined at the moment the user completes the Define Recipients wizard. If the database content changes between that moment and the actual sending of the job, then those changes will not be reflected in the recipient list. In order to update the data, the end user would have to go back into the Define Recipients wizard and specifically request a reload.
- **Just before sending** – The SQL statement will be executed when this target group is used in the Define Recipients wizard at the moment before the job is actually sent. This means that if the end user chooses this target group in the Define Recipients wizard, then the list of the actual recipients is defined at the moment the job is actually sent, which may be some time after the Define Recipients wizard is completed. If the database content changes between the completion of the Define Recipients wizard and the actual sending of the job, then those changes will be reflected in the recipient list.

Important: If **Just before sending** is selected and the database is not available during the sending of the job, the job will fail. Be sure to coordinate the sending and database maintenance times to avoid conflicts.

Once you're finished entering the database connections details, click **[Next ->]** to continue.

16.3 Parameters

If parameters are part of the SQL statement on the Source screen, then they will need to be further defined on the Parameters screen. All parameters appear as links. Parameters highlighted in yellow are undefined; parameters appearing as normal links have already been defined. Click on a parameter, highlighted or not, to select it. Fill out the parameter's initial definition, or edit an existing definition in the lower part of the screen. The definition of the parameters made here will affect the choices that the end user will have when using this target group in the Define Recipients wizard. For more information on creating parameters, and the different parameter types, see Section 18 Defining Parameters.

Once a label and an optional description have been entered, select the input type of the parameter. There are four different types of input for parameters – check box, edit field, selection list, and date/time. Click **[Next->]** to continue.

16.4 Input Layout

The Input Layout screen allows the data administrator to design how the recipient target group appears to end users. Heading and additional screen text can be added to further describe the choices users have among the different selections available in the target group. If there are multiple parameters, then they can be grouped under headings and their order can be arranged. The more description users have, the easier it will be for

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them to decide how to use the target groups to select the recipients they want for their email jobs.

If one or more parameters are of the **Restrict value(s) to floating point numbers** type, then the decimal separator that the database uses needs to be defined. This will be either a dot (period) "." or a comma",". The selection of dot or comma here only defines how the floating point number will be formatted for replacement in the SQL statement. In the Define Recipients wizard, the end user will always use a dot as the decimal separator when entering a floating point number.

Once you're finished enter information about the parameters, click **[Next ->]** to continue.

16.5 Input Preview

The Input Preview appears as it would to users who are selecting recipients using this target group in the Define Recipients wizard. Use this screen to verify order, labels, descriptions, parameter types, and values. If the order of the parameters needs to be changed, click the **[<-Back]** button. If labels or descriptions need to be changed, click the **Parameters** link to re-enter the Parameters screen.

When the Input Preview screen is displayed, any SQL statements that are required to determine the values of single selection or multiple selection lists are executed. By executing the SQL statements, the drop-down lists or multi-line lists are filled in with values that can be selected.

Using the selections lists, checkboxes, input fields, and/or date fields, make selections for each parameter type.

The values entered in the Input Preview screen are used to fill out the actual target group SQL statement the same way as it will later happen in the Define Recipients wizard. The SQL statement will be executed and retrieve up to ten sample recipients that will be displayed on the next screen, Recipients Details. The "filled out" statement will be displayed on the Summary screen of the wizard as further verification that the statement and the parameters are correct. Click **[Next->]** to continue.

Note: If the Target Group Definition wizard is engaged to create a new target group definition, be sure and click **[Save & Exit]** to save all previous work on the target group if it is necessary to close the wizard before the Summary screen is reached.

16.6 Recipients Details

The Recipients Details screen specifies how the headers from the recipient data will be used. It is necessary to decide whether additional data will be used for mail merging and tracking, define which column contains the email address, and to edit the column headers, if necessary. The Recipients Details screen is split into three sections to accommodate the data administrator.

16.6.1 Usage of Recipients Data

LISTSERV Maestro needs to know if additional recipient data will be used for mail merging and tracking, or whether this information is to be ignored and the job sent as bulk email. If the **Use additional recipient data for mail merging and tracking** option is

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selected, columns from the text file or database can be used in the email message to create personalized messages. These columns can then also be used to identify recipients for more detailed tracking reports. For more information on using mail merging, see the LISTSERV Maestro User's Manual, Section 6.6 Merge Fields and Conditional Blocks.

If the **Ignore additional recipient data and send job as bulk email** option is selected, any additional columns that were uploaded with the file or that appear in the database will be ignored by the system. It will not be possible to use mail merging. Tracking for the message will be limited to blind tracking, meaning that the tracking data available from the job will not be associated with identifiable individuals or other demographic information. It is possible to enter an address and optional name for the "`TO:`" field in the message header.

16.6.2 Recipient Identification Columns

In order to process an email job, LISTSERV Maestro needs to know which column represents the recipients' email addresses. Use the drop-down menu to select the **Email Column**. When additional recipient data is being used for mail merging, it is possible to select the **Name Column** as well. This option is not available for bulk email.

16.6.3 Header Definition

Headers are specially defined rows used to label the columns of data so that the system and the user can correctly identify the columns. LISTSERV Maestro will use the field names returned by the SQL query as headers. By default, these are the field names used in the database tables, but they can be changed by the SQL query through the use of an "AS" clause. It is possible to edit the headers returned by the SQL query in order to make them easier to use in mail merging. Changing the headers in LISTSERV Maestro will not change the field names in the original database.

Header labels are limited to upper and lower case letters, the numbers 0-9, and the underscore "_". Any illegal characters in the headers will have to be changed before proceeding. Before continuing to the next screen, specify the **Email Column** and the **Name Column** using the drop-down menus.

Once you're finished defining the recipients and the headers, click **[Next ->]** to continue.

16.7 Duplicate Elimination

On the Duplicate Elimination screen define how duplicate recipients, which may exist in the database, will be handled. Choose between the following options:

- **Do not remove duplicates** – All recipients retrieved by the SQL query will be used for delivery, even if some of them are duplicates.
- **Remove duplicates with the same email addresses** – If the list of recipients retrieved by the SQL query contains entries with the same email address, then only the first of these entries will be used for delivery, the others will be ignored.
- **Use my list of columns to determine duplicates** – If the list of recipients retrieved by the SQL query contains entries with the same values in all of the columns

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selected in the column list below this option, then they will be considered duplicates. Only the first instance of each will be used for delivery; the others will be ignored. Select the columns that will be considered for this comparison from the list. Use SHIFT and CTRL to select multiple entries.

The **Recipient Sample** section is displayed to make it easier to understand the contents of each column. This will assist with deciding which columns to be considered for comparison, and which not to be considered.

Once you're finished defining how duplicate recipients are to be removed, click **[Next ->]** to continue.

Tip: Removing duplicates from recipient data can be a useful way to ensure that multiple messages are not sent to the same recipient. It is common practice for one person to have more than one email address (i.e. a work email address and a personal email address). By creatively selecting one or more criteria to remove duplicates, it is possible to avoid sending multiple messages to the same person with different email addresses. In contrast, several recipients may use the same email address (i.e. family members sharing an ISP may also share an email address). In this case, it might be desirable to send multiple messages to the same address shared by multiple recipients, but addressed to each individual using the email account.

16.8 Summary

The Summary screen displays all the important details about the target group for verification. The screen is split into categories listing the relevant details for each part of the target group. A target group that has been created by the data administrator is not automatically enabled for use in the Define Recipients wizard. The data administrator must explicitly enable the use of each target group. Target groups need to be enabled individually, giving the target group administrator control over the use of each target group. This way, groups can be created in advance, and only enabled when needed. Similarly, target groups can be disabled, preventing users from accessing them, without permanently deleting them.

To enable a target group, check **Yes, allow the definition of recipients based on this target group**. Target groups that are enabled meet all the requirements for the definition of recipients, and they are available for use in the Define Recipients wizard. To disable a target group, uncheck the option. This will put the target group into a state called **Complete**, where all the requirements for the definition of recipients are met, but the target group is not released for use.

Click **[Finish]** to complete the target group and return to the Recipient Target Groups screen.

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Section 17 Target Groups from a Database Accessed by LISTSERV

This target group type is based on the **Let LISTSERV Select Recipients from a Database** recipient type in the Define Recipients wizard. Multiple screens take the data administrator through the process of defining a recipient target group using LISTSERV to select recipients from a database.

17.1 General

The General screen in the Target Group Definition wizard defines the name, category, and description of the target group. Both name and description are mandatory. Enter a meaningful name and a good description so the users who are selecting target groups in the Define Recipients wizard will have all the information they need to decide which target group to use.

Target groups can be clustered in categories, making it easier for users to select a target group. A category is meant to contain target groups that are related to each other. The intent of categories is to minimize the time needed to locate a specific target group. By selecting a category first, users do not need to browse through all the available target groups, but only those in the relevant category.

To add a target group to a category, select the category for the target group from the drop-down menu. To create a new category, click the **New Category** link and define a new category. Target group categories are optional. If no category is selected or created, target groups are placed into the "<No Category> category by default.

Once you're finished entering the name and description, click **[Next ->]** to continue.

17.2 Source

On the Source screen of a target group, where LISTSERV retrieves the recipients from a database, enter the database server if the default database as configured in LISTSERV is not going to be used. For more information about configuring databases for LISTSERV, see the LISTSERV Developers Manual.

Enter the SQL statement. The statement may be a fixed statement or it may contain parameters that are later filled out when this target group is used in defining the recipients.

If parameters are being used, opening and closing tags are used to denote the parameter. The tags can be changed from their default values of opening "{" and closing "}" curly brackets by entering other characters in the corresponding boxes. The quote character and an escaped quote character used by the database to enclose string literals also needs to be entered in the corresponding boxes. See Section 18 Defining Parameters for more information on how to parameterize the SQL statement and for details about the meaning of the opening and closing tag input fields.

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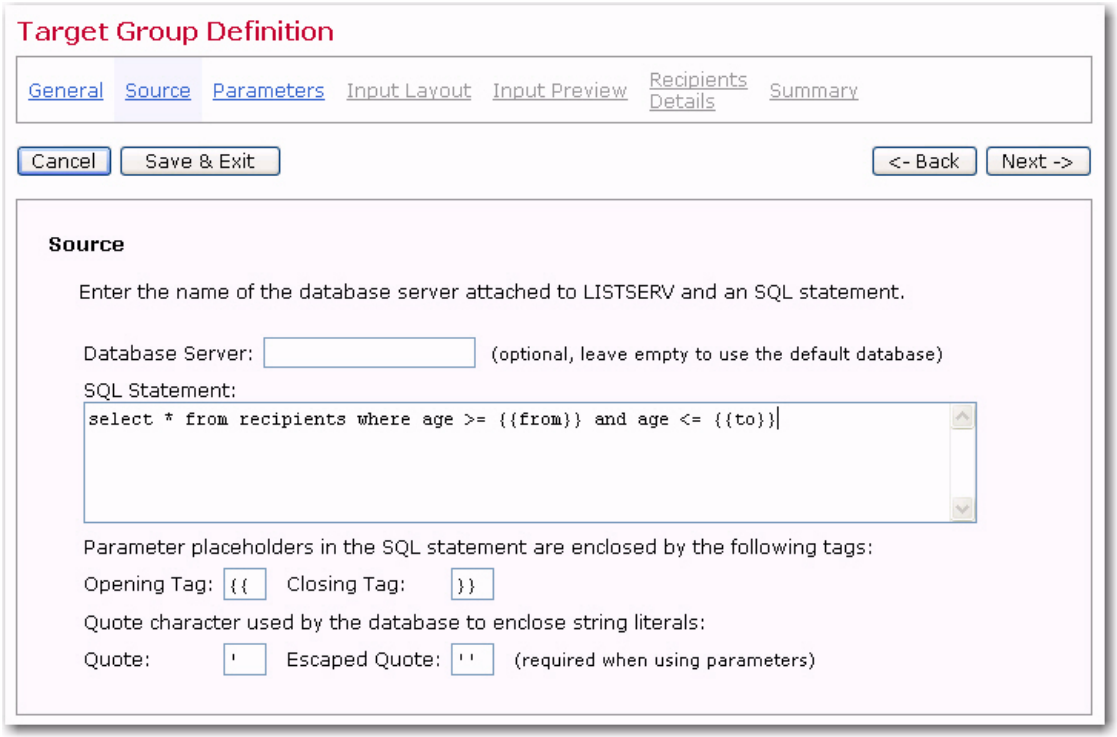
Figure 17-1 The Target Group Definition Wizard – Source Screen for a Database Accessed by LISTSERV



Once you're finished entering the database information, click **[Next ->]** to continue.

17.3 Parameters

If parameters are part of the SQL statement on the Source screen, then they will need to be further defined on this screen. All parameters appear as links. Parameters highlighted in yellow are undefined; parameters appearing as normal links have already been defined. Click on any parameter, highlighted or not, to select it. Fill out the parameter's initial definition, or edit an existing definition in the lower part of the screen. The definition of the parameters made here will affect the choices that the end user will have when using this target group in the Define Recipients wizard. For information on creating parameters and the different parameter types available, see Section 18 Defining Parameters.

Input values for parameters to determine the values of single selection or multiple selection lists must be manually entered. This is because LISTSERV Maestro is not connected directly with the database and therefore does not know what values exist in the data tables.

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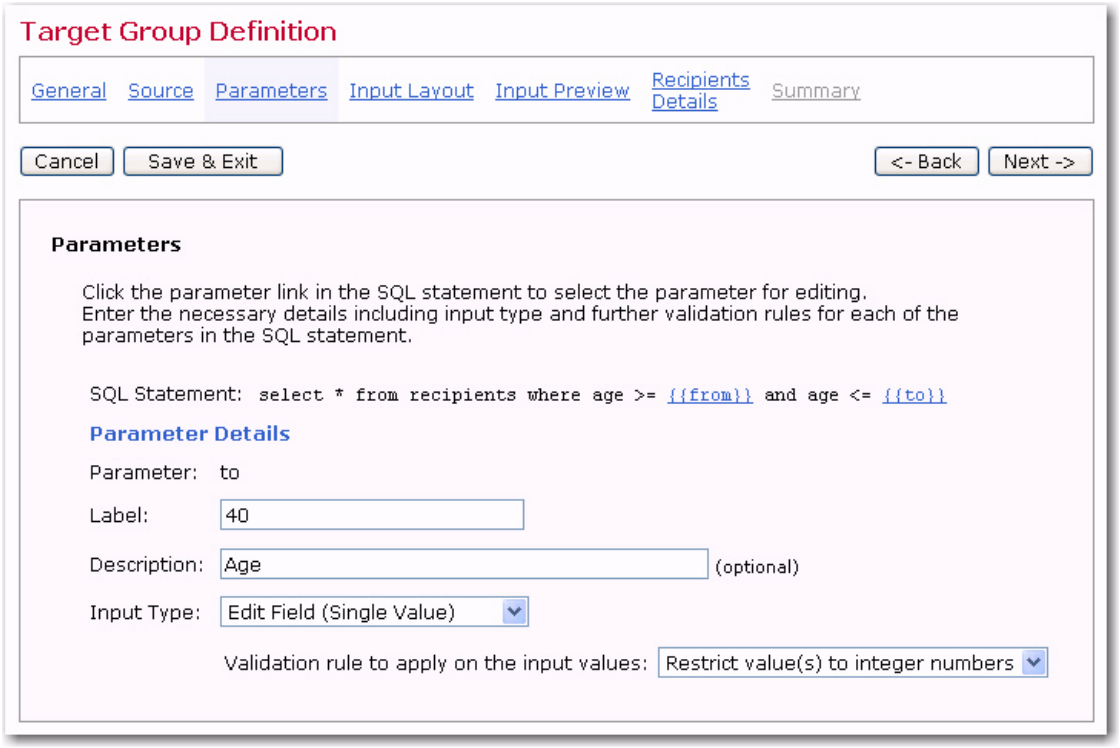
Figure 17-2 The Target Group Definition Wizard – Parameters for a Database Accessed by LISTSERV



Once a label and an optional description have been entered, select the input type of the parameter. There are four different types of input for parameters, check box, edit field, selection list, and date/time. Click **[Next ->]** to continue.

17.4 Input Layout

The Input Layout screen allows the data administrator to design how the recipient target group appears to end users. Headings and additional screen text can be added to further describe the choices users have among the different selections available in the target group. If there are multiple parameters, they can be grouped under headings and their order can be arranged. The more description users have, the easier it will be for them to decide how to use the target groups to select the recipients they want for their email jobs.

If one or more parameters are of the **Restrict value(s) to floating point numbers** type, then the decimal separator that the database uses needs to be defined. This will be either a dot (period) "**.**" or a comma "**,**". The selection of dot or comma here only defines how the floating point number will be formatted for replacement in the SQL statement. In the Define Recipients wizard, the end user will always use a dot as the decimal separator when entering a floating point number.

Once you've finished entering any additional information, click **[Next ->]** to continue.

17.5 Input Preview

The Input Preview screen appears as it would to users who are selecting recipients using this target group in the Define Recipients wizard. Use this screen to verify order, labels, descriptions, parameter types, and values. If the parameter order needs to be changed,

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click the **[<- Back]** button. If labels or descriptions need to be changed, click the **Parameters** link to re-enter the Parameters screen.

Using the selections lists, checkboxes, input fields, and/or date fields, make selections for each parameter type. Click **[Next ->]** to continue.

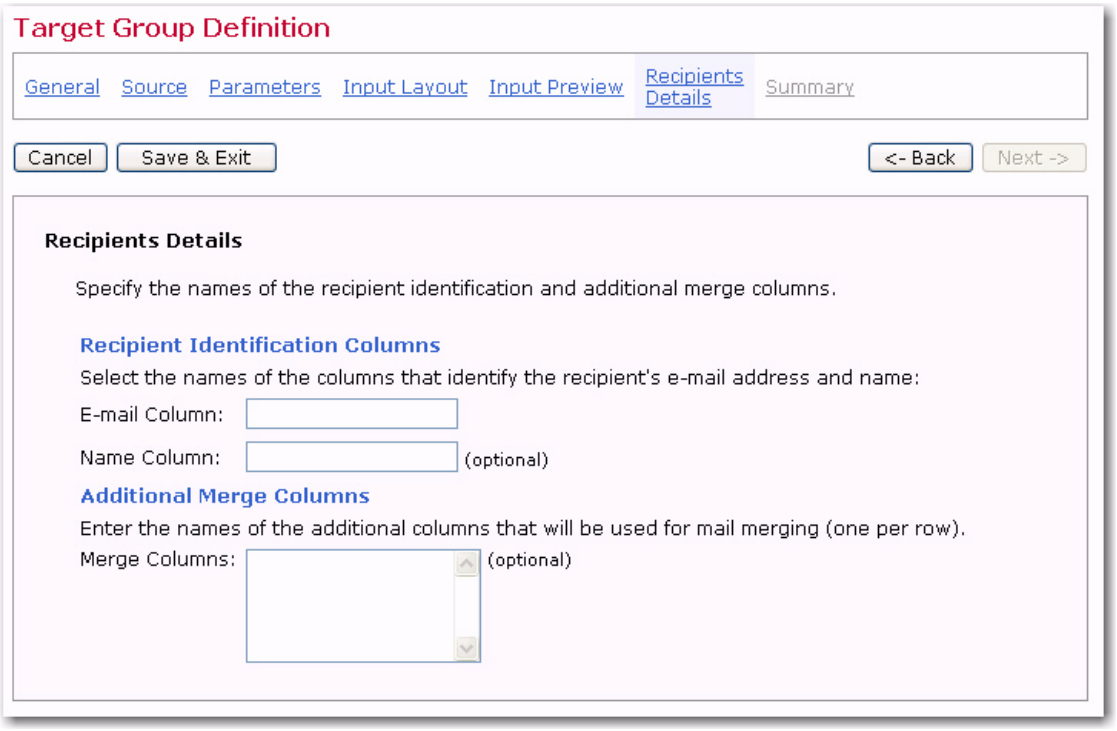
17.6 Recipients Details

When LISTSERV selects recipients from a database the screen is split into two sections –**Recipient Identification Columns** and **Additional Merge Columns**.

In the **Recipient Identification Columns** section, specify which of the recipient columns in the database contains the email addresses that will be used for delivery. Enter the column name in the corresponding text box. Optionally, specify which of the recipient columns in the database contains the names of the recipients by entering the column name in the corresponding text box. If a column name is entered, the names of the recipients will be included in the "To:" field of each individual message, making the mail more personalized.

If other data in the database is going to be used for mail merging, it is necessary to identify each of the column names. In the **Additional Merge Columns** section, enter each column name in the corresponding text box, one name per row. Mail merging is optional, but if engaged, other recipient data can be used in the message making it more personal. For more information on using merging fields, see Section 6.6 Merge Fields and Conditional Blocks in the LISTSERV Maestro User's Manual.

Figure 17-3 Recipient Details for LISTERV Selects Recipients from a Database



Once you're finished specifying the columns, click **[Next ->]** to continue.

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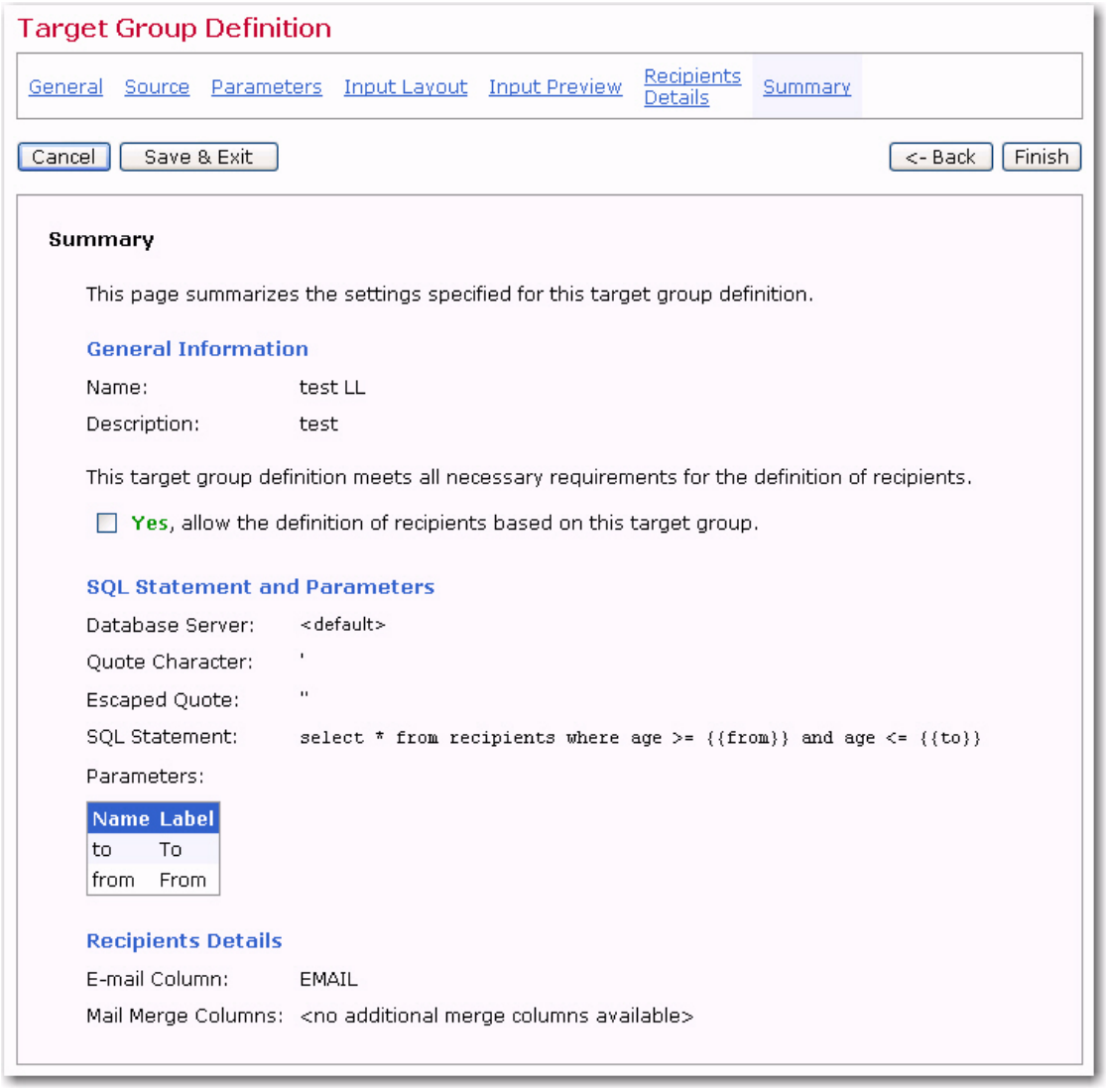
17.7 Summary

The Summary screen displays all the important details about the target group for verification. The screen is split into categories listing the relevant details for each part of the target group. A target group that has been created by the data administrator is not automatically enabled for use in the Define Recipients wizard. The data administrator must explicitly enable the use of each target group. Target groups need to be enabled individually, giving the target group administrator control over the use of each target group. This way, groups can be created in advance, and only enabled when needed. Similarly, target groups can be disabled, preventing users from accessing them, without permanently deleting them.

Figure 17-4 The Target Group Definition Wizard – Summary Screen for a Database Accessed by LISTSERV



To enable a target group, check **Yes, allow the definition of recipients based on this target group**. Target groups that are enabled meet all the requirements for defining recipients, and they are available for use in the Define Recipients wizard. To disable a target group, uncheck the option. This will put the target group into a state called

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Complete, meaning that all the requirements for defining recipients are met, but the target group is not released for use.

Click **[Finish]** to complete the target group and return to the Recipient Target Groups screen.

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Section 18 Defining Parameters

Parameters are the placeholders within the SQL statement that are replaced with values chosen during the recipient definition of the job. By using parameters, the data administrator can use the same basic SQL statement for many jobs, turning over the details to the end user, who can use them without having to know anything about the actual SQL that lies behind the target group, or even know SQL in general. This saves time and effort for all team members. It also allows group members to share the same target groups, while permitting each target group to create different recipient definitions for individual jobs.

18.1 Fixed and Parameterized SQL Statements

A SQL statement for a target group can be a "fixed" statement, or a parameterized statement. A fixed statement contains SQL code that will be used in the same form every time it is used with the target group. For example:

```
select * from recipients
```

Or more complex:

```
select email, name, city from recipients where age >= 30 and age
<= 39
```

A fixed statement will always yield the same results regardless of the circumstances of how the target group is used (as long as the actual database content does not change). A fixed statement is useful in certain circumstances. The first example given here would simply select all entries from a certain table. If that is the required behavior, then a fixed statement is the correct statement type to use.

The second example selects only those recipients that are in their thirties (`age >= 30 and <= 39`). This is very limiting. Targeting a different age group would necessitate creating a new target group with a different SQL statement. In fact, with fixed statements, every different age group would require its own target group and SQL statement. Setting up these fixed statements would involve a lot of work for the data administrator, as well as take away flexibility for the end users.

Using a parameterized statement can save time and effort as well as give end users more flexibility in selecting recipients. A parameterized statement contains placeholders in the SQL code that are replaced by the end user, who uses the target group for the actual recipient definition. These placeholders are not "real" SQL code, but are a sort of "meta" code. By using placeholders, parts of the SQL statement that are not yet "known" can be defined at the moment the SQL statement is entered into the system. These placeholders are then replaced with actual values before the statement is executed.

Continuing with the example above, using placeholders makes it possible to create a parameterized SQL statement that selects all recipients of a certain age range. The end user, who employs the target group in a recipient definition, is left with the decision of what age range to use when creating the recipients definition. This example shows how the actual age range values are replaced with placeholders "`{{from}}`" and "`{{to}}`":

```
select email, name, city from recipients where age >= {{from}} and age <=
{{to}}
```


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18.1.1 Parameter Placeholders

A placeholder is any string of characters that appears between special opening and closing tags. By default, the opening tag is "{{" and the closing tag is "}}". Everything surrounded by these two tags will be treated as parameter placeholders, and not as part of the actual SQL statement. Different tags can be defined if the default tag strings are used somewhere else in the statement and therefore cannot be recognized as placeholder tags. Enter tags in the **Opening Tag** and **Closing Tag** fields below the **SQL statement** field on the Source screen.

Parameter placeholders must follow these rules to function correctly:

- Any occurrence of a pair of the currently defined opening and closing tags will be interpreted as a placeholder. The opening and closing tags themselves are also considered part of the placeholder. The text between the tags is considered the parameter name.
- Any string of characters can be used between the tags, becoming the parameter name.
- The same parameter name can be used for several placeholders (with certain restrictions, see below). In this case, they are simply considered multiple occurrences of the same parameter, all of which will be replaced with the same value once the placeholders are replaced with the end user's selection.
- A placeholder can be used in any position in the SQL statement. The most common locations for placeholders are in comparisons in the where-clause of the statement.
- A placeholder that is not enclosed with string literal quotes (as in "`age >= {{from}}`") is considered an integer parameter because the entire placeholder is replaced with the value (so that it becomes, for example "`age >= 30`"). The value must be an integer; otherwise, the execution of the statement will result in an error or in unexpected results.
- A placeholder that is enclosed with string literal quotes (as in "`city = '{{name}}'`") is considered a non-integer parameter (a string or floating-point). Here, the entire placeholder, but not the enclosing quotes, is replaced. The example becomes "`city = 'New York'`", and the value may be any string.
- Any occurrences of the quote character itself in the value will automatically be escaped. For example, a placeholder is defined as "`lastname = '{{name}}'`" and a last name of O'Brian is entered as the parameter value (value of "`O'Brian`"). After replacement, the resulting data would automatically become "`lastname = 'O''Brian'`" (or whatever escape of the quote character is the correct one for the database in use). Do not define values with quote characters already escaped, since that would lead to a double-escaped character.
- Placeholders within an in-clauses require special attention. An in-clause is a SQL construct that allows an `OR` comparison with a range of values. Instead of writing "`value = x or value = y or value = z`" it is possible to write "`value in (x,y,z)`", enumerating the possible values in a comma separated list within parenthesis.

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To parameterize this, use a placeholder instead of this comma separated list, as with "`value in ({{arg}})`" or in the quoted form "`value in ('{{arg}}')`". Both forms are very similar. The placeholder will be replaced with a comma separated list representing all choices the user makes. Do not include a whole list of placeholders, but only a single placeholder. This single placeholder is then replaced by the list of the choices the user makes.

If the non-quoted form is chosen, then the choices are also not quoted, so they must be integer values. If the quoted form is chosen, then all choices will be quoted (each one separately) and any quotes appearing in a choice value will automatically be escaped.

Here are some examples:

- Assume that the target group SQL statement includes the condition "`value in ({{arg}})`" and that the user selected the choices "`1`", "`5`", "`23`" and "`412`". The actual SQL query submitted by LISTSERV Maestro will include the condition: "`value in (1,5,23,412)`".
- Assume that the statement includes the condition "`lastname in ('{{arg}}')`" and that the user selected the choices "`Miller`", "`O'Brian`" and "`Wagner`". The actual SQL query submitted will include: "`lastname in ('Miller','O''Brian','Wagner')`".

- Two placeholders that have the same parameter name must also have the same integer/non-integer type. You cannot define an integer parameter and use the same parameter name for a non-integer parameter, or vice versa.
- Two placeholders that have the same parameter name must also have the same in-clause/non-in-clause type. You cannot define a parameter inside of an in-clause and then use the same parameter name for a parameter outside of an in-clause, or vice versa.

18.2 Available Parameter Types

There are four basic parameter types – checkbox, edit field, selection list, and date/time. Each parameter type is only available for certain types of select statements.

Table 18-1 Available Parameter Types for Select Statements

Available Parameter Types	Integer Values Outside Any In-Clause	Integers Values Inside an In-Clause	Non-Integer Values (Quoted) Outside Any In-Clause	Non-Integer Values (Quoted) Inside an In-Clause
Checkbox	X		X	
Edit field single value	X		X	
Edit field multiple values		X		X
Selection list single value	X		X	
Selection list multiple values		X		X
Date/time			X	

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18.2.1 Parameter Type Checkbox

This parameter type appears as a checkbox on the end user's screen. The checkbox has two associated values – checked or unchecked. Enter these values accordingly – they need to be different values.

Depending on the input from the user (if the box is checked or not), one or the other value will be used directly to replace the parameter placeholder. If the parameter placeholders were not quoted, then only integers can be entered as the two values. If the parameter placeholders were quoted, then any string can be entered for the values, and all occurrences of the quote character in these will be escaped automatically before the replacement. Remember do not escape quotes when entering the values.

Figure 18-1 Parameter Type Checkbox – Data Administrator's View

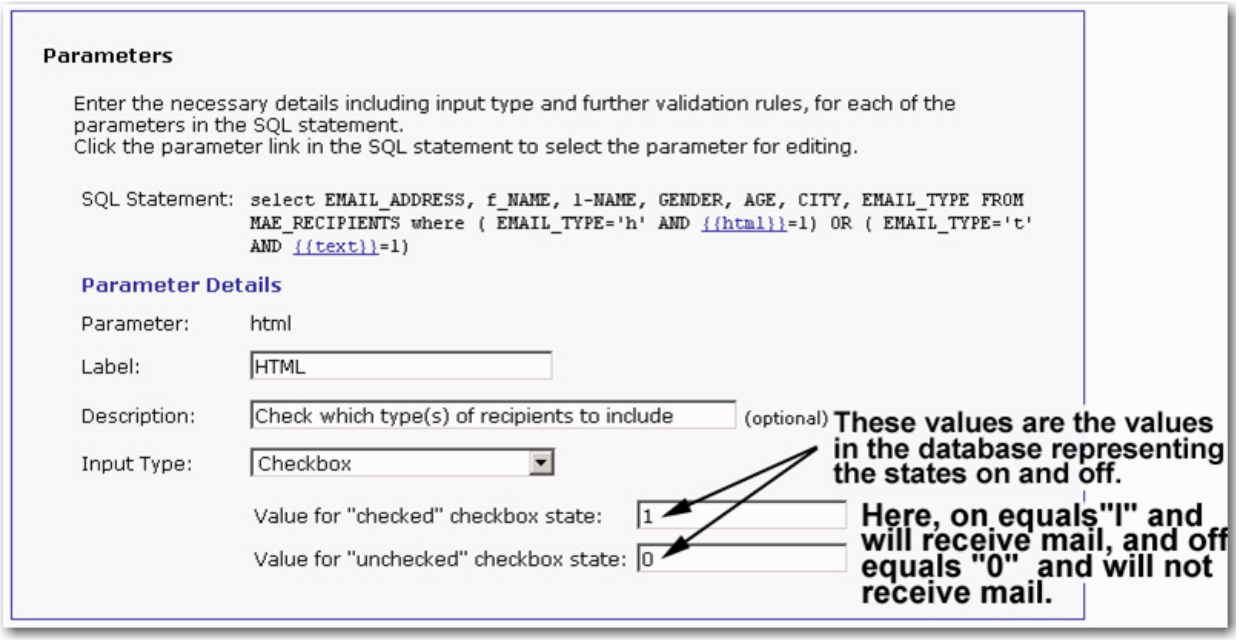
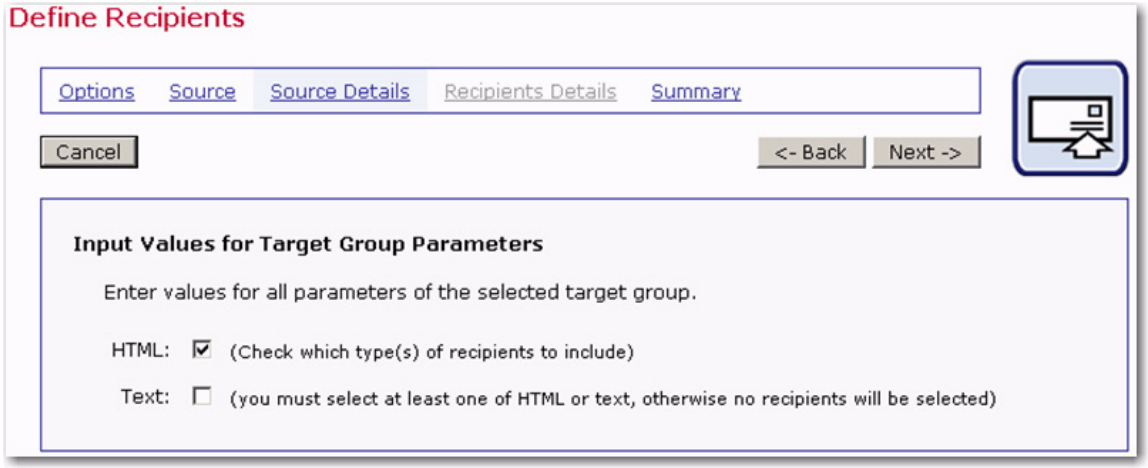


Figure 18-2 Parameter Type Checkbox – End User's View



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18.2.2 Parameter Type Edit Field

This parameter type appears as a free input field on the end user's screen. The input is validated according to the sub-selection:

- **Restrict value(s) to integer numbers** – Only integer numbers are accepted as input.
- **Restrict value(s) to floating point numbers** – Only numbers (integer or floating point) are accepted.
- **Allow free text input** – Any kind of input (including numbers or text) is accepted.

The input from the end user will be used directly to replace the parameter placeholder. If the parameter placeholder was quoted, then all occurrences of the quote character in the user input will be automatically escaped before the replacement.

There are two versions of the Edit Field parameter type – single value and multiple values. In the single value version, the input field will be a one line input field, and the value entered by the end user will be the value used to replace the placeholder. This type is only available if the matching placeholder is not inside of an in-clause context. In the multiple values version, the input field will be rendered with multiple lines, and the end user may enter several lines of text. Each line will be interpreted as a separate value, and the placeholder will be replaced with a comma separated list of all values (of all lines). Empty lines will be ignored. This type is only available if the matching placeholder is within an in-clause context.

Figure 18-3 Parameter Type Edit Field, Single Value - Data Administrator's View

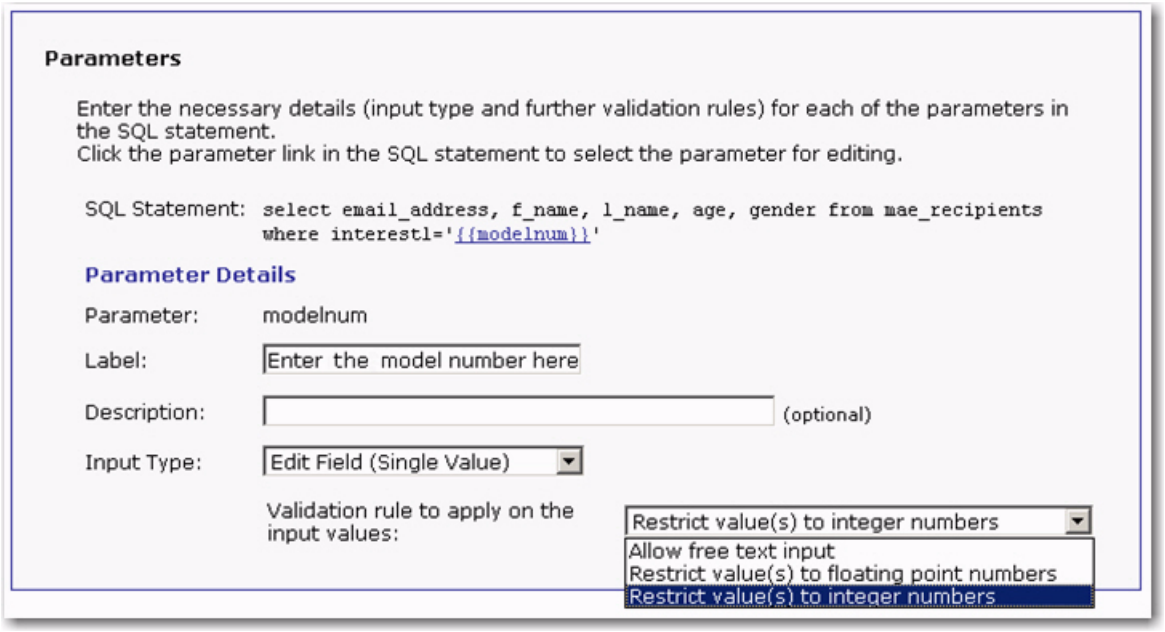

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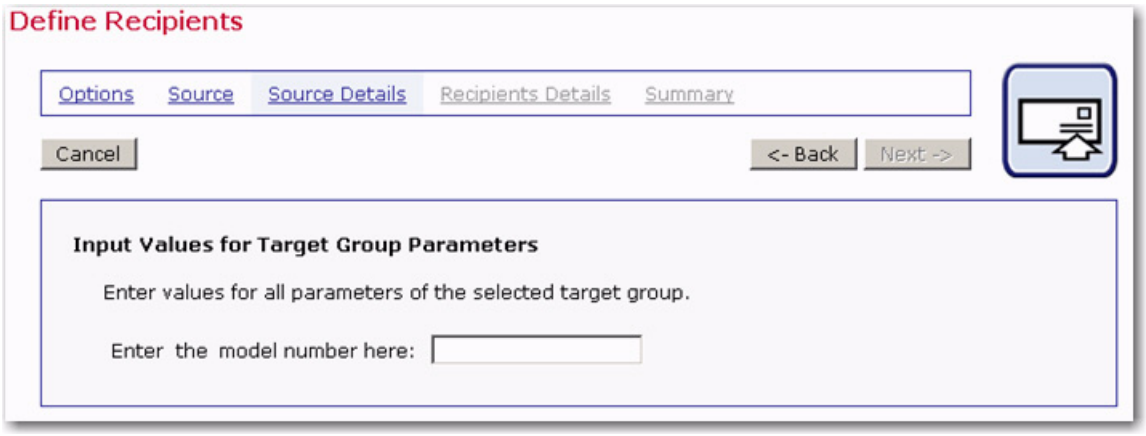
Figure 18-4 Parameter Type Edit Field, Single Value – End User's View



18.2.3 Parameter Type Selection List

This parameter type appears as a selection list with multiple entries on the end user's screen. If the parameter is within an in-clause, the list is rendered as a multi-line list field, and the end user may select multiple entries by holding down the `SHIFT` or `CTRL` key. Otherwise, the list is rendered as a drop-down list and the end user may select only a single entry.

For parameters where LISTSERV Maestro selects from a database, the entries in the selection list can be specified in two ways. They can be specified manually on this wizard screen or a SQL statement can specify them. The SQL statement will then be used to retrieve the values that will appear in the list from the database. Select an option to choose between the two methods. For parameters where LISTSERV selects from a database, all entries must be specified manually on this wizard screen.

18.2.3.1 Manual specification

Each value consists of two parts, the visible text in the selection list (that is the text that the end user actually sees in the list), and the invisible value associated with that entry. This invisible value, associated with the entry selected by the end user, will be used directly to replace the parameter placeholder. If the parameter placeholder was not quoted, then only integers can be used as the internal value of each entry. If the parameter placeholder was quoted, then any string can be entered for the internal values, and all occurrences of the quote character in these will be escaped automatically before the replacement. Do not escape quotes when entering the values.

To add a new entry, click on the **New** link to the right of the list. Enter the visible text into the left edit fields, and the internal value into the right field. Click on **[Save Entry]**. The new entry will be added to the list.

To modify an existing entry, simply select the entry in the list, edit its visible text and/or internal value in the two edit fields above, and then click **[Save Entry]** to save the changes. The entry will be updated accordingly.

To change the ordering of the entries, select the entry to move and click **Up** or **Down** to move it in the list. To delete an entry, select it, and then click **Delete**.

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Figure 18-5 Parameter Type Selection List, Manual Specification – Data Administrator's View

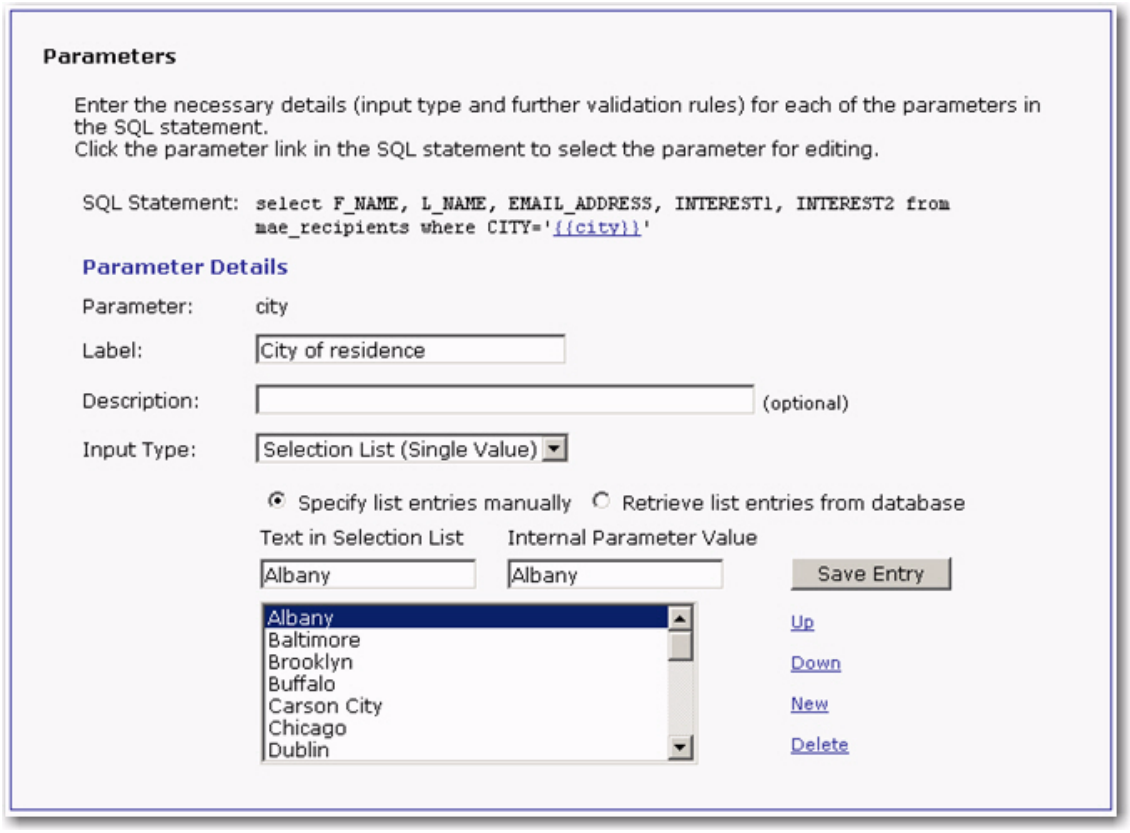
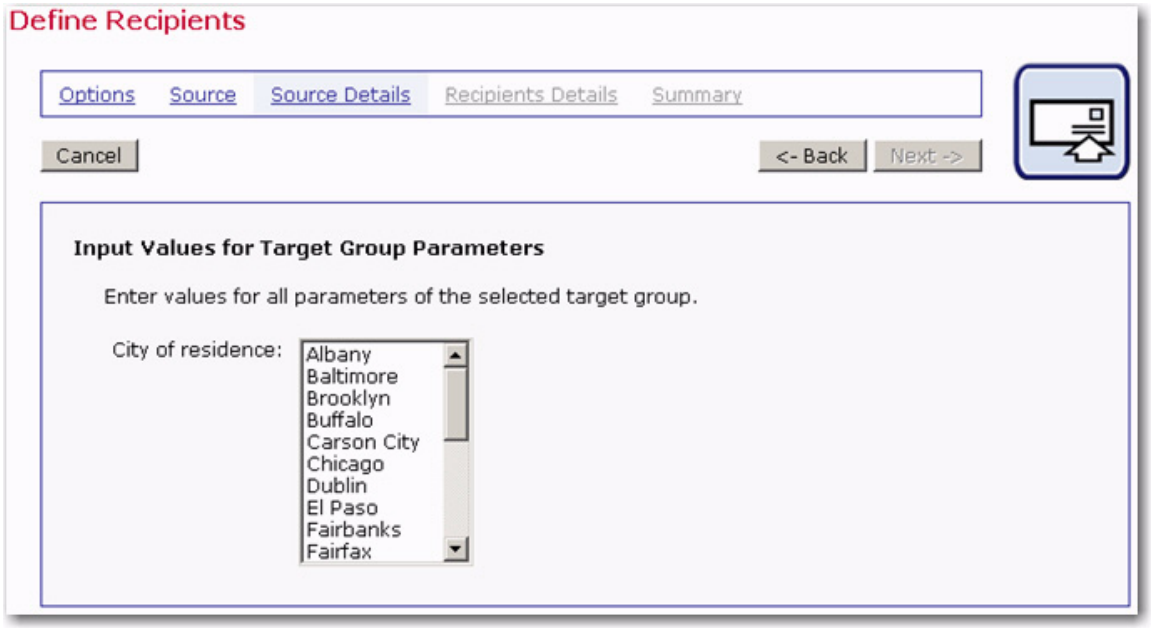


Figure 18-6 Parameter Type Selection List – End User's View



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18.2.3.2 Database specification

Enter a SQL statement. This statement will be executed with the same connection parameters that were specified on the Source screen of the wizard. The result set retrieved will be used to populate the selection list. The values from the first column of the result set will be used as the visible text of the selection list entries. If there is a second column in the result set, then its values will be used as the internal values for the entries. If there is no second column, then the values from the first column will be used both for the visible text and the internal values. Any further columns in the result set are ignored.

Make sure that the internal values match the quote context of the parameter. If the parameter placeholder is not quoted, then the internal values must be integer values (that is the values from the second result set column, or the ones from the first column, if there is only one column). If the values are not integers, then the parameter placeholder must be quoted (any necessary escaping of quotes in the values will happen automatically).

This option is very useful if it is not possible or desirable to enter all the selection values by hand. There may be many different selections, and some of the values may not yet be known. For example, think of a target group that has the city where a recipient lives as one of the parameters in order to do mailings limited to the residents of a certain city:

```
select * from recipients where city='{{name}}'
```

If this parameter is assigned the type "Selection List" all possible cities could be entered manually. But, this approach requires a lot of work, and all the possible cities may not yet be known. Another drawback to using this approach is that the list would have to be updated manually each time a recipient from a new city is entered into the database. To avoid all this time and effort, use an SQL statement like:

```
select distinct city from recipients order by city
```

This statement accesses the same table as the target group itself (see the first SQL statement above) using the same database connection settings. It generates exactly one column that contains all cities that are currently in the city column in the table, in alphabetical order. The end user can then simply select one of these cities.

Important: The list may only have a maximum of 100 entries, in order to not overburden the user interface and to protect against abuse. If more entries than this is required, it would probably be better to use the "Edit Field" type for this parameter, and let the end user input the value manually, instead of selecting it from a list with too many entries.

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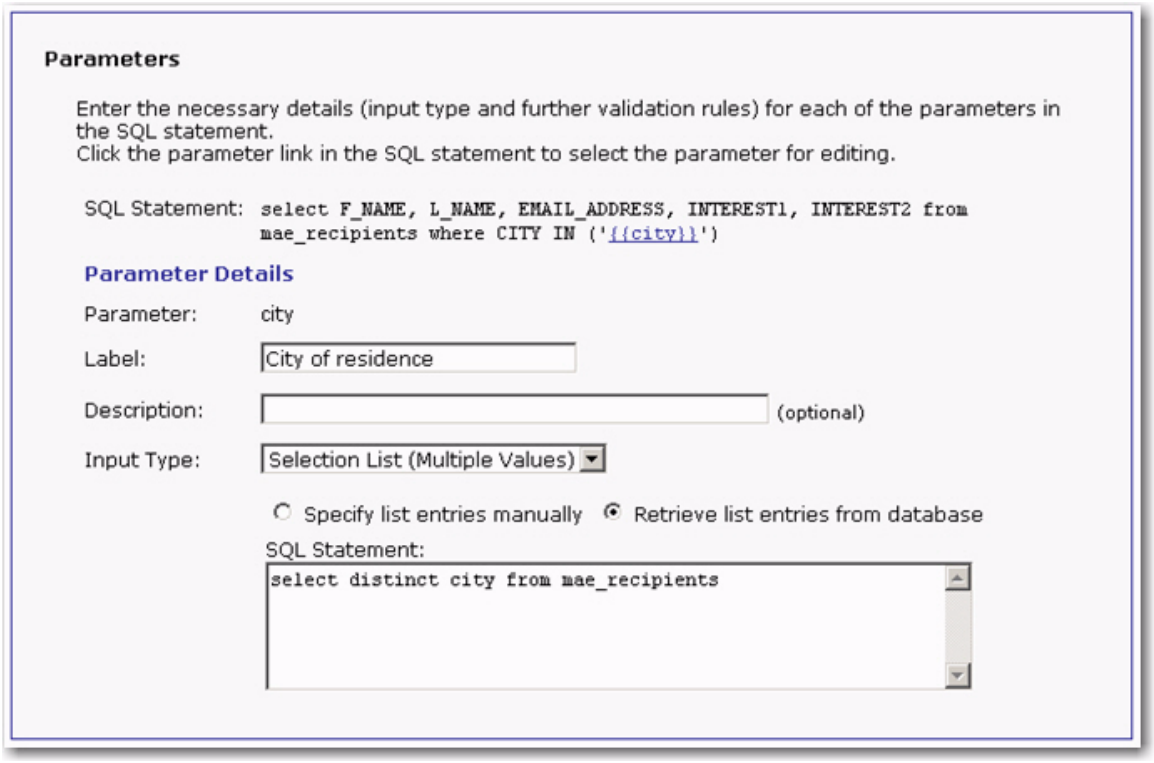
Figure 18-7 Parameter Type Selection List, Database Specification – Data Administrator's View



18.2.4 Parameter Type Date and/or Time

This parameter type appears as an input box on the end user's screen. Choose selections for **Date Input Format** and/or **Time Input Format**. Choose at least one or choose both. The selection determines whether the user will be asked to input a date, a time, or both. It also determines how the input fields will be arranged. Input fields will be rendered as three input fields for the date (day, month, year order, according to specification), and/or as two or three input fields for the time (hours and minutes with or without seconds, according to specification).

All end user time input must be in the 24h format from 00:00:00 to 23:59:59. An AM/PM input format is not available. In addition to defining how the date/time input will look for the end user, it is also necessary to define how the input from the user is converted into a string that matches the date/time format used in the database. Do this by entering a format string into the specified edit field.

In that format string, use any desired characters. For example, separation characters like "`:`" or "`,`". Also, use any of the format placeholders listed to the right of the field. Each format placeholder will later be replaced with the corresponding date/time value, in the corresponding format.

The possible format placeholders are:

- **year4** – Will be replaced with a four digit representation of the year value entered by the end user (for example "2002"). Available only if a date input format was selected.
- **year2** – Will be replaced with a two digit representation of the year value entered by the end user (for example "02"). Available only if a date input format was selected.

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- **month2** – Will be replaced with a two digit representation of the month value entered by the end user (for example "09" or "12"). Available only if a date input format was selected.
- **month1** – Will be replaced with a one or two digit representation of the month value entered by the end user, with months January to September as one digit and months October to December as two digits (for example "9" or "12"). Available only if a date input format was selected.
- **day2** – Will be replaced with a two digit representation of the day value entered by the end user (for example "01" or "31"). Available only if a date input format was selected.
- **day1** – Will be replaced with a one or two digit representation of the day value entered by the end user, with days 1 to 9 as one digit and days 10 to 31 as two digits (for example "1" or "31"). Available only if a date input format was selected.
- **hour2** – Will be replaced with a two digit representation of the hour value entered by the end user (for example "08" or "23"). Available only if a time input format was selected.
- **hour1** – Will be replaced with a one or two digit representation of the hour value entered by the end user, with hours 0 to 9 as one digit and hours 10 to 23 as two digits (for example "1" or "23"). Available only if a time input format was selected.
- **min2** – Will be replaced with a two digit representation of the minute value entered by the end user (for example "04" or "59"). Available only if a time input format was selected.
- **min1** – Will be replaced with a one or two digit representation of the minute value entered by the end user, with minutes 0 to 9 as one digit and minutes 10 to 59 as two digits (for example "4" or "59"). Available only if a time input format was selected.
- **sec2** – Will be replaced with a two digit representation of the seconds value entered by the end user (for example "06" or "59"). Available only if the time input format with seconds was selected.
- **sec1** – Will be replaced with a one or two digit representation of the seconds value entered by the end user, with seconds 0 to 9 as one digit and seconds 10 to 59 as two digits (for example "6" or "59"). Available only if the time input format with seconds was selected.

While the format string is being typed into the input field, the sample date/time "Sep. 1, 2002 08:04:06 AM" will be converted into that format and the result displayed below the input field. For example, if "month2/day2/year4 - [hour2:min2:sec2]"is entered as the format, then the sample will display:

```
"09/01/2002 - [08:04:06]"
```

The input from the end user will be applied to the format string entered in the same way as with the sample date, and the resulting string will be used to replace the parameter

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placeholder. All occurrences of the quote character in the date/time string will be escaped before the replacement.

Figure 18-8 Parameter Type Date and/or Time – Data Administrator's View

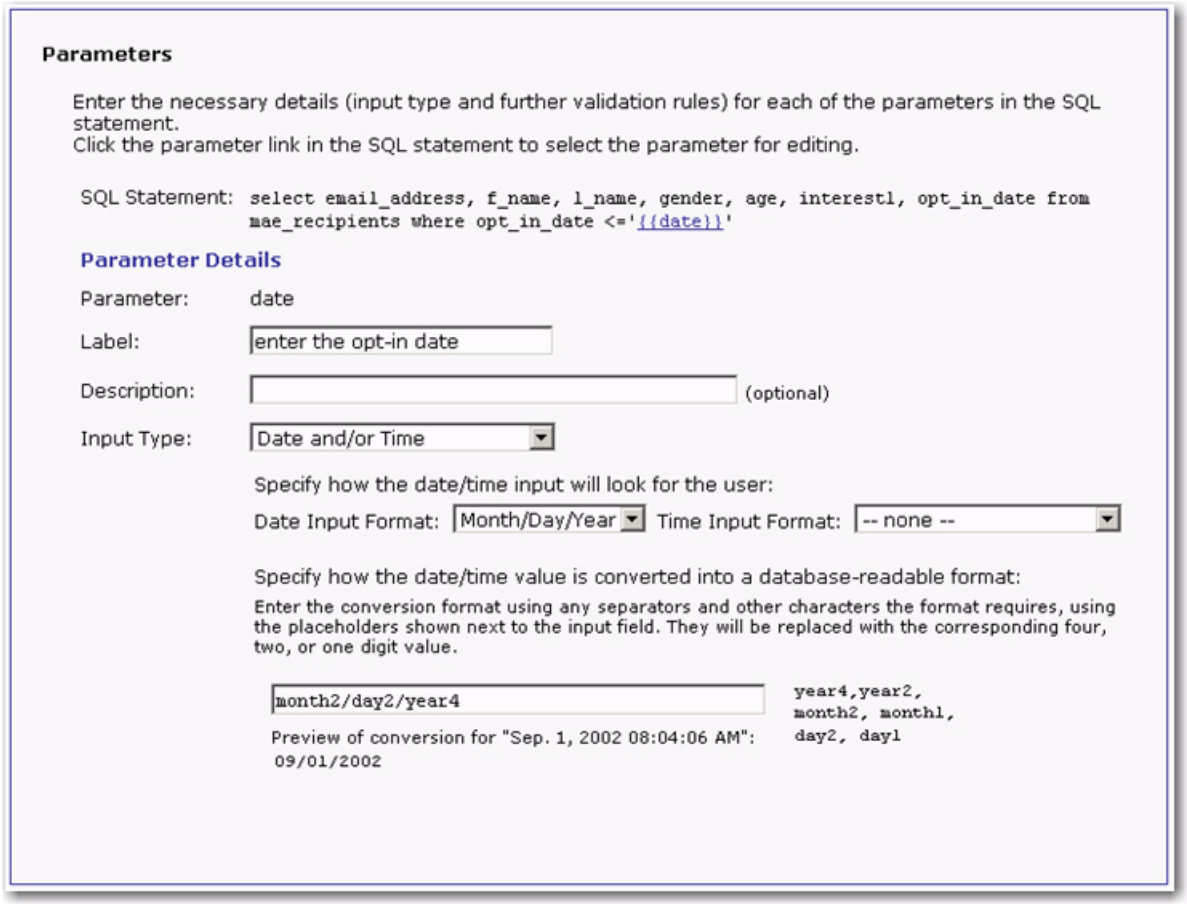
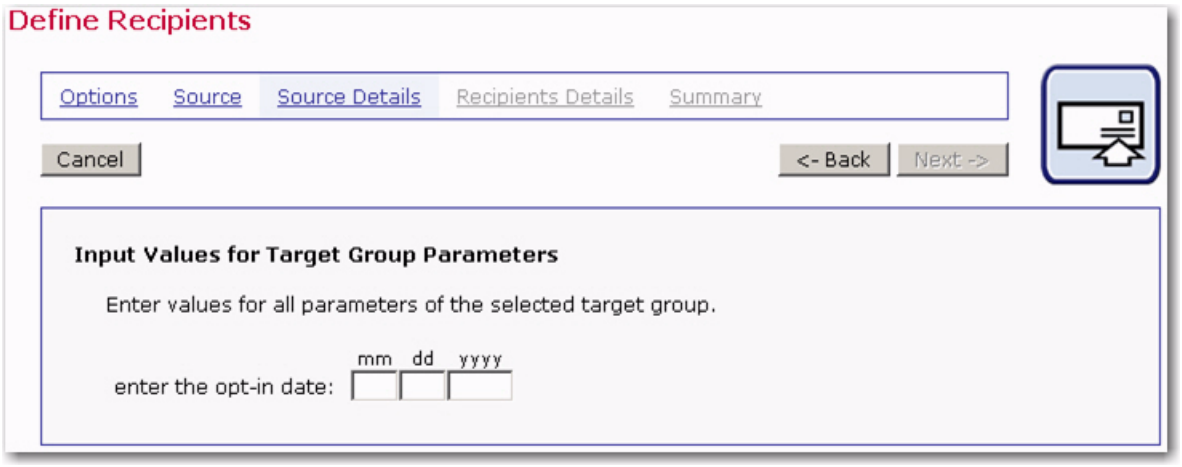


Figure 18-9 Parameter Type Date and/or Time – End User's View



Important: This database format always requires a 24h time format from 00:00:00 to 23:59:59. This input type cannot be used to generate a database time format that includes AM/PM information with hours from 1 to 12. It is also not possible to

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generate a database date format where the month or day of the week is given in long text, like "Monday, December 2nd, 2003". If such a time format is necessary, use the Edit Field type instead, and let the end user input the date and time manually in the format required by the database (use the parameter's description field to tell end users which format they need to use to be compatible with the database).

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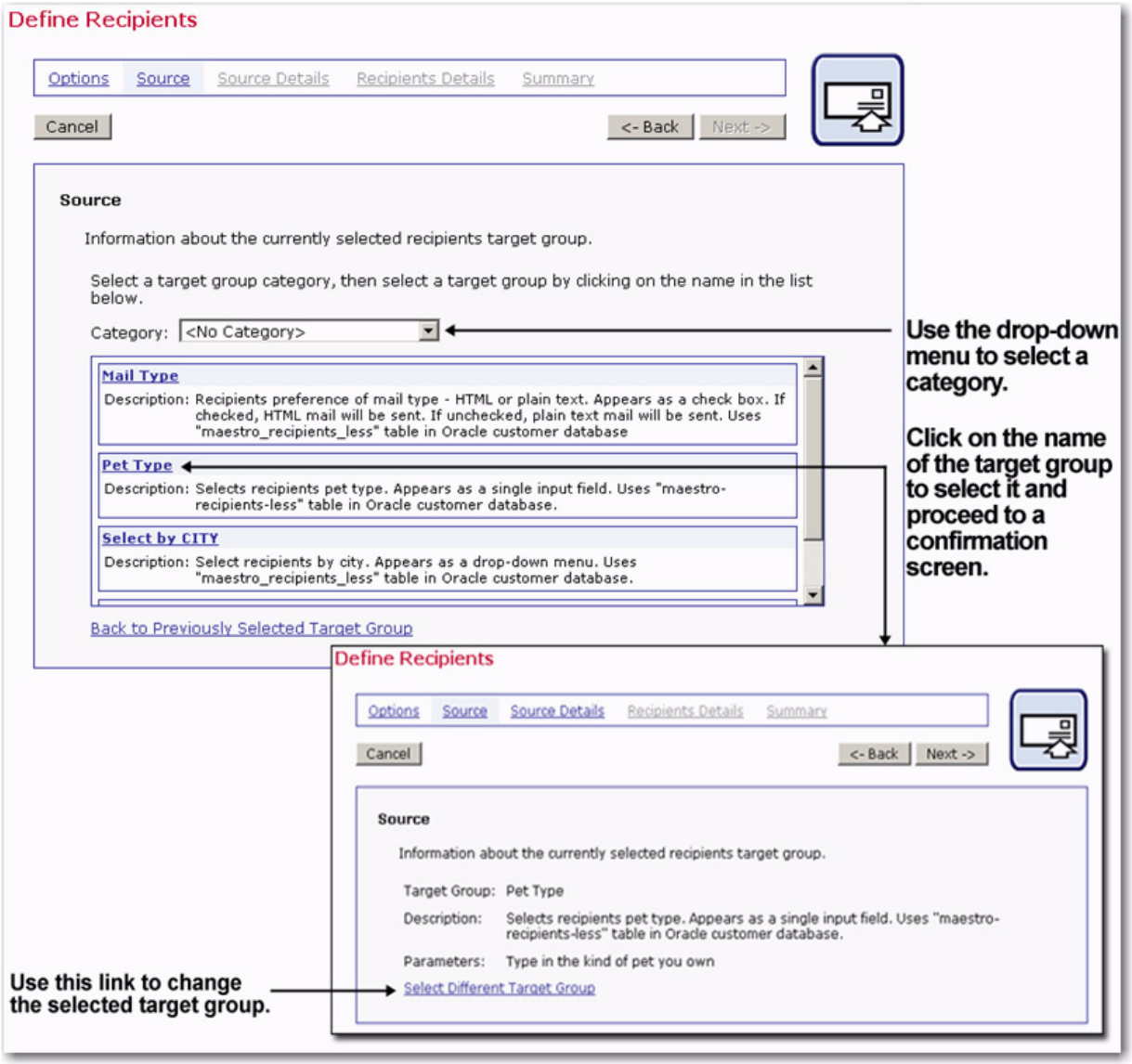
Section 19 Using Enabled Target Groups in the Recipients Wizard

Once recipient target groups have been created and enabled by the data administrator, then they can be used in the Define Recipients wizard to define recipients for an email job. For more information on using the Define Recipients wizard, see Section 4 Defining Recipients of an Email Job in the LISTSERV Maestro User's Manual.

The Define Recipient wizard is comprised of five separate screens. On Options screen, users can elect to **Send to a Recipient target group**. The Source screen will then contain a listing all of the available target groups. The data administrator may place target groups on this screen within categories for organizational purposes.

Figure 19-1 Source Screen for Recipient Target Groups



Use the drop-down menu to select a category (if appropriate). Once the category is selected, the target groups listed in the table will change to list only those in that category. To select a target group to use for the recipients list, click on the name of the target group. The Source screen will confirm the selection. If the selection is correct, click the

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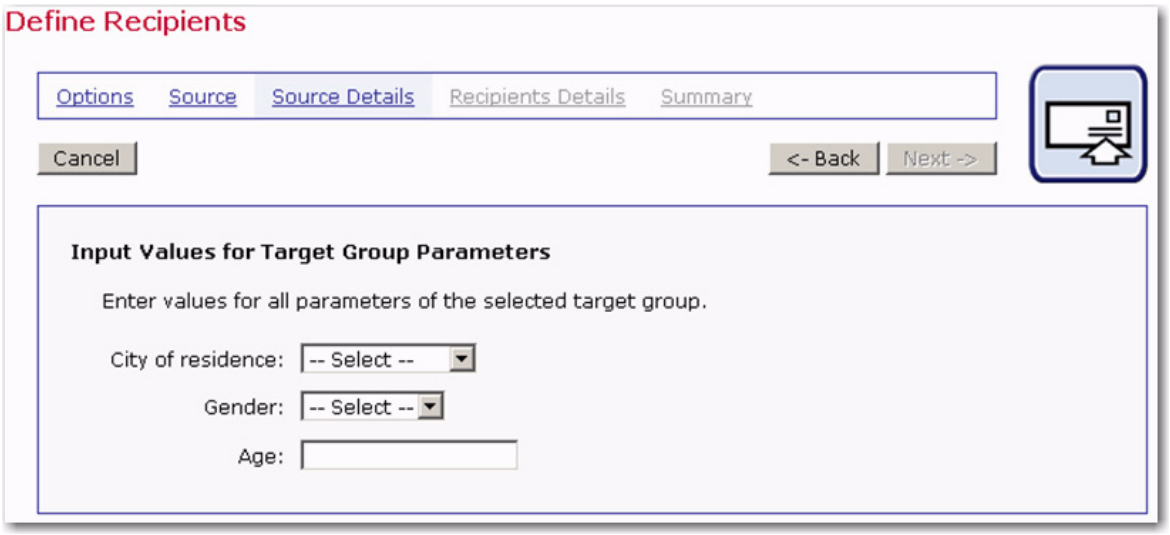
[Next ->] button. To change the target group, click the **Select Different Target Group** link.

Click **[Next->]** to continue onto the Source Details screen.

If there are parameters in the SQL statement, the Source Details screen will display the input values for the target group parameters. This screen will appear the same as the Input Preview screen does in the Target Group Definition wizard. Make the desired selections from the checkboxes, drop-down menus, and/or input boxes.

Figure 19-2 Define Recipients Using a Target Group



Click **[Next->]** to continue.

Note: Since all further settings, such as header usage and duplicate elimination, have already been defined during the creation of the target group, the Recipients Details screen is not necessary and there is no duplicate elimination item on the Summary screen. The Source Details screen will go directly to the Summary screen. From there, click the **[Finish]** button to save the recipient definition for the job and return to the Workflow diagram.

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Appendix A: Using Formulas in Hosted Recipient List Target Groups

In LISTSERV Maestro, calculation formulas are available in the condition tree of target groups of the **Hosted Recipient List** type and in the context of the special "`*Calc`" system drop-in. This appendix describes the syntax and semantics of these calculation formulas.

A formula is a sequence of expressions that are combined with operators into more complex expressions. Expressions can be optionally nested with parenthesis and make use of a few pre-defined functions.

Examples for formulas are:

```
15 + 4
27 * Max(17, 4, 24/8) / (19 + 22)
&NAME; + "@lsoft.com"
(ToNum(&AGE;) - 2004) * 10
ToDate(CurrentTimeMillis, "MM/dd/yyyy HH:mm")
```

The following sub-sections explain all aspects of formulas in detail.

Expressions

Operands can be of the **number** type or of the **text** type. They can appear in different "shapes", which are described in the following sub-sections.

For **number** type expressions, the number can be any integer number in the range

`-9223372036854775808` to `9223372036854775807`

Floating point numbers are not possible in LISTSERV Maestro formulas.

The text can be any character string for text type expressions.

Constant Number Expressions

Restriction: None. Constant number expressions can be used in any formula.

Type: Constant number expressions are, as the name implies, always of the **number** type.

Usage: To include a constant number in a formula, simply type the number using only the digits "`0`"-"`9`" (do not use "`,`" as a thousands-separator or "`.`" as a decimal point). Negative numbers must have a leading minus sign "–".

Examples:

```
1
0
537
-17
007
```

Constant Text Literal Expressions

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Restriction: None. Constant text literal expressions can be used in any formula.

Type: Constant text literal expressions are, as the name implies, always of the **text** type.

Usage: To include a text literal in a formula, type the characters desired and denote the beginning and the end of the text literal by enclosing the whole string in quotation marks <"">. There must not be any line breaks in the text string.

Since the text literal must be quoted, it must also follow the rules for quote escaping.

Examples:

```
"example"
"this is a text string"
"This string contains ""quotes"" which are therefore escaped"
"   this string has three spaces at the beginning and end   "
```

Standard Merge Field Expressions

Restriction: Standard merge field expressions are only allowed if the formula is used in one of the following contexts:

- In the condition tree of a "Hosted Recipient List" target group
- In a "`*Calc`" system drop-in of a job with the recipients type
  - **Uploaded CSV text file**, or
  - **LISTSERV Maestro selects from a Database**, or
  - **Target Group** (if the target group is based on either of the two above or on a **Hosted Recipient List**).

If the system drop-in is used in a job with a different recipient type, the formula must not contain any merge field expressions (if it does, an error message will appear during test delivery).

Type: Standard merge field expressions can either be of the **number** or **text** type, depending on their context or content (see the Type Determination below for details).

Usage: To include a standard merge field in a formula, type the merge field name enclosed in "`&`" and "`;`". Only merge field names that are actually defined in the recipient list can be used.

Examples:

```
&NAME;
&STATE;
&ACCOUNT_BALANCE;
```

Type Determination: Whenever a merge field appears in a formula, it will first be replaced with the field value for the current recipient before the result of the formula is calculated for that recipient. To be able to do this calculation, the expression's type is determined as follows:

- If the formula is used in the condition tree of a "Hosted Recipient List" target group or in a "`*Calc`" system drop-in together with recipients based on such a target group, then the type of each merge field is already defined by the profile field's type, which was defined during creation of the associated hosted recipient list:
  - Profile fields of the **number** type have the number expression type.

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- Profile fields of the **text** type have the text expression type.
- Profile fields of the **Single Selection** type have the text expression type.
- Profile fields of the **Boolean** and **Multiple Selection** types are not allowed to be used in formulas at all.

This determination of the type is already done during parsing of the formula.

- If the formula is used in a "`*Calc`" system drop-in with the recipients types "uploaded CSV text file" or "LISTSERV Maestro selects from a database", then the type of the field is determined by the field's content as follows:
  - If the field's content can be interpreted as a number, the type "number" will be used. If it cannot be interpreted as a number, (or is empty) the type "text" will be used (empty content will become an empty text string).
  - Consequently, to use the merge field in a location of the formula where a "number" type is required, make sure that the field's content can be interpreted as a number for *all* recipients. Otherwise, the field will have the type "text" for some recipients, which would cause the calculation of the formula to fail, so the job itself would fail as well.
  - This determination of the type is done during delivery, when the merge-values of all recipients are known.

Special Note: If the formula is used in the condition tree of a "Hosted Recipient List" target group or in a "*Calc" system drop-in together with recipients based on such a target group, then only profile fields which are defined in the hosted recipient list as "mandatory" are allowed as **standard merge field** expressions. Fields defined as "optional" must use the **optional merge field** expression instead.

Optional Merge Field Expressions

Restriction: Optional merge field expressions are only allowed if the formula is used in one of the following contexts:

- In the condition tree of a "**Hosted Recipient List**" target group
- In a "`*Calc`" system drop-in of a job with the recipients type
  - **Uploaded CSV text file**, or
  - **LISTSERV Maestro selects from a Database**, or
  - **Target Group** (if the target group is based on either of the two above or on a **Hosted Recipient List**).

If the system drop-in is used in a job with a different recipient type, the formula must not contain any merge field expressions (if it does, an error message will display during test delivery).

Type: Optional merge field expressions can be of the **number** or **text** type, depending on their context or content (see the Type Determination below for details).

Usage: Optional merge fields are fields that may be undefined (empty) for at least some recipients in the recipient list. Recipients with a blank field would not have the result of the calculation formula displayed in their content.

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An optional merge field expression is written in the following way:

```
[&FIELD_NAME; DEFAULT]
```

The whole expression is enclosed in brackets "[" and "]". Between the brackets, type the name of the merge field being addressed and enclose it with "&" and ";". Then, type the default that will be used for all recipients where the merge field itself is undefined.

The default that is replaced by "DEFAULT" as shown above must be a constant number or a constant text literal.

Examples:

```
[&NAME; "no name"]
[&NAME; ""]
[&STATE; "n/a"]
[&ACCOUNT_BALANCE; 0]
```

(Note: the second example defines an empty text as the default for &NAME;.)

Type Determination: Whenever any such merge field appears in a formula, it will first be replaced with the field value for the current recipient, or if that value is undefined or empty, it will be replaced with the given default. Then the result of the formula is calculated for that recipient. To be able to do this calculation, the expression's type is determined just like for **standard merge field** expressions.

In addition, if the field's value is empty or undefined, the type will be determined by the type of the given default. Make sure that the type of the default matches the field's type or is at least convertible into that type (see Automatic Type-Conversion).

Function Expressions

Restriction: Functions can usually be used in any formula. However, there may be individual restrictions that apply only to certain functions. See the function descriptions for details.

Type: The type depends on each function. See the function descriptions for details.

Usage: To include a function in a formula, simply type the function name possibly followed by an argument list in parenthesis. See the function description for details concerning whether arguments are required by a certain function and what they mean. Note that function names are case sensitive and that any parenthesis enclosing the argument list must immediately follow the function name, without any space in between.

Examples:

```
Abs(-20)
Max(15, &AGE;)
ToLower("Convert this string to ALL Lowercase")
Min(-10, -11, &SIZE_A;, &SIZE_B;)
```

Available Functions: The currently available functions are described in Formula Functions.

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Operators

Operators always work on two operands, which may be any valid expressions. Some operators require their operand expressions to be of the **number** type while others require them to be of the **text** type.

Operators for Number Operands

The following operators require both operand expressions to be of the number type:

+ Addition operator (sum of both operands)

- Subtraction operator (difference of both operands)

***** Multiplication operator (product of both operands)

/ Integer-Division operator (integer-quotient of both operands)

% Modulo operator (remainder of integer-division of both operands)

Note: In LISTSERV Maestro, the division is strictly an integer division. Any decimal places in the result are discarded; they are *not* rounded off, but simply ignored.

Operators for Text Operands

The following operators require both operand expressions to be of the **text** type:

+ Concatenation operator (appends both operands)

The concatenation operator takes the two text operands and simply appends the text string on the right-hand to the end of the text string on the left-hand. The result is one string that contains the two strings concatenated together.

The character "+" is used both to denote the addition operator for number operands as well as the concatenation operator for text operands. So if a "+" appears anywhere in the formula, LISTSERV Maestro must first determine if in this context the addition or the concatenation operator is meant. It simply does so by looking at the operands. If both operands are of the **number** type, then the "+" is interpreted as the addition operator and the result will be of the **number** type too.

If at least one of the operands is of the **text** type, then the "+" is interpreted as the concatenation operator and the result will be of **text** type. If the other operand is of the **number** type, it is automatically converted to **text** first, see Automatic Type-Conversion.

Operator Precedence and Parenthesis

Formulas are processed by LISTSERV Maestro following the usual mathematical conventions:

The **multiplication/division** type operators ("*", "/" and "%") have higher precedence than the **addition/subtraction** type operators ("+" and "−").

Operators with higher precedence are processed first, if several operators with the same precedence level are encountered. They are processed from left to right. Parenthesis can be set freely to influence precedence: Inner parenthesis will be processed before outer parenthesis.

Examples:

```
15 + 3 * 4
```
Result: 27

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```
8 * (7 - 3)          Result: 32
17 * 22 / 2 % 5      Result: 2
17 * (22 / 2 % 5)    Result: 17
17 * (22 / (2 % 5))  Result: 187
```

Automatic Type-Conversion

Operators and functions usually require their operands and arguments to be of a certain type. However, under one circumstance it is possible to supply an expression of a different type as an operand or argument, which will then automatically be converted to the required type:

Whenever an operand or argument of the **text** type is required, an expression of the **text** type or of the **number** type can be used. In the latter case, the number will first be converted into text before the operator or function is applied. For this conversion, the number-value is simply converted into the corresponding string representation, for example the number 157 becomes the text string `"157"`.

Formula Functions

The following tables describe the functions that are available for use in LISTSERV Maestro formulas.

„Abs“ Abs(arg)	
Function:	Returns the absolute value of the given **number** argument.
Return-Type:	**Number**
Arguments:	arg – **Number** type: The argument whose absolute value is to be determined.
Examples:	Abs(-10), Abs(&VALUE;), Abs(30 - &ACCOUNT; * 2)

“CurrentMillis” CurrentMillis	
Function:	Returns the current time, in milliseconds since “Jan. 1st 1970, 00:00:00 GMT”.
Return-Type:	**Number**
Arguments:	None.
Examples:	CurrentMillis

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"IndexOf" IndexOf(text, searchtext [, startindex])	
Function:	Searches for an appearance of the text "searchtext" in the given "text". Returns the zero-based index of the first appearance of "searchtext", or "-1" if none was found. Optionally, a zero-based "startindex" can be specified with the effect that the search in "text" will not start at the beginning of "text" but at the character position specified by "startindex".
Return-Type:	**Number**
Arguments:	text – **Text** type: The text string to search in. searchtext – **Text** type: The string to search for. The third argument is optional: startindex – **Number** type: The character position at which the search shall be started. If not given, the search will always start at the first character (index "0").
Examples:	IndexOf("a longer text", "lo"), IndexOf("abc def abc def", "abc", 4)

"Length" Length(text)	
Function:	Returns the length of the given text string (the number of characters in the text).
Return-Type:	**Number**
Arguments:	text – **Text** type: The text whose length shall be determined.
Examples:	Length("some text"), Length(&FULL_NAME;)

"Max" Max(arg1, arg2 [, arg3, ... , argN])	
Function:	Returns the greatest of all given **number** arguments.
Return-Type:	**Number**

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Arguments:	arg1 – **Number** type: The first argument to find the maximum of. arg2 – **Number** type: The second argument to find the maximum of. Further arguments are optional: arg3 – **Number** type: The third argument to find the maximum of. … argN – **Number** type: The N^{th} argument to find the maximum of.
Examples:	Max(3, -4), Max(17, 22, 4), Max(82, &VALUE; * 7)

"Min" Min(*arg1*, *arg2 [*, *arg3*, ... , *argN]*)	
Function:	Returns the smallest of all given **number** arguments.
Return-Type:	**Number**
Arguments:	arg1 – **Number** type: The first argument to find the minimum of. arg2 – **Number** type: The second argument to find the minimum of. *Further arguments are optional:* arg3 – **Number** type: The third argument to find the minimum of. … argN – **Number** type: The N^{th} argument to find the minimum of.
Examples:	Min(13, 2), Min(17, -&VALUE;, 4 * -17)

"Pow" Pow(*base*, *exp*)	
Function:	Returns the value of the first argument raised to the power of the second argument.
Return-Type:	**Number**
Arguments:	base – **Number** type: The base argument. exp – **Number** type: The exponent argument.
Examples:	Pow(2, 8), Pow(&BASE;, &EXPONENT;)

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"Random" Random[(threshold)]	
Function:	Returns a pseudo-random number in a range specified by the argument. No argument given: The range is from 0 to the largest possible **number** value. One argument given: The range is from 0 to the value of the given argument minus one (i.e. "0" to "threshold-1").
Return-Type:	**Number**
Arguments:	The argument is optional: threshold – **Number** type: The threshold value for the random number. The random number will range from "0" to "threshold – 1".
Examples:	Random, Random(6), Random(&MAX_RANDOM;), Random(&VALUE; - 17 * &MAX;)

"SubscribeTimeMillis" SubscribeTimeMillis	
Function:	Returns the time at which the subscriber subscribed to the hosted recipient list referenced by the target group in whose context the formula is used, represented in milliseconds since "Jan. 1st 1970, 00:00:00 GMT".
Return-Type:	**Number**
Restriction:	Can only be used in formulas in the condition tree of a **Hosted Recipient List** target group or in a "*Calc" system drop-in together with recipients based on such a target group. Will not be accepted in formulas for a different recipient type.
Arguments:	None.
Examples:	SubscribeTimeMillis

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"Substring" Substring(originaltext, startindex [, endindex])	
Function:	Returns a text substring that has been extracted from the given original text string according to the other argument(s) specified: The substring begins with the character in "originaltext" at the position specified by "startindex". If no "endindex" is given, the substring extends to the end of the original string. If "endindex" is given, the substring extends to the character at position "endindex – 1", i.e. the character at "endindex" is the first character that is not part of the substring. **Note:** all indices are zero-based, i.e. the index of the last character in the original string is at the position "length of original string minus 1".
Return-Type:	**Text**
Arguments:	originaltext – **Text** type: The original text string from which the substring will be extracted. startindex – **Number** type: The beginning index, inclusive, zero-based. The third argument is optional: endindex – **Number** type: The ending index, exclusive, zero-based.
Examples:	Substring("original text", 5), Substring("original text", 3, 3 + &VALUE;)

"ToDate" ToDate(datevalue, formatpattern [,localename | langcode,countrycode])	
Function:	Returns a formatted representation of a numerical date/time value. The formatted representation is usually returned as **text**, but may also be returned as a **number**, if applicable. The format that is used to create the representation is specified with the given format argument. **Note:** For formatting purposes, LISTSERV Maestro uses the U.S. locale and the time zone of the server where the LUI component is running by default. Locale text, like weekday names, names of months, etc., will be formatted using the U.S. locale. Similarly, times will be formatted using the server's time zone. To specify a different locale, use the optional parameter "localename" to choose a predefined locale or the optional parameters "langcode" and "countrycode" to specify your own locale. See Date and Time Patterns for details.
Return-Type:	Usually **Text**. However, may be **Number**, if the result can be expressed as a number.

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Arguments:	datevalue – Type **Number**: The date/time value to format. Must contain the desired date/time represented as milliseconds since "Jan. 1st 1970, 00:00:00 GMT" (for example from the output of the functions "CurrentMillis", "SubscribeTimeMillis" and "ToMillis"). formatpattern – Type **Text**: Specifies the format pattern to use to convert the milliseconds value in "datevalue" into the formatted representation. The following arguments are optional: Either you supply no further argument at all... Or you supply only the following argument: localename – **Text** type: A name of a predefined locale. See section The following tables describe the functions that are available for use in LISTSERV Maestro formulas. for a list of available locale names. If specified, any locale specific text in the formatted date/time representation will be given according to this locale. Or you supply both the following two arguments: langcode – **Text** type: A lowercase two-letter ISO-639 language code specifying the language for the locale. See for example http://ftp.ics.uci.edu/pub/ietf/http/related/iso639.txt for a list of the ISO-639 language codes. countrycode – **Text** type: An uppercase two-letter ISO-3166 country code specifying the country for the locale. See for example http://userpage.chemie.fu-berlin.de/diverse/doc/ISO_3166.html for a list of the ISO-3316 country codes. If "langcode" and "countrycode" are specified, they are used to create a locale for the given language and country, and any locale specific text in the formatted date/time representation will be given according to this locale.
Examples:	ToDate(CurrentMillis, "MMM dd. yyyy") (formats the current date using the default U.S. locale) ToDate(CurrentMillis, "MMM dd. yyyy", "Germany") (formats the current date using the pre-defined locale for Germany) ToDate(CurrentMillis, "MMM dd. yyyy", "de", "AT") (formats the current date using a custom locale for language "de" =German and country "AT" =Austria)

"ToLower" ToLower(text)	
Function:	Returns the given text argument with all letters converted to lowercase letters.
Return-Type:	Text
Arguments:	text – **Text** type: The text string to convert to lowercase.

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Examples:	ToLower("Convert All UPPERCASE to Lowercase")

"ToMillis" ToMillis(datetext, formatpattern [, localename | langcode, countrycode])	
Function:	Returns the numerical value representing the date/time as parsed from a text string argument, where the numerical value specifies the date/time in milliseconds since "Jan. 1st 1970, 00:00:00 GMT" (can then be compared to the output of the functions "CurrentMillis" and "SubscribeTimeMillis" or be used as input to "ToDate"). The format used to parse the given date/time text string is specified with the given format argument. **Note:** For parsing purposes, LISTSERV Maestro will by default assume the U.S. locale and the time zone of the server where the LUI component is running, i.e. if locale specific texts, like weekday names, names of months, etc., are contained in the date/time text string, they must appear with the correct names of the U.S. locale. Similarly, times given in the date/time text string will be interpreted as relative to the server's time zone. To specify a different locale, use the optional parameter "localename" to choose a predefined locale or with the optional parameters "langcode" and "countrycode" to specify your own locale. See Date and Time Patterns for details. To specify the time as relative to a different time zone, include a time zone value in the date/time text.
Return-Type:	Number

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Arguments:	datetext – **Text** type: The date/time text string to parse. Must contain the desired date/time in a textual format which can be parsed by applying the given format pattern. formatpattern – **Text** type: specifies the format pattern to use to parse the "datetext". See Date and Time Patterns for details. The following arguments are optional: Either you supply no further argument at all... Or you supply only the following argument: localename – **Text** type: A name of a predefined locale. See Date and Time Patterns for a list of available locale names. If specified, any locale specific text in "datetext" will be expected according to this locale. Or you supply both the following two arguments: langcode – **Text** type: A lowercase two-letter ISO-639 language code specifying the language for the locale. See for example http://ftp.ics.uci.edu/pub/ietf/http/related/iso639.txt for a list of the ISO-639 language codes. countrycode – **Text** type: An uppercase two-letter ISO-3166 country code specifying the country for the locale. See for example http://userpage.chemie.fu-berlin.de/diverse/doc/ISO_3166.html for a list of the ISO-3316 country codes. If "langcode" and "countrycode" are specified, they are used to create a locale for the given language and country, and any locale specific text in "datetext" will be expected according to this locale.
Examples:	ToMillis("February 22. 2004", "MMMM dd. yyyy") (parses the given date using the default U.S. locale) ToMillis("Februar 22. 2004", "MMMM dd. yyyy", "Germany") (parses the given date using the pre-defined locale for Germany) ToMillis("Februar 22. 2004", "MMMM dd. yyyy", "de", "AT") (parses the given date using a custom locale for language "de" =German and country "AT" =Austria)

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"ToNum" ToNum(text)	
Function:	Tries to parse a number from the given text string and returns that number. Generates an error if the provided text string does not contain a valid number (for example letters). Can be used to convert a profile field which is of type **text** but still only contains numbers to the type **number**, which can then be used in contexts that require the type **number** (such as **number** operators and functions requiring a **number** argument).
Return-Type:	**Number**
Arguments:	text – **Text** type: The text string to convert to a number.
Examples:	ToNum("12345"), ToNum(&AGE;), ToNum("123" + "456") **Note:** The result of the last example will not be the number 579, but will instead be the number 123456, i.e. first the string concatenation operator "+" is applied to the two strings and then the resulting string is converted into a number.

"ToUpper" ToUpper(text)	
Function:	Returns the given text argument with all letters converted to uppercase letters.
Return-Type:	**Text**
Arguments:	text – **Text** type: The text string to convert to uppercase.
Examples:	ToUpper("convert all lowercase to uppercase")

Date and Time Patterns

The format of the date and time patterns must be specified for the functions "`ToDate`" and "`ToMillis`" to convert a numerical date/time value (represented in milliseconds since "Jan. 1st 1970, 00:00:00 GMT") into a formatted output string or vice versa.

The pattern format described here applies to the formatting process, when a numerical date/time value is converted into a formatted text string, and to the parsing process, when a text string is parsed to convert it back into the numerical date/time value.

Important: For date/time formatting and parsing, by default the U.S. locale and the current time zone of the server where the Maestro User Interface (LUI) component is running is used. This means that if locale specific values (names of months, weekdays, era-designators, and the like) are required, they will be given as the U.S. locale values by default. Similarly, if a time is given, it will be formatted

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(or interpreted) as relative to the time zone of the server (although for parsing a specific time zone can be supplied). If the default U.S. locale is not desired, specify a locale in the "`ToDate`" or "`ToMillis`" function.

Date and Time Formats

Date and time formats are specified by pattern strings. Within pattern strings, unquoted letters from '`A`' to '`Z`' and from '`a`' to '`z`' are interpreted as pattern letters representing the components of a date or time string (see below for details). Text can be quoted using single quotes <'> to avoid interpretation. In a quoted text, the "double" single quote <''> represents a single quote. All other characters are not interpreted; they are simply copied into the output string during formatting or matched against the input string during parsing.

The following pattern letters are defined (all other characters from '`A`' to '`Z`' and from '`a`' to '`z`' are reserved). The letters are case-sensitive. The same letter has different meanings in its uppercase or lowercase version. Each pattern letter has a specific "presentation" in the created final string (during formatting) or in the parsed string (during parsing). For example, presentation types may be **Text**, **Number**, **Year** or similar. More details about the presentations and their meanings follow below.

Commonly Used Pattern Letters

Letter	Date or Time Component	Presentation	Examples
`y`	Year	Year	1996; 96
`M`	Month in year	Month	July; Jul; 07
`d`	Day in month	Number	10
`E`	Weekday	Text	Tuesday; Tue
`H`	Hour in day (0-23)	Number	0
`h`	Hour in am/pm (1-12)	Number	12
`m`	Minute in hour	Number	30
`s`	Second in minute	Number	55
`S`	Millisecond	Number	978
`a`	Am/pm marker	Text	PM

Special Pattern Letters

Letter	Date or Time Component	Presentation	Examples
`G`	Era designator	Text	AD; BC
`D`	Day in year	Number	189
`w`	Calendar week in year	Number	27
`W`	Calendar week in month	Number	2
`F`	Weekday ordinal in month	Number	2
`k`	Hour in day (1-24)	Number	24

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K	Hour in am/pm (0-11)	Number	0
z	Time zone	General time zone	Pacific Standard Time; PST; GMT-08:00
Z	Time zone	RFC 822 time zone	-0800

Notes: The value of “calendar week in year” and “calendar week in month” depends on the locale that is used. The locale determines the conventions about which weekday is interpreted as the first day of the week (usually “Monday” or “Sunday”) and under which circumstances a week that falls partially into one year (or month) and partially into the next, is interpreted as belonging to the one year (or month) or the other. The “weekday ordinal in month” indicates the ordinal number of the weekday of the given date/time in the given month. For the first Monday in a month, the ordinal is “1”, as it is for the first Tuesday, Wednesday and so on. For the second Monday in a month, the ordinal is “2”, and so on.

Presentation Description

Pattern letters are usually repeated, as their number determines the exact presentation:

- **Text**: For formatting, if the number of pattern letters is four or more, the full form is used; otherwise, a short or abbreviated form is used if available.

  For parsing, both forms are accepted, independent of the number of pattern letters.

- **Number**: For formatting, the number of pattern letters is the minimum number of digits, and shorter numbers are zero-padded to this amount.

  For parsing, the number of pattern letters is ignored unless it is needed to separate two adjacent fields.

- **Year**: For formatting, if the number of pattern letters is two, the year is truncated to 2 digits; otherwise it is interpreted as a “Number” (see above).

  For parsing, if the number of pattern letters is more than two, the year is interpreted literally, regardless of the number of digits. So using the pattern “`MM/dd/yyyy`”, the text “`01/11/12`” parses to Jan. 11, 12 AD.

  For parsing with the abbreviated year pattern (“`y`” or “`yy`”), LISTSERV Maestro must interpret the abbreviated year relative to some century. It does this by adjusting dates to be within 80 years before and 20 years after the current time. For example, using the pattern “`MM/dd/yy`” on Jan. 1, 1997, the text “`01/11/12`” would be interpreted as Jan. 11, 2012, while the text “`05/04/64`” would be interpreted as May 4, 1964. During parsing, only strings consisting of exactly two digits will be parsed into the default century. Any other numeric string, such as a one digit string, a three or more digit string, or a two digit string that is not all digits (for example “`-1`”), is interpreted literally. Therefore, “`01/02/3`” or “`01/02/003`” are parsed, using the same pattern, as Jan. 2, 3 AD. Likewise, “`01/02/-3`” is parsed as Jan. 2, 4 BC.

  - **Month**: If the number of pattern letters is one or two, the month is interpreted as “Number”, if it is 3 or more, it is interpreted as “Text”. Therefore, if the month is interpreted as “Number” or “Text”, the applicable “Number”/ “Text”

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interpretation rules apply (see above). For example: 1 letter will be a “Number” that is not padded, 2 letters will be a “Number” that is padded, 3 letters will be a “Text” using the abbreviated form and 4 or more letters will be a “Text” using the long form.

- **General time zone**: For formatting, the time zone is handled as “Text” if it has a name. If not, it is given as a GMT offset value in the format “`GMT[+|-]HH:MM`”, where “`HH`” is the hours between 0 and 23 (one or two digits, may be zero-padded to the left) and “`MM`” is the minutes between 00 and 59 (always two digits, zero-padded to the left if necessary). For example, “`GMT+8:00`”, “`GMT+08:00`”, “`GMT-12:45`”.

For parsing, see “Time zone parsing” below.

- **RFC 822 time zone**: For formatting, the RFC 882 4-digit time zone format is used: “`[+|-]HHMM`”, where “`HH`” is the hours as two digits, between 00 and 23 (zero-padded to the left if necessary) and “`MM`” is the minutes as two digits, between 00 and 59 (zero-padded to the left if necessary).

  For parsing, see “Time zone parsing” below.

- **Time zone parsing**: For parsing of a time zone, it does not matter if the format pattern specifies a “General time zone” or a “RFC 822 time zone”: In both cases, all three types of time zone specifications are accepted:
  - Time zone given as “Text” (if given with a name recognized by LISTSERV Maestro).
  - Time zone given as GMT offset (see “General time zone”).
  - Time zone given as RFC 882 4-digit notation (see RFC 822 time zone).

Examples

The following examples show how date and time patterns are interpreted in the default U.S. locale with the “U.S. Pacific Time” time zone. The given date and time are “`2001-07-04 12:08:56`” local time in that time zone.

Date and Time Pattern	Result
`"yyyy.MM.dd G 'at' HH:mm:ss z"`	`2001.07.04 AD at 12:08:56 PDT`
`"EEE, MMM d, ''yy"`	`Wed, Jul 4, '01`
`"h:mm a"`	`12:08 PM`
`"hh 'o''clock' a, zzzz"`	`12 o'clock PM, Pacific Daylight Time`
`"K:mm a, z"`	`0:08 PM, PDT`
`"yyyyy.MMMMM.dd GGG hh:mm aaa"`	`02001.July.04 AD 12:08 PM`
`"EEE, d MMM yyyy HH:mm:ss Z"`	`Wed, 4 Jul 2001, 12:08:56 -0700`
`"yyMMddHHmmssZ"`	`010704120856-0700`

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Appendix B: About Comma Separated Files

The term "comma separated format" (or "tab separated format" or “CSV”) is often used as a catchall term for all kinds of text-based data formats, where the data is formatted in a line-by-line fashion. Each line contains one data record, and a number of columns per line, where the different columns are separated by comma (or tab, or some other separator character).

LISTSERV Maestro can correctly interpret comma separated text files in various formats as long as the following rules are applied:

- Any character may be used as the separator character, although a comma, tab, or semicolon is conventional.
- The same separator character must be used in all lines for the entire file.
- All lines in the file must have the same number of columns, which means the same number of separator characters.
- Empty columns may be created in order that the same number of separator characters is present in every line of the file.
- Having two separator characters in direct succession, without any characters in between, creates an empty column.
- If a line begins with the separator character, then LISTSERV Maestro assumes the line begins with an empty column.
- If a line ends with the separator character, then LISTSERV Maestro assumes the line ends with an empty column.
- If the character that is used as the separator character also appears as part of the value of one or several of the column fields, then it is necessary to enclose the fields in quotation marks or another “quote character.”
- Any character can be used as the quote character (quotation marks, or apostrophe are conventional), except for the separator character.
- The same character must be used for the opening quote and for the closing quote.
- If quotes are used in some records in a file (especially records that appear near the end of the file), it is important to manually define the separator and quote character instead of allowing LISTSERV Maestro to attempt to parse the file automatically. By manually defining the separator and quote characters, LISTSERV Maestro is forced to look at the entire file and parse it according to the values entered for these characters. If LISTSERV Maestro attempts to parse the file automatically when it contains quote characters in some lines, but not all, then those records may be parsed incorrectly or may be rejected as invalid.
- If there is a need to include the quote character inside of the value of a field, then this character must be escaped. Escape the quote character by using it twice, in direct succession. The double appearance of the quote character will be interpreted as a single appearance that is part of the field value. Follow these basic rules for separator and quote characters.

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- If the first character in the field is the quote character, then LISTSERV Maestro assumes the field is quoted and the next not-escaped quote character marks the end of the field. The end of the field must then be followed by a separator character or by the end of a line – trailing white space after the last field of the line is allowed.
- If the first character in a field is not the quote character, then LISTSERV Maestro assumes the field is not quoted, and the next appearance of the separator character marks the end of the field.

Here are some examples:

Simple values, separated by comma, not quoted:

```
John,Doe,Denver,USA
Lucy,Summers,London,UK
Karl,Hauser,Frankfurt,DE
```

This defines a dataset with three rows, each row consisting of four fields.

Simple values, separated by comma, not quoted, with empty fields:

```
John,,Denver,USA
,Summers,London,UK
Karl,Hauser,Frankfurt,
```

This defines a dataset with three rows, each row consisting of four fields. In the first row, the second field is empty, in the second row the first field is empty and in the last row, the fourth field is empty.

Values in which some contain a comma, separated by comma, quoted with <">:

```
John,Doe,"Denver, Colorado",USA
Lucy,Summers,London,UK
Karl,Hauser,"Frankfurt, am Main",DE
```

This defines a dataset with three rows, each row consisting of four fields. The third fields in the first and last rows each have a value that contains a comma. Since this comma is inside of the quote characters, it is not interpreted as a separator comma, but instead as part of the value of the field.

Values in which some contain a comma, separated by comma, quoted with <">, with empty fields:

```
John,,"Denver, Colorado",USA
,Summers,London,UK
Karl,Hauser,"Frankfurt, am Main",
```

This defines a dataset with three rows, each row consisting of four fields. The third fields in the first and last rows each have a value that contains a comma. Since this comma is inside of the quote characters, it is not interpreted as a separator comma, but instead as part of the value of the field. Also, in each row there is an empty field.

Values in which some contain a comma and some the quote character, separated by comma, quoted with <">:

```
John ""Hammer"" Cool,Doe,"Denver, Colorado",USA
Lucy,Summers,London,UK
Karl,Hauser ""the man""","Frankfurt, am Main",DE
```


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This defines a dataset with three rows, each row consisting of four fields. The third fields in the first and last rows each have a value that contains a comma. Since this comma is inside of the quote characters, it is not interpreted as a separator comma, but instead as part of the value of the field. In addition, the first field in the first row contains the quote character, which has been escaped. Including the quotes, the field in its escaped form looks like this: `John ""Hammer"" Cool`. The two double appearances of the quote character around the word "Hammer" are not interpreted as quotes that delimit the field, but are instead interpreted as single appearances of the quote character which are part of the field value. Therefore, the un-escaped form of the field looks like this: `John "Hammer" Cool`. Similarly, the second field of the last row has the un-escaped form of `Hauser "the man″`.

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Appendix C: Email and International Character Sets

Computers store all information in the form of “bits” or their 8-bit conglomerations “bytes”. Bits are also the entities that are transferred from the sender’s computer to the recipient’s computer whenever an email message is sent. Email programs take the message and convert it to bits. The message is sent and the receiving email client program translates these bits back into a readable message for the recipient. This process takes place seamlessly for the sender and the recipient. The sender first creates a text message and the recipient receives a text message – all the converting remains behind the scenes.

In order for characters from an alphabet to be converted into bits for transmission and then converted back into the message, the bits have to be arranged into sequences representing each character in the alphabet. Matching the bit sequences to alphabetical characters is called “mapping”. Mapping bit sequences to alphabets has resulted in several different so called “character sets” (short: “charsets”) that have been defined and standardized by the international community.

In the English-speaking world, probably the most widely used charset is **ASCII** (sometimes also called US-ASCII), which is a charset that maps **7-bit** sequences to the 26 characters from the Latin alphabet. Because 7 bits have enough room for 128 characters (0-127), there are more than the 26 Latin characters in the ASCII charset: First, each character appears twice (as upper case and lower case), then there are the ten digits, 0-9, various punctuation marks like comma, dot, semi-colon, colon, dash, slash, backslash, exclamation, question mark, and so forth. There are also other characters that can act as control characters, that is, characters that have special meaning to certain protocols, such as “#” and “&”.

Used almost as frequently, at least in the western world, are the charsets from the **ISO 8859** family. These charsets map **8-bit** sequences to letters, digits, and characters from various European languages, Hebrew and Arabic. Since the ISO-8859 charsets use 8 bits, they have twice the range as ASCII – enough room for 256 characters (0-255). For convenience, all ISO-8859 charsets contain the full range of ASCII in their “lower” 128 characters; the bytes 0-127 from any ISO-8859 charset map directly to the corresponding ASCII character making ISO-8859 a superset of ASCII. The differences of each ISO charset are in the “upper” 128 characters, the bytes 128-255.

In addition to the ISO-8859 charsets, there are of course a multitude of other charsets, including the “Unicode” charset (which aims to include all characters from all languages), and, for example, charsets for the east Asian languages, such as Chinese, Japanese, and Korean.

The following charsets are currently supported by LISTSERV Maestro:

- `ISO-8859-1` Latin 1 (West European)
- `ISO-8859-2` Latin 2 (East European)
- `ISO-8859-3` Latin 3 (South European)
- `ISO-8859-4` Latin 4 (North European)
- `ISO-8859-5` Cyrillic
- `ISO-8859-6` Arabic
- `ISO-8859-7` Greek

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- `ISO-8859-8` Hebrew
- `ISO-8859-9` Latin 5 (Turkish)
- `ISO-8859-15` Latin 9 (West European, update of Latin 1 with some French and Finnish letters that were omitted in Latin 1, plus the Euro currency symbol € instead of the international currency symbol.)
- `BIG5` Traditional Chinese
- `GB-2312` Simplified Chinese
- `ISO-2022-JP` Japanese
- `EUC-JP` Japanese
- `Shift-JIS` Japanese
- `KSC-5601` Korean
- `EIC-KR` Korean
- `UTF-8` International Unicode (encoded in UTF-8 format, Unicode is a very large charset with room for almost all characters of many different languages of the world, even the many Asian characters).

The 8-bit range of 0-255 is not enough to accommodate all letters from even the European languages at once (therefore, there is a need for more than a dozen different members of the ISO-8859 family). Also, 8-bit charsets do not take into account the other major language groups of the world, such as Asian languages.

To address the limitations of 8-bit charsets, recently the **16-bit** charset **Unicode** with a range for 65536 characters has become more and more widespread. This charset contains more or less all letters and characters from the most widely used languages, as well as a set of symbols and other useful characters. LISTSERV Maestro offers Unicode in the form of its UTF-8 variant. UTF-8 is a transfer encoding for the 16-bit Unicode charset, which maps Unicode characters to one, two, or more bytes, in a way that more common characters (like ASCII characters) need fewer bytes than uncommon characters.

Again, for convenience, the first 128 characters of Unicode (0-127) are the same as in the ASCII charset, while the first 256 characters (0-255) are the same as in ISO-8859-1 (West European). A large percentage of all other letters of world languages are assigned values from 256 to 65535 (although, not even the large range of Unicode is enough to accommodate all letters from all languages).

LISTSERV Maestro and International Character Sets

What happens when international characters are used in email messages written and delivered in LISTSERV Maestro?

Internally, LISTSERV Maestro uses pure Unicode, allowing for the mixture of any characters in email, including the subject line and any data merged from uploaded files or selected from a database – as long as there is a way of inputting them. For some languages, this simply requires the installation of a special keyboard and display driver for that language.

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For sending, LISTSERV Maestro needs to decide on a charset that it can use to encode the message. Specify the charset to use while defining the content (there is a special item for this on the content definition page), or tell LISTSERV Maestro that it should attempt to automatically determine which charset is the optimal one for the text contained in the message.

In the latter case, LISTSERV Maestro scans the written text to determine the optimal charset. If the message contains characters that are displayed with the ASCII charset, then LISTSERV Maestro will choose the ASCII charset. If the message contains characters outside of the ASCII range, but can still be displayed with one of the supported ISO-8859 charsets, then LISTSERV Maestro will choose the corresponding ISO-8859 charset. Optionally (only if LISTSERV Maestro is set to allow Unicode), if the message has characters that cannot be displayed with one of the ISO-8859 charsets (for example Asian characters) or there are mixed characters from several ISO-8859 charsets, then LISTSERV Maestro will choose Unicode as the charset.

Similarly, if you have used Chinese, Japanese, or Korean characters, which can be displayed with one of the supported Asian charsets, then LISTSERV Maestro will choose such a charset. And, optionally (only if you have told LISTSERV Maestro that using Unicode is OK), if you have used characters that can not be displayed with one of the supported ISO-8859 or Asian charsets, or if you have mixed characters from several ISO-8859 charsets and/or from other languages, then LISTSERV Maestro will choose Unicode as the charset.

Once a charset is chosen, LISTSERV Maestro encodes each character as a bit sequence according to that charset. The email that is sent is then augmented by the information of which charset was used to encode it. This information is then used by the receiving mail client to decode the bit sequence into characters that can be displayed to the recipient.

For example, with ASCII charset, (where each 7-bit sequence denotes one character) the sequence “1000001” would mean the character with the decimal value 65, which is the Latin ‘A’. With the ISO-8859-1 charset, (where each 8-bit sequence denotes one character) the sequence “11000100” would mean the character with the decimal value 196, which is the umlaut ‘Ä’. However, with the ISO-8859-7 charset, (also 8-bit) the same value 196 would mean the Greek letter ‘’ instead. Consequently, the decoding scheme or charset that makes the message readable to the recipient is very important. LISTSERV Maestro takes care to include this information in the email, so that it is not lost during the transfer.

Merging Fields with International Character Sets

The issue of international character sets in combination with merging fields needs to be considered very carefully to make sure that the results of the merging appear to the recipient as intended. The main problem when merging fields containing text using international charsets is to decide which charset to use. Potentially, the characters in the body of the message require a certain charset, while some of the merge values may require a different charset. For example, a message may have English text as the body of the message but a recipient list with recipients from all over the world, with names that contain letters from various languages. It is likely that these international names would be encoded using a different charset than the text of the message. It is important to consider what happens when merging these names into the English body text.

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The effect that the chosen charset has on the merge values depends on the kind of recipients definition selected for a particular job. If recipients are **uploaded as a text file**, **based on the reaction of a previous job**, **selected from a database by the Maestro User Interface**, or come from a target group based on a **hosted recipient list**, then all recipients and their merge values are already known to the Maestro User Interface before the job is submitted to LISTSERV for delivery. LISTSERV Maestro can therefore encode each merge value with the same charset that is used for the email text. Consequently, if the values are later merged into the text, their charset will match that of the text. However, if a merge value contains a character that cannot be displayed in the charset chosen for the text, then this character will be replaced with a question mark ”?” during the encoding, and this question mark will appear in the mail that reaches the recipient to which the merge value belongs.

In the example described above, where the message body was in plain text and the recipient list was composed of recipient names from all over the world, a problem could occur because LISTSERV Maestro chooses the charset based on the message text, not on the recipient values. If the mail text itself is plain English, then LISTSERV Maestro will determine ASCII as the correct encoding for the message and the recipient data. If then the names of the international recipients are encoded as ASCII, all non-ASCII international characters will be replaced with question marks. To avoid this problem, use the same charset for the message body as was used for the merge data. If the recipients' information was uploaded as a text file, then simply use the same charset for sending as was used during the initial upload. And if the recipients information was selected from a database, then use the same charset as was used by the database (ask the database administrator for this information if it is unclear).

In summary, recipients that are **uploaded as a text file** or are **selected from a database by the Maestro User Interface**, then merge value characters that have no representation in the charset that was chosen for the mail text will be displayed as ”?”. To avoid this problem, make sure the message body is encoded with the same charset as the recipient list.

If recipients are defined by sending to an existing **LISTSERV list**, a ***hosted LISTSERV list****, or by letting* **LISTSERV select from a database**, then the Maestro User Interface will not see the actual recipients or their merge values, and cannot do any special charset encoding on them. Instead, LISTSERV will simply merge the bytes from the recipients source (from the LISTSERV list or from the database LISTSERV connects to) into the mail text. Consequently, make sure that the merge values in the original recipients source (LISTSERV list or LISTSERV DBMS) already have the correct charset for the mail they are merged into.

For example, in emails sent with ISO-8859-1 (West-European), all appearances of the byte 196 in the merge values will be interpreted as the umlaut ‘Ä’ (even if the merge value is actually a Greek word where the byte 196 should have been interpreted as a ‘’).

While mixing characters from different ISO-8859 charsets will simply display the wrong character to the recipient, mixing ASCII and ISO-8859 or ISO-8859 and Unicode may even result in characters that cannot be displayed at all. Most importantly, if the mail text uses the Unicode encoding UTF-8, then it is necessary to make sure that the merge value texts in the recipients source are also UTF-8 encoded (the byte sequence that stands for each merge value must be a valid UTF-8 encoded sequence representing a string of characters from the Unicode charset).

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Then again, it is usually not possible to define a charset for the mail and then in some way make sure that the merge values in the list or in the LISTSERV database match this charset, since those merge values have usually been stored long before the mail was created. Therefore, the best way to proceed is to check which encoding was used when the data was stored in the list or LISTSERV database (again, you might need to ask your administrator for that information) and then use the same charset for the mail.

In summary, for the recipient types of an existing **LISTSERV list** or **LISTSERV selecting from a database**, the merge value characters that have no representation in the charset that was chosen for the mail text will be displayed as a different character. The character displayed will be from the actual charset that has the same byte value (like 'Ä' from ISO-8859-1 and '' from ISO-8859-7). If there is no corresponding byte value in the charset, they may not be displayed at all.

International Character Set Recipient Names in the Mail-To-Header

The previous section outlined the problems of mixing a mail text in one language with merge values from a different language. As an example, an English text mail was described, with an international recipient list where the recipient names contain characters from many languages, with the languages possibly differing between recipients from different countries. The recipient's name as a merge value is probably one of the most common uses for merging fields – to be able to merge the recipient's name into the text of the message, to personalize the mail. If this is done, the problems described earlier need to be considered.

However, the recipient's name is also often used in the "To:" header field of the mail, so that the mail appears to the recipient with the recipient's own name visible in the "To:" field (which is usually displayed by the email client in some fashion), personalizing the email one step further.

When using recipients **uploaded as text files**, **selected from the database by the Maestro User Interface**, or that come from a target group based on a **hosted recipient list**, then the use of the name in the "To:" header field does not fall under the constraints regarding charsets and text-merging. The name in the "To:" header field will always be encoded with the charset that is optimal for exactly this name. Users may safely write an email message in English and send it to international recipients. Each recipient will see his or her name with the correct characters in the "To:" header. This means that a German recipient will correctly see umlauts, a Russian will see Cyrillic and a Greek will see Greek letters (under the condition that the original recipient list was in Unicode format and contained the names of the recipients with their respective international characters).

Just remember that with such a mixed-language list of recipients merge values, you should not also merge the name into the text body itself, unless the text is encoded as Unicode (UTF-8) as well, due to of the problems described earlier.

When using recipients that are defined by sending to an existing **LISTSERV list**, a **hosted LISTSERV list**, or by letting **LISTSERV select from a database**, then again the bytes from the name-merge value will be merged into the "To:"-header correctly by LISTSERV, without the Maestro User Interface having a chance to encode them. And, because it is very improbable that the names (the byte sequences representing them) already contain the special MIME-header encoding necessary for non-ASCII "To:"-

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header fields, then you'll have to make sure that only ASCII characters are allowed in recipient names when creating the list or database data for these recipient types.

LISTSERV Maestro and Bi-Directional Character Sets

Of the ISO-8859 charset family, there are two charsets that contain letters from languages that have a standard reading direction of right-to-left. These are the charsets ISO-8859-6 (Arabic) and ISO-8859-8 (Hebrew), both of which are supported by LISTSERV Maestro.

Actually, LISTSERV Maestro will not use the charsets with the names ISO-8859-6 and ISO-8859-8, but will instead use the special bi-directional versions **ISO-8859-6-i** and **ISO-8859-8-i**. These charsets contain the same characters as their non-i-suffix counterparts, but the "-i" suffix tells the receiving mail client that the text should be displayed with right-to-left reading direction. Without the "-i" suffix in the charset name, many email clients would probably display the correct characters, but in the (for that language) incorrect left-to-right reading direction.

Even with the "-i" suffix, the recipient might require a special mail client version (or even a special mail client) that is prepared to display text with right-to-left reading direction properly and is also able to properly display bi-directional text (text that mixes characters with left-to-right and characters with right-to-left reading direction, in the case of a Hebrew text that contains English names, for example). Some clients may only display the characters with the right direction, but still left-align each line of text, instead of the correct right-alignment. Occurrences such as this are subject to the mail client itself, and out of the scope of LISTSERV Maestro.

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Appendix D: Building Hosted Recipient Queries

LISTSERV Maestro includes its own method of build queries from hosted recipient lists by using target groups. Basic or complex queries can be created to segment (filter) a hosted recipient list based on any available data. Filtering conditions are entirely optional. If no condition is supplied, the target group will always address all current subscribers of the hosted recipient list.

When a hosted recipient list is created in LISTSERV Maestro and at least one subscriber is added, the system automatically creates a target group based on that list. This target group includes all subscribers for the hosted list. It is named after the name of the hosted recipient list on which it is based, and is saved in the category <Hosted Lists Default Target Groups>. In order to filter this list, this target group must first be copied and saved. Once copied, it can be edited by clicking on its name and entering the target group definition wizard, like any other target group. For more information on using the Target Group Definition wizard, see Section 12 Introduction to Recipient Target Groups.

Make any changes desired on the General and Source screens of the wizard, and continue to the Source Details screen. As an aid for constructing the filtering condition, all profile fields available in the hosted recipient list are displayed in the upper part of the wizard page. Each profile field is listed with its name and data type. Any mandatory fields are rendered in bold. Use this list as a reference in order to decide on which fields to define conditions.

The condition itself is based on Boolean logic, meaning that when the condition is applied to a certain subscriber, the result of the condition will always be either "true" (in which case the subscriber becomes a recipient of the job in question) or "false" (in which case the subscriber will not be a recipient of the job).

The condition is defined visually in form of a "condition tree", which is displayed in the lower part of the wizard page. The condition tree consists of hierarchically ordered nodes of various types. Each of the nodes has, for a given subscriber, a certain Boolean "true" or "false" state, where for nodes that have sub-nodes, the Boolean state of the node itself is derived by combining the Boolean states of all sub-nodes in a certain manner (how they are combined depends on the type of the node itself). The root-node of the whole tree is equivalent to the whole condition, that is the Boolean result of the condition is determined by looking at the Boolean state of the root node (which in turn derives its state by looking at its subnodes and combining them accordingly, and so on).

Nodes in the condition tree can be of one of two main types:

- Combination Operator Nodes: Such a node does not have a Boolean state itself. Instead, it derives its Boolean state by combining the states of all its subnodes. Thus its name as "Combination Operator". Such a node is never useful without any subnodes.
- Condition Nodes: Condition nodes derive their Boolean state from the condition that is defined for them: They apply the condition to a given subscriber, which results either in "true" or "false" and thus defines the Boolean state of the node. Condition nodes never have subnodes. Condition nodes come in two varieties, normal conditions and job based conditions.

The following sections describe different aspects of editing the condition tree, explain the different nodes types available, and give instructions on how to create one.

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Editing the Condition Tree

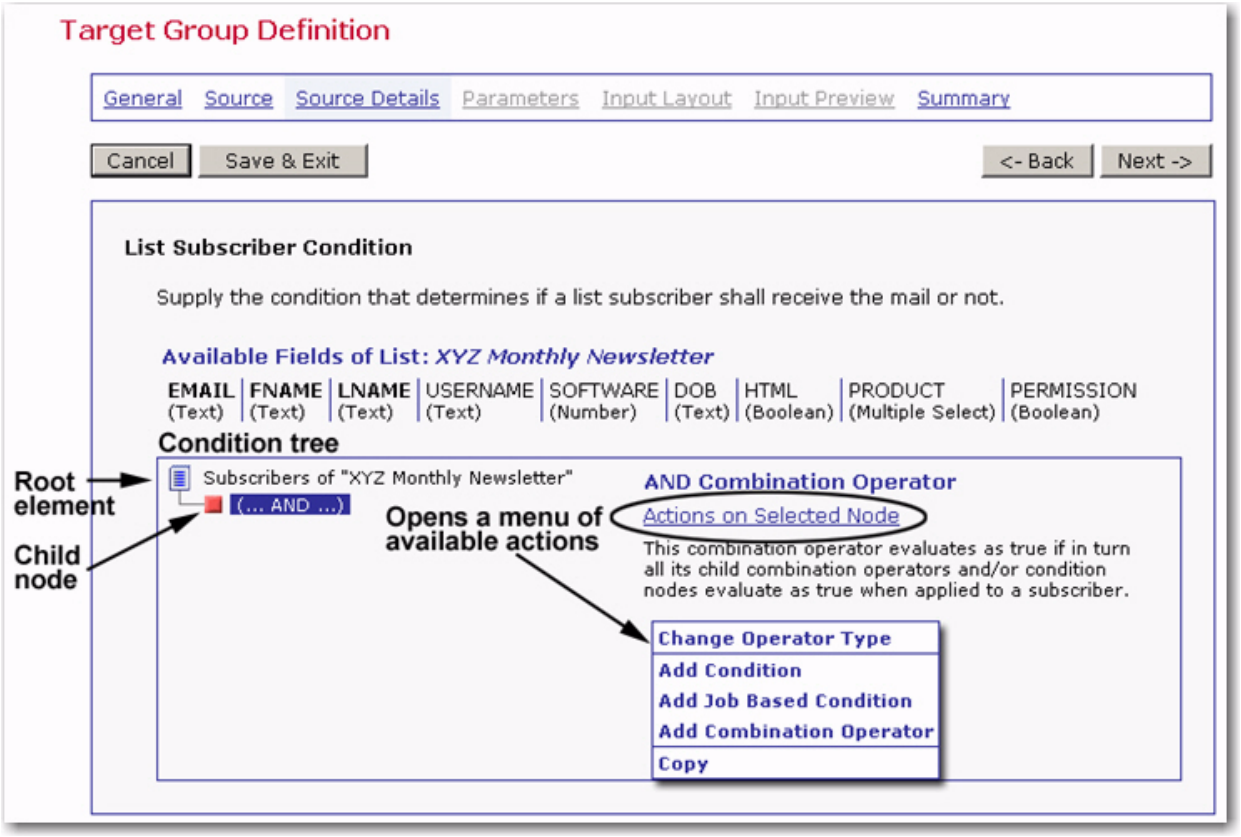
This section describes general concepts about how the condition tree is edited. The area in which the condition tree is edited is separated into two part. The tree with all its nodes is shown in the left part, while a description of the currently selected node, together with an **Actions on Selected Node** link is displayed in the right part. Below the two parts, a textual representation of the condition is displayed at all times. It mirrors the condition that is currently defined in a textual form, using a pseudo syntax with commonly used elements. With this representation, it is possible to verify that the condition defined by the tree is indeed the intended condition.

The tree itself always consists of elements. The top element is the root, labeled with "Subscribers of XYZ", where "XYZ" is the name of the hosted recipient list the target group is based on. The root always contains one single child node that is always a combination operator node. This "top level" operator cannot be deleted, but its type can be changed (see Combination Operator Nodes for details).

Initially, the top level operator is empty; it does not contain any sub-nodes. This is equivalent to an empty condition that is "true" for all subscribers of the hosted recipient list.

If a node in the tree has sub-nodes, then the node itself can be either closed (hiding the sub-nodes) or open (displaying the sub-nodes). Closed nodes are displayed with a small icon, and open nodes are displayed with a small icon. Click on the icon to open or close close a node (double-clicking the node name will not work).

Figure D-1 Condition Tree



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Clicking on a node to select it will provide a detailed description of the node on the right side of the screen, and the **Actions on Selected Node** link will be displayed on the right side. Clicking on the link will open a menu that contains all currently possible actions that can be executed on the selected node. The actions available on the menu depend on the node type and the state it is in.

For the root node, only one action is available:

- **Remove Unnecessary Nodes** – This action will "prune" the tree and remove any unnecessary nodes from it in a way that the Boolean logic of the tree is not changed, but that any superfluous nodes are removed. For example, any empty combination operator nodes are removed. If there are currently no unnecessary nodes, then executing this command will not have any effect. See Combination Operator Nodes for details.

For combination type nodes, the following actions may be available depending on the current state:

- **Change Operator Type** – Opens a popup dialog box that allows for changing the operator type of the node. There are four different types: `AND`, `OR`, `NOT AND` and `NOT OR`. See Combination Operator Nodes for details.
- **Add Condition** – Adds a new normal condition type node to the selected combination node as a new child node. See Normal Condition Nodes for details.
- **Add Job Based Condition** – Adds a new job based condition type node to the selected combination node, as a new child node. See Job Based Condition Nodes for details.
- **Add Combination Operator** – Adds a new combination operator node to the selected combination node, as a new child node. See Combination Operator Nodes for details.
- **Cut** – Marks the selected combination operator node for "Cut & Paste". When cut, the node is displayed with a "grayed" name to visualize that it has been designated for Cut & Paste. The node is not actually cut (removed from its current location) until the "Paste" command is selected at a different location. The "grayed" state is only a visual reminder that the node has been marked for "Cut". The "Cut" command is not available for the top level combination node, since this node cannot be deleted.
- **Copy** – Marks the selected combination operator node for "Copy & Paste". The node is not actually copied until the "Paste" command is selected at a different location.
- **Paste** – Completes an ongoing "Copy & Paste" or "Cut & Paste" operation that was previously started with either the "Cut" or the "Copy" command of a different node. Through the initial command, a node had been marked for cut or copy and executing the paste command completes the operation by actually moving the node from its old location to the currently selected combination node (for "Cut") or by creating a copy of the node in the currently selected combination node (for "Copy"). The "Paste" command itself is therefore only available if a node has been marked for “Cut & Paste” or “Copy & Paste”.

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- **Clear Cut/Copy State** – Aborts any ongoing Cut & Paste or Copy & Paste operation that was started with either of the commands "Cut" or "Copy". Any previously marked node will become "unmarked" and the "Paste" command will no longer be available.
- **Delete** – Deletes the selected combination node and all its sub-nodes (after confirmation). This is not recoverable. The "Delete" command is not available for the top level combination node since this node cannot be deleted.

For condition type nodes (both for normal and job based conditions) the following actions may be available, depending on the current state:

- **Edit** – Opens a popup dialog box in which the settings of the condition can be edited.
- **Insert Combination Operator** – Creates a new combination operator node and inserts it as the new parent-node of the currently selected condition node. The selected condition node will initially be the only child of the freshly created combination node and the new combination node will be placed in the same parent-node as the condition node was before.
- **Cut** – Marks the selected condition node for "Cut & Paste". In this state, the node is displayed with a "grayed" name to visualize that it has been designated for “Cut & Paste”. The node is not actually cut (removed from its current location) until the "Paste" command is selected at a different location. The "grayed" state is only a visual reminder that the node has been marked for "Cut".
- **Copy** – Marks the selected condition node for "Copy & Paste". The node is not actually copied until the "Paste" command is selected at a different location.
- **Clear Cut/Copy State** – Aborts any ongoing “Cut & Paste” or “Copy & Paste” operation that was started with either of the commands "Cut" or "Copy". Any previously marked node will become "unmarked" and the "Paste" command will no longer be available.
- **Delete** – Deletes the selected condition node (after confirmation). This is not recoverable.

Combination Operator Nodes

Combination operator nodes derive their Boolean state by examining the Boolean state of all sub-nodes and combining these states using a Boolean operator depending on the node's type. The following operator node types are available:

- Combine conditions with **AND** – Combines the Boolean states of all sub-nodes using the boolean "AND" operator, meaning that the combination is "true" only if all sub-nodes are also "true". If even a single sub-node is "false", the combination is also "false". The AND-combination is represented in the tree with the symbol and the textual representation "(... AND ...)".
- Combine conditions with **OR** – Combines the Boolean states of all sub-nodes using the boolean "OR" operator, meaning that the combination is "true" if at least one sub-

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node is "true", no matter if all others are "false". If all sub-nodes are "false", the combination is also "false". The OR-combination is represented in the tree with the symbol and the textual representation "(... OR ...)".

- Combine conditions with AND, then negate the result – The negated version of the "AND" combination described above. If the normal "AND" results in "true", this negated version results in "false". As a result, the combination is "true" if at least one sub-node is "false", no matter if all others are "true". If all sub-nodes are "true", the combination is then "false". The negated AND-combination is represented in the tree with the symbol and the textual representation "NOT (... AND ...)".

- Combine conditions with OR – The negated version of the "OR" combination described above. If the normal "OR" results in "true", this negated version results in "false". As a result, the combination is "true" only if all sub-nodes are "false". If even a single sub-node is "true", the combination is then "false". The negated OR-combination is represented in the tree with the symbol and the textual representation "NOT (... OR ...)".

The type of a combination operator can be changed for the node at any time using the **Change Operator Type** option on the Actions menu.

When performing a “Copy & Paste’ of a combination node, the node and its whole subtree (including all sub-nodes and their sub-nodes) will be copied. Similarly, when doing a Cut & Paste, the node and its whole subtree will be removed from the original location and added at the paste location.

Certain nestings of operator nodes are superfluous and will therefore be removed ("pruned") if the **Remove Unnecessary Nodes** option on the Actions menu is selected on the root node. These include:

- **Empty combination nodes** – Combination nodes without any sub-nodes are always superfluous and are always removed.
- **Combination nodes with one sub-node** – Combination nodes with only a single sub-node are superfluous only if the combination node is of the non-negated sort (a simple "AND" or "OR" combination). In that case, the combination node is removed and its only sub-node takes the combination node's place directly in the parent node.
- **Combination nodes with several sub-nodes** – Combination nodes with several sub-nodes are superfluous only if the combination node is of the non-negated sort (a simple "AND" or "OR" combination) and if the parent node of the combination node is of the same combination type. In that case, the combination node is removed and all its sub-nodes take the combination node's place directly in the parent node.

Normal Condition Nodes

Normal condition nodes derive their Boolean state by examining a condition that is defined explicitly for the given node. The condition is defined when the node is first created and can later be edited by selecting the **Edit** command from the node's Actions on Selected Node menu. The condition node is represented in the tree with the symbol and a textual representation that displays the condition in short form.

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The Edit Condition screen shows several drop-down lists and may also contain fields or selection boxes that allow for the definition of the condition for the node. On this screen, the selection controls are organized in a hierarchical order from top to bottom, where choices in the upper controls directly influence the available choices in the lower controls. Therefore, define a condition in a top-to-bottom manner, first making selections in the upper controls, then proceeding to the next control, and so on, until the bottom of the screen is reached and the whole condition is completed.

Generally speaking, each condition consists of three parts: A **left operand**, an **operator** and a **right operand**. The operator is always a Boolean operator that compares the left and right operands in a certain fashion and the result is a Boolean value of "true" or "false". This operator result is then used as the Boolean state of the condition node.

In the Edit Condition screen, these three parts are represented by five controls (usually), situated above each other. The first two controls define the left operand, the third control defines the operator, and the last two controls define the right operand.

Which operators are available in the third control, and which kinds of right operands can be defined using the last two controls depends on the selections in the first two controls, that is the left operand currently selected. The following sub-sections contain descriptions of the possible choices for each of the three parts of a condition.

Left Operand

The following choices are available for the left operand:

- **Field** – The left operand is one of the profile fields available in the hosted recipient list the target group is based on. To define an operand of this type, select "the field" from the first drop-down list. The second control then becomes a drop-down list too, where you can now select the field to use.
- **Number** – The left operand is a constant number. To define an operand of this type, select "the number" from the first drop-down list. The second control then becomes an edit field, where you can now enter the number value to use.
- **Text** – The left operand is a constant text string. To define an operand of this type, select "the text" from the first drop-down list. The second control then becomes an edit field, where you can now enter the text string to use.
- **Boolean** – The left operand is a constant Boolean value of "true" or "false". To define an operand of this type, select "the Boolean value" from the first drop-down list. The second control then becomes a drop-down list too, where you now select the Boolean value to use.
- **Formula** – The left operand is a formula. When the condition is evaluated, the formula is evaluated first and its result is used as the left operand of the condition. To define an operand of this type, select "the value of the formula" from the first drop-down list. The second control then becomes a multi-line edit field, where you now enter the formula to use. See Formulas in Conditions for details about formulas.

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Operator

The available operators are shown in the third control of the dialog box, which is always a drop-down list. Which operators are available depends on the type of the left operand. For example, there are different operators for numbers than for text strings.

- **Number Operators** – Available either if the left operand is of the **Number** type or of the **Field** type where the field in turn has the **Number** data type. The number operators are:
  - **=** (Equal) The condition is true if the two numbers are equal.
  - **<>** (Not equal) The condition is true if the two numbers are not equal.
  - **<** (Less than) The condition is true if the left number is less than the right number.
  - **<=** (Less than or equal) The condition is true if the left number is less than or equal to the right number.
  - **>** (Greater than) The condition is true if the left number is greater than the right number.
  - **>=** (Greater than or equal) The condition is true if the left number is greater than or equal to the right number.
- **Text Operators** – Available either if the left operand is of the **Text** type or of the **Field** type where the field in turn has the **Text** data type. The text operators are:
  - **=** (Equal) The condition is true if the two texts are equal.
  - **<>** (Not equal) The condition is true if the two texts are not equal.
  - **<** (Less than) The condition is true if the left text is less than the right text (lexicographic comparison).
  - **<=** (Less than or equal) The condition is true if the left text is less than or equal to the right text (lexicographic comparison).
  - **>** (Greater than) The condition is true if the left text is greater than the right text (lexicographic comparison).
  - **>=** (Greater than or equal) The condition is true if the left text is greater than or equal to the right text (lexicographic comparison).
  - **begins with** The condition is true if the left text begins with the text string given as the right operand text.
  - **ends with** The condition is true if the left text ends with the text string given as the right operand text.
  - **contains** The condition is true if the left text somewhere contains the text string given as the right operand text.
- **Boolean Operators** – Available either if the left operand is of the **Boolean** type or of the **Field** type where the field in turn has the **Boolean** data type. The Boolean operators are:

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- **=** (Equal) The condition is true if the two operands have the same Boolean value.
- **<>** (Not equal) The condition is true if the two operands have different Boolean values.

- **Element Operators** – Available if the left operand is of the **Field** type where the field in turn has the **Single Select** data type. The element operators are:
  - **=** (Equal) The condition is true if the value selected in the field defined as the left operand is equal to the right operand.
  - **<>** (Not equal) The condition is true if the value selected in the field defined as the left operand is not equal to the right operand.
  - **in** The condition is true if the value selected in the field defined as the left operand appears in the elements of the set defined as the right operand.
  - **not in** The condition is true if the value selected in the field defined as the left operand does not appear in the elements of the set defined as the right operand.
- **Set Operators** – Available if the left operand is of the **Field** type where the field in turn has the **Multiple Select** data type. The set operators are:
  - **is the same set as [equals "="]** The condition is true if the value-set selected in the field defined as the left operand is equal to the set defined by the right operand.
  - **contains only values of [subset "<="]** The condition is true if the value-set selected in the field defined as the left operand contains only values of the set defined by the right operand. Alternatively, if the left operand set is a subset of the right operand set.
  - **contains all values of [superset ">="]** The condition is true if the value-set selected in the field defined as the left operand contains all values of the set defined by the right operand. Alternatively, if the left operand set is a superset of the right operand set.
  - **contains some values of [intersects "&"]** The condition is true if the value-set selected in the field defined as the left operand contains some values of the set defined by the right operand. Alternatively, if the intersection of the left operand set and the right operand set is not empty.
  - **NOT (is the same set as) [not equals "="]** The condition is true if the value-set selected in the field defined as the left operand is not equal to the set defined by the right operand.
  - **NOT (contains only values of) [not subset "<="]** The condition is true if the value-set selected in the field defined as the left operand contains some values which do not appear in the set defined by the right operand. Alternatively, if the left operand set is not a subset of the right operand set.
  - **NOT (contains all values of) [not superset ">="]** The condition is true if the value-set selected in the field defined as the left operand does not contain all

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values of the set defined by the right operand. Alternatively, if the left operand set is not a superset of the right operand set.

- **NOT (contains some values of) [not intersects "&"]** The condition is true if the value-set selected in the field defined as the left operand does not contain any of the values of the set defined by the right operand. Alternatively, if the intersection of the left operand set and the right operand set is empty.

The "subset" and "superset" operators described above (and their negated counterparts) do not adhere strictly to the mathematical definition of a subset or superset. In mathematics, the empty set is always a subset of any other set and consequently any non-empty set is always a superset of the empty set. In regard to the empty set, the above operators behave differently. For these operators, the empty set is never a subset of any other set and similarly, no set can be a superset of the empty set.

- **Formula Operators** – Formulas as the operands are a special case when it comes to the operator: Normally, the left operand defines the data type and thus the available operators. For formulas however, the data type is not known until the formula is actually calculated. And with the data type not known, the available operators cannot be adjusted accordingly. Therefore, if the left operand is a formula, the available operators are the same as for "Text" (see "Text Operators" above) and the actual data type will be determined at run time, after the following rules:
  - If either the left or right operand is of **Text** type, then the operator will also be a text operator and the other operand is converted to text if necessary.
  - If both operands are of **Number** type and the selected operator is one which is available for numbers (such as one of the normal comparison operators =, <>, <, <=, >, >=), then two operands are compared as numbers.
  - If both operands are of **Number** type but the selected operator is not available for numbers (it "begins with", "ends with" or "contains"), then both operands are converted to text so that the operator can be applied.

Right Operand

For the right operand, the available choices also depend on which left operand has been selected. The following choices may be available:

- **Field** – Available if applicable. The right operand is one of the profile fields available in the hosted recipient list the target group is based on. To define an operand of this type, select "the field" from the drop-down list at fourth position. The last control then becomes a drop-down list as well, so that the field to use can be selected. This second list will automatically only contain fields of a type that are compatible to the left operand and the operator. The **Field** type may not be available as the right operand if there is no field that matches the data type defined by the left operand, or if the left operand is also a field but is the only field of that data type (comparisons with the same field used both for the left and right operand are not allowed).
- **Number** – Only available if the left operand is of the **Field** type and the corresponding field is of the **Number** type. The right operand is a constant number. To define an operand of this type, select "the number" from the drop-down list at

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fourth position. The last control then becomes an edit field, where you now enter the number value to use.

- **Text** – Only available if the left operand is of the **Field** type and the corresponding field is of the **Field** type. The right operand is a constant text string. To define an operand of this type, select "the text" from the drop-down list at fourth position. The last control then becomes an edit field, where you now enter the text string to use.
- **Boolean** – Only available if the left operand is of the **Field** type and the corresponding field is of the **Boolean** type. The right operand is a constant Boolean value of "true" or "false". To define an operand of this type, select "the Boolean value" from the drop-down list at fourth position. The last control then becomes a drop-down list as well, so the Boolean value to use can be selected.
- **Formula** – Only available if the left operand is of the **Number**, **Text**, **Formula**, or **Field** (where then in turn the corresponding field must be of the **Number** or **Text** type). The right operand is a formula. When the condition is evaluated, the formula is evaluated first and its result is used as the right operand of the condition. To define an operand of this type, select "the value of the formula" from the drop-down list at fourth position. The last control then becomes a multi-line edit field, where the formula can be entered. See Formulas in Conditions for details about formulas.
- **Parameter** – Only available if the left operand is of the **Field** type (any kind of field). The right operand is a parameter whose content is not already defined during the condition definition, but which will be supplied later by the end-user, when the target group the condition belongs to is used in the Define Recipients wizard. See Parameters in Conditions for details about parameters.
- **Check for "empty"** – Only available if the left operand is of the **Field** type and the corresponding field is an optional field. The right operand is the "empty" value, i.e. the condition compares the given left operand field against the empty value, using the given operator. Since only optional fields can actually be empty, this type is not available if the left operand field is a mandatory or Boolean field. To define an operand of this type, select "empty" or "the empty set" (whichever is available) from the drop-down list at fourth position. The last control then becomes invisible, because there is no more information required about the right operand.
- **Check for certain lookup table entry** – Only available if the left operand is of the **Field** type and the corresponding field is of the **Single Select** type. The right operand is a fixedly selected entry from the lookup table that the left operand field is associated with. To define an operand of this type, select "the list entry" from the drop-down list at fourth position. The last control then becomes a drop-down list too, filled out with all values from the lookup table that is associated with the left operand field. Select one of the values to use from the drop-down list.
- **Check for certain lookup table entry set** – Only available if the left operand is of the **Field** type and the corresponding field is of the **Multiple Select**. The right operand is a fixedly selected entry set from the lookup table that the left operand field is associated with. To define an operand of this type, select "the set of entries selected below" from the drop-down list at fourth position. The last control then

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becomes a multiple selection list box, filled out with all values from the lookup table that is associated with the left operand field. Select one or several of the values to use from the drop-down list (hold down `CTRL` or `SHIFT` to select multiple entries or to deselect already selected entries).

Formulas in Conditions

Formulas can be used in conditions to calculate the left and/or right operand value at "run time" – the moment the condition is actually applied to a given subscriber to determine if the subscriber will become one of the recipients of a job or not.

Such a formula is typed directly into the multi-line edit field provided by the condition definition dialog box. Line breaks in the formula code have no effect on the result of the formula but can be freely used to enhance readability.

The syntax follows general mathematical formula rules using operators such as "+" and "-", parenthesis nesting and so on. There are also a number of predefined "functions" that can be used in formulas.

Examples of formulas:

```
15 + 4
27 * Max(17, 4, 24/8) / (19 + 22)
&NAME; + "@lsoft.com"
(ToNum(&AGE;) - 2004) * 10
ToDate(CurrentTimeMillis, "MM/dd/yyyy HH:mm")
```

See Appendix A: Using Formulas in Hosted Recipient List Target Groups for a detailed description of formulas and functions.

Note: Formulas may also contain parameter placeholders, which allows for the definition of conditions with formulas, where one or several values in the formula are not known at the time the formula and condition are written, but are instead supplied later by the end user who uses this target group in the Define Recipients wizard. (See Section 18 Defining Parameters for details about how to include parameters in formulas and read the following sub-section about condition parameters in general).

Parameters in Conditions

Parameters can be used in conditions as the right operand in situations where the value of the operand is not yet known at the time the condition is defined (or will not be fixed by the condition definition), but will be supplied later by the end user when the target group is used in the Define Recipients wizard. Using this method can create conditions that are parameterized to allow for greater flexibility for the end user.

To define a right operand of this type, select the entry "the TYPE_VALUE supplied for the parameter" from the drop-down list at fourth position, where "TYPE_VALUE" will be filled out according to the type of the left operand field selected, which will therefore also already define the type of the parameter. The entry in the drop-down list will be one of the following:

- The text supplied for the parameter.

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- The numeric value supplied for the parameter.
- The Boolean value supplied for the parameter.
- The list entry supplied for the parameter.
- The set supplied for the parameter.

After this selection is made, the last control becomes an edit field, where the name of the parameter to define is entered. Enter only the name, without any enclosing tags (this is different than when using a parameter in a formula or SQL statement or LISTSERV condition, where the parameter needs to be enclosed in tags to set if off from the rest of the formula/statement/condition).

Note: If you specify the same parameter name in different condition nodes, it will be interpreted as one parameter that appears several times in the condition tree; all appearances will have the same content value and must also all appear in the same type context ("Number" or "Text" and so on.). This means that if in one condition node the selection is "the text supplied for the parameter" and as the parameter name "mytext", is specified, then if same parameter name is specified again in a different condition node, the selection must also be "the text supplied for the parameter", but not for example "the numeric value supplied for the parameter". Similarly, a parameter with the same name is used in a formula somewhere else in the condition tree, then all these appearances too will reference the same parameter; all of them will be replaced with the same final content during usage in the Define Recipients wizard and must therefore have the same type.

Example: Assume that the hosted recipient list has a field called "AGE" and you want to define a target group that selects all subscribers that are of a certain age or older. If, for example, you want to test for the age of 21, you could specify this as a condition node as follows:

```
the field AGE >= the number 21
```

However, what if for the next mailing you want to use a different age, say "18" or "40"? You could of course create a new target group for that purpose, with a new condition. But this will soon become tedious, so instead, you should use a parameter for the age and thus leave it to the end user to supply the actual age to check for. The condition node would then look like this:

```
the field AGE >= the numeric value of the parameter age_param
```

Where "age_param" is the name that you have given this parameter. The resulting target group could then be used to select recipients of any age or older, just by supplying the desired threshold age in an edit field, as a value for the parameter "age_param".

Job Based Condition Nodes

Job based condition nodes derive their Boolean state by examining the delivery of an earlier mail job, the so called "source job", and optionally also the tracking events collected for that job (if any). The condition node is represented in the tree with the symbol and a textual representation that displays the condition in short form.

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The source job it is that will be examined will be specified by the end user who uses the target group in the Define Recipients wizard. Here in the condition definition, it is enough to know that whatever source job will be selected, it will be a job that was in turn delivered to the same hosted recipient list as the one that this target group is based on (or more precisely, the source job used a target group which was based on the same hosted recipient list as this target group).

The Edit Job Based Condition screen allows you to define how the source job will be examined. The following options are available:

- **All current subscribers which were recipients of the original source job** – If selected, the condition node evaluates to "true" for all subscribers currently on the hosted recipient list that have also been recipients of the source job that will be selected in the Define Recipients wizard. For any subscribers that were not recipients of the source job (because they did not fulfill the source job's condition or because they only subscribed to the list after the source job was delivered), then the condition evaluates to "false". If this choice is selected, you may optionally specify to examine the tracking events of the source job to filter further the recipients.
- **All current subscribers which were NOT recipients of the original source job** – The negated version of the above condition. If selected, the condition node evaluates to "true" for all subscribers currently on the hosted recipient list that were not recipients of the source job that will be selected in the Define Recipients wizard (because they did not fulfill the source job's condition, or they only subscribed to the list after the source job was delivered). For any subscribers that were recipients of the source job, then the condition evaluates to "false".

Examining Tracking Events of the Source Job

If you select the first of the two choices above, to filter for all subscribers that were recipients of the source job, then you may optionally choose to examine the tracking events that were collected for the source job, to filter further the recipients. To enable the option, check **With the following tracked behavior**, and then select one of the available behavior types from the drop-down list:

- **At least on open-up event** – The condition will be "true" only for subscribers who did generate at least one open-up event for the source-job.
- **At least one click event for any selected URL** – The condition will be "true" only for subscribers who did generate at least one click event for any of the selected URLs (see below on how to select the URLs to look at).
- **At least one click event for each selected URL** – The condition will be "true" only for subscribers who did generate at least one click event for each of the selected URLs (see below on how to select the URLs to look at).
- **NOT (At least one open-up event)** – The negated version of the first behavior type as described above. The condition will be "true" only for subscribers who did not generate any open-up events for the source job.
- **NOT (At least one click event for any selected URL)** – The negated version of the second behavior type as described above. The condition will be "true" only for

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subscribers who did not generate any click events for any of the selected URLs (see below on how to select the URLs to look at).

- **NOT (At least one click event for each selected URL)** – The negated version of the third behavior type as described above. The condition will be "true" only for subscribers who did not generate any click events for at least one of the selected URLs (see below on how to select the URLs to look at).

If one of the click events is selected, you also need to specify which URLs to look at. This is done with the options located below the drop-down list, which only becomes enabled if such a behavior type is chosen. In this case, you have the following choices:

- **Fixed list of all tracked links of the "source job"** – If selected, then the click events of all tracked links in the selected source job will be examined to determine the condition state. With this choice, the end user who employs this target group in the recipients wizard will not have the choice to define which links to examine, as it will always be all links of the source job which are examined.
- **User defined list stored in parameter** – If selected, then only the click events of a certain list of links in the source job will be examined to determine the condition state. Which links will appear in this list is not defined here, at the time the condition is specified, but is instead defined by the end-user who employs this target group in the Define Recipients wizard by filling out a parameter. The parameter's name needs to be specified here, together with the selected option. Later in the Define Recipients wizard, the selection of links will be made in a multiple selection box, and the resulting list of links to examine will be stored in the parameter with the name specified here. The condition will then look at the list in this parameter to determine its Boolean state.

Note: If you specify the same parameter name in different job based condition nodes, it will be interpreted as one parameter that appears several times in the condition tree; all appearances will be filled out with the same list of selected links (depending on the end-user's choices). A parameter with the same name in a normal condition node or a condition formula may not be used.

Additional Issues with Job Based Conditions and Tracking Events

If the option of examining the tracking events of the source job is selected, then additional issues must be considered.

With this option enabled, the choice for the "source job" becomes more limited. Normally for job based conditions, a possible source job is one that has been delivered to the same hosted recipient list as the one the target group is based on. When using the "examine tracking events" option, the choice for the source job is narrowed to all the above jobs which also had personal tracking enabled at the time of delivery. Only the information collected with personal tracking is sufficient for the job based condition node to determine if the condition will be "true" or "false".

With this option enabled, a decision must be made for "which" events to actually take into consideration. Will all events collected for the source job be used, or only some?
To answer this question, the following happens whenever you define a job based condition which shall also examine tracking events:

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If the condition tree contains at least one such job based condition node, additional input controls are displayed on the wizard page, right below the condition tree. These controls give you the option of defining a time period into which events of the source job must fall to actually be considered by the job based condition nodes in the tree. (The settings made here apply equally to all job based condition nodes in the tree that examine tracking events.)

To define this event period, you need to specify a **From** threshold where the period begins and a **To** threshold where the period ends.

For the **From** threshold, you have the following choices:

- The delivery time of the original source job – This means that the event period begins with the delivery time of the source job; the earliest events generated for the source job will be considered by the condition.
- <To be defined during recipient definition> – This means that the beginning of the event period (the "From" threshold) is not already fixed here in the target group definition but will instead be supplied by the end user who employs this target group in the Define Recipients wizard. The end user will then have the choice to set the "From" threshold to the same "delivery time of the original source job" as explained above (to catch even the earliest events) or to set it to a specific date and time (to start event examination at this specific time).

For the **To** threshold, you have the following choices:

- The delivery time of the follow-up job – The "follow-up job" is the job that this target group will be employed for in the Define Recipients wizard. This choice means that the event period ends with the delivery time of the follow-up job; even the latest events generated for the source job will be considered by the condition.
- <To be defined during recipient definition> – This means that the end of the event period (the "To" threshold) is not already fixed here in the target group definition but will instead be supplied by the end user who employs this target group in the Define Recipients wizard. The end user will then have the choice to set the "To" threshold to the same "delivery time of the follow-up job" as explained above, (to catch even the latest events) or to set it to a specific date and time (to end event examination at this specific time).

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Glossary of Terms

A

Administration Hub (HUB) – A component of the LISTSERV Maestro program that allows the administrator to create user accounts, and assign and change settings for the entire application.

B

Boolean Field – A data field based upon a true or false statement.

C

Column – A vertical set of data, as in a table or spreadsheet.

D

Database Plugin – Is used to connect LISTSERV Maestro to a database and to allow the user to select recipient data from a database table in the Define Recipient wizard. The user selects the matching plugin for the database, then provides the connection data (like host name, port, user name, password, etc.). LISTSERV Maestro is then able to access that database to select the recipients.

Datasets – A collection of data organized into fields and pertaining to recipients. The fields making up a dataset can have different types of properties that determine the kind of data within them, such as text, numbers, menu selections, dates and so on. The data administrator designs the datasets within a recipient warehouse, defining each field and the type of data it holds. The recipient dataset also contains mailing lists created by the data administrator that use the recipient data for job definition. The data is shared across all mailing lists that are created within the dataset. Individual lists within the dataset are allowed to have additional fields of data that pertain just to those lists.

E

Email Merge – Placing variables that are extracted from a database into an email message template. This operation permits individual personalization of otherwise bulk email messages.

F

Filter – A means of sorting through recipients in the warehouse to select them based on certain operators.

Floating point number – Any number that has a decimal place.

G

H

Header – A special row of data that defines and labels the columns in a database file.

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Hosted Lists – Hosted lists contain data from the dataset. They can also have their own data fields that are not shared among lists in the dataset, but belong exclusively to the list. Lists that do have their own fields will also have their own web subscription forms generated when the list is created. All the fields that appear in the dataset and in a particular list can be used as merged fields for messages sent to that list.

Hosted LISTSERV List – On some platforms, it is possible for LISTSERV Maestro to create traditional LISTSERV lists and store the subscription data for these lists such that they are accessible from the LISTSERV Maestro subscription pages. These types of lists are referred to as Hosted LISTSERV Lists or HLLs because their data is "hosted" within LISTSERV Maestro's system database.

Hosted Recipient List – Lists that are controlled completely by LISTSERV Maestro.

I

Identity – A collection of several accounts that belong to one and the same "identity", usually a person. By collecting all accounts of one person into an identity, LISTSERV Maestro knows that these accounts all belong together. As a result, the user is then allowed to switch between the accounts in the identity without having to perform an actual logout and login. In other words, if a user logs in with one account that belongs to an identity, then this user can switch over to all other accounts in the same identity without having to first logout the old account and then login again with the new account.

In-clause – A part of the where-clause of a SQL statement, which allows the specification that a certain field or expression must have exactly one of several allowed values (with the allowed values usually given in form of a comma-separated list) for the where-condition to be true.

J

K

L

Lookup Table – A set of values that is used for the values in a selection menu. Lookup tables are shared across a recipient warehouse so multiple datasets can use them.

M

Maestro User Interface (LUI) – A component of the LISTSERV Maestro program that allows users to create email jobs and tracking reports.

Multiple value – A parameter type that allows for one or more values to fill in the select statement.

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N

O

P

Parameter – In LISTSERV Maestro, a parameter acts like a placeholder for a part of a SQL statement that will be inserted into the whole statement when the end user defines it.

Q

Quote character – In a SQL statement: a character (usually the single quote) used to enclose string literals in order to set them off from the rest of the SQL statement.

In a text file (CSV-file) containing data: a character or symbol used to surround a separator character that is used in the actual data in a column so that the separator character is not confused with the character that appears in the data. For example, if a comma (,) is used as the separator character in a database file, then all the fields of data are separated by a comma. If the comma is also used within a field, then a quote character must surround the entire field. If the quote character is used in a field, then it must be used twice or "escaped."

R

Recipients Warehouse – The repository for a group's data including lookup tables, datasets, hosted lists, and recipient data.

S

Select Statement – A SQL statement in the form of a query that is issued to a database to retrieve data.

Single value – A parameter type that allows for the selection of only one value to fill in the select statement.

SQL – Abbreviation for Structured Query Language. SQL is a standardized query language for requesting information from a database.

SQL Statement – A statement written in SQL that is issued to a database to retrieve data or to create, insert, update, or delete data in the database.

String literal – A series of characters that are to be interpreted as literal text and not as an expression or name in the surrounding statement. Usually a string literal is set off from the text of the surrounding statement by enclosing it in a special quote character. Therefore, if the text of the string literal is supposed to contain the quote character itself, then this contained quote character must be escaped in an appropriate way.

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T

Target Group – Predefined recipient lists, complete with name and description, created by the data administrator. Target groups can simplify and streamline the use of data sources, including databases, uploaded text files, and email lists, to select recipients and recipient data to the point where end users do not need to know anything about how and where data is stored.

U

V

W

Where-clause – A part of a SQL statement that sets the condition that the data must satisfy for the statement to be executed on it. For example, in the case of a select statement, the condition that the data must fulfill to be included in the returned data.

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Z

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