LISTSERV® 15.5 List Owner's Manual

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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®. 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 **Help** icon).
- 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.
- Some screen captures have been cropped and/or edited 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 15.5.

Editorial Note - New Version Numbering

With this release, L-Soft is aligning LISTSERV's version numbering with the rest of the e-mail industry. There have been 51 released versions of LISTSERV since 1986 – 15 major upgrades and 36 minor releases. Version 1.8e in the "traditional" numbering system corresponds to 14.0. The present update is version 15.5.

Because the old nomenclature is more familiar to our users, in this version of the documentation we will continue to refer to versions of LISTSERV inferior to version 14.4 by the old version system.

LISTSERV Command Syntax Conventions

Generally, parameters used in this document can consist of 1 to 8 characters from the following set:

```
A-Z 0-9 $#@+-_:
```

Deviations from this include:

- *`fformat`* – `Netdata, Card, Disk, Punch, LPunch, UUencode, XXencode, VMSdump, MIME/text, MIME/Appl, Mail`.

- *`full_name`* – *`first_name [middle_initial]`* surname (not your email address). Must consist of at least two space-separated words, e.g., "John Doe".
- *`listname`* – name of an existing list
- *`node`* – Either the fully-qualified domain name (FQDN) of an Internet host or the BITNET nodeid or Internet hostname of a BITNET machine which has taken care of supplying an ':internet' tag in its BITEARN NODES entry.
- *`host`* – Generally the same as node, but normally refers specifically to the fully-qualified domain name (FQDN) of an Internet host rather than to a BITNET nodeid.
- *`pw`* – a password containing characters from the set: `A-Z 0-9 $#@_-?!|%`
- *`userid`* – Any valid RFC822 network address not longer than 80 characters; if omitted, the 'hostname' part defaults to that of the command originator.
- *`internet_address`* – Similar to `userid`, but specifically refers to a complete RFC822 network address in `userid@fqdn` format. When we use this nomenclature a fully-qualified hostname is required.

Other deviations from the standard set will be noted along with the affected commands.

Also, the following conventions represent variable or optional parameters:

- *`italic type`* – Always indicates required parameter names that must be replaced by appropriate data when sending commands to LISTSERV.
- < > – Angle brackets may sometimes enclose required parameter names that must be replaced by appropriate data when sending commands to LISTSERV. Sometimes used for clarity when italic type is inappropriate.
- [ ] – Square brackets enclose optional parameters which, if used, must be replaced by appropriate data when sending commands to LISTSERV.

Contacting L-Soft

Support

L-Soft international recognizes that the information in this manual and the FAQ questions on our web site (http://www.lsoft.com/lsv-faq.html or http://www.lsoft.com/manuals/owner-faq.html) are not going to solve every problem you may face. We are always willing to help diagnose and correct problems you may be having with your licensed LISTSERV server.

L-Soft strongly recommends that, for support purposes, it is best to use the technical support "lifebuoy" link from the Server Administration Dashboard to initiate a support ticket. This will help you create an email message to the support group that contains all the necessary information about the site configuration, license and so forth without requiring you to find the individual files or issue information commands.

If LISTSERV is not running, of course, this will not be possible. In that case, please try to use the following procedure:

- Make the subject line of your report indicative of the problem. L-Soft receives a great deal of mail with the subject "Help!", which is not very helpful when we receive them.

- Include any appropriate log entries. LISTSERV keeps logs of everything it does, and without the log trace back, it is often impossible to determine what caused a given error.
- If you're running a Unix server and LISTSERV dumps core, please run the debugger on the core file, produce a trace back, and include the results.
- Always send a copy of your site configuration files (with the passwords x'ed out). See the Site Manager's Operations Manual for LISTSERV for the locations and names of the two site configuration files.
- Send along anything else that you think might be helpful in diagnosing the problem.

If the supporting documents (for instance, log files) are extremely large, please contact support first before sending everything through. The support group has alternative methods of handling large files that they will be happy to share with you.

If you are not currently an L-Soft customer and are running an evaluation version of our software, please send your trouble reports to the evaluation users' list, LSTSERV@PEACH.EASE.LSOFT.COM.

If you are running LISTSERV Lite, please send your trouble reports to the LISTSERV Lite support mailing list, LISTSERV-LITE@PEACH.EASE.LSOFT.COM. This includes users of the paid version of the software unless you have also purchased paid support.

If your LISTSERV Classic/Classic HPO server for VM, VMS, unix, or Windows has paid-up maintenance, you may send problems to SUPPORT@LSOFT.COM for a quick reply.

Sales

To reach our worldwide sales group, simply write to SALES@LSOFT.COM. You may also call 1-800-399-5449 (in the US and Canada) or +1 301-731-0440 (outside the US and Canada) to speak to our sales representatives.

Section 1 About Mailing Lists and LISTSERV

LISTSERV® is a system that allows you to create, manage and control electronic "mailing lists" on a corporate network or on the Internet. Since its inception in 1986 for IBM mainframes on the BITNET academic network, LISTSERV has been continually improved and expanded to become the predominant system in use today. LISTSERV is now available for VM, OpenVMS, various "flavors" of unix, and Microsoft Windows (XP/2000/2003).

Consider for a moment what the users of your electronic mail system actually use electronic mail for. Do they discuss problems and issues that face your organization, down to the departmental level? In an academic setting, do your faculty and students communicate via electronic mail? As with "real world" distribution lists, electronic mailing lists can make it possible for people to confer in a painless manner via the written word. The electronic mail software simply replaces the copying machine, with its associated costs, delays and frustrations. In fact, electronic mail lists are easier to use than most modern copiers, and a lot less likely to jam at just the worst possible moment.

Because electronic mail is delivered in a matter of seconds, or occasionally minutes, electronic mailing lists can do a lot more than supplement the traditional paper distribution lists. In some cases, an electronic mailing list can replace a conference call. Even when a conference call is more suitable, the electronic mailing list can prove a powerful tool for the distribution of papers, figures and other material needed in preparation for the conference call. And, when the call is over, it can be used to distribute a summary of the discussion and the decisions that were made. What before might have been an exchange of views between two or three people can now become an ongoing conference on the issue or problem at hand. Announcement lists and even refereed electronic journals can be made available to your audience, which can be as small as a few people or as large as the entire Internet community.

Section 2 Starting a Mailing List

This section (and much of this manual) assumes that you are administering your list by mail, which is the "traditional" method of LISTSERV list administration. LISTSERV also includes a web-based administration interface for lists (described in Section 11 Using the Web Administration Interface). Lists that are coded "`Validate= Yes,Confirm,NoPW`" or "`Validate= All,Confirm,NoPW`" must be managed by mail, since the Web Administration Interface is secured by passwords and these settings reject password validation, instead requiring validation by the "OK" confirmation method. If you use the web-based tools to manage your list, you should still skim this section and refer to it for more advanced list management information.

2.1 Avoiding Duplication[1]

Before you start your list, it pays to do a careful search in several places to find out if you are duplicating an already-existing list, or if the name you are considering is already in use for a list on a differing subject. The first place to check is the "CataList" service maintained by LISTSERV itself. This service lists all public lists running on LISTSERV servers worldwide. Point your Web browser of choice at the URL http://www.lsoft.com/CataList.html to access CataList. If you don't have a web browser, you can alternately send the command `LISTS GLOBAL search_string` in the body of mail to LISTSERV@LISTSERV.NET (or to LISTSERV at any host site). You will receive a mail message in return containing a list of all lists known to LISTSERV where either the name of the list or the short list description contains your search string. For instance, LISTS GLOBAL IBM would result in the following being returned to you:

Figure 2-1 Sample Output of LISTS GLOBAL IBM

```
                         12 Dec 2001 13:35
                       (search string: IBM)
             Copyright 2001 L-Soft international, Inc.

L-Soft international, Inc. owns the copyright to this compilation of Inter-
net mailing lists and hereby grants you the right to copy the enclosed
information for the sole purpose of identifying, locating and subscribing
to mailing lists of interest. Any other usages are strictly prohibited.

***********************************************************************
* To subscribe, send mail to LISTSERV@LISTSERV.NET with the following *
* command in the text (not the subject) of your message:              *
*                                                                     *
*                       SUBSCRIBE listname                            *
*                                                                     *
* Replace 'listname' with the name in the first column of the table.  *
***********************************************************************

Network-wide ID  Full address and list description
---------------  ---------------------------------
AIX-L            AIX-L@NEW-LISTS.PRINCETON.EDU
                 IBM AIX Discussion List
```

1. Parts of this section was adapted from *Some Lists of Lists*, compiled by Marty Hoag.

(Quite a few more lists were deleted for brevity)

You might want to make your search more specific, as this particular search locates every list that has IBM somewhere in its title. For instance, if you wanted to start a list on some aspect of the IBM 370, you might do better to search for IBM 370.

Alternative searches you can do include:

- Check the Usenet newsgroups news.announce.newusers and news.lists, if they are available to you via your local news feed.
- Use one of the World Wide Web search engines such as Alta Vista or Google to search for matches to the name you want to use.

2.2 Skills Needed to Start and Maintain a LISTSERV Mailing List

You should already be familiar with your mailing system and text editor. Otherwise, there are no special skills required. It is the goal of this manual to give you what you need to know about LISTSERV user commands, privileged LISTSERV owner commands, and how to read and interpret Internet-style mail headers[1]. LISTSERV itself is designed to operate in an identical manner no matter which operating system it is running under. Thus the fact that LISTSERV is running under VM, VMS, some flavor of Unix, or Windows NT should not be a concern to the list owner, who may not even know which version of LISTSERV his lists are running on.

Additionally, we have made an attempt to give you a basic "list owner's course" in anticipation of some of the issues you may encounter in the course of moderating a list.

2.3 Creating a Mailing List

If you are looking for a site to host a list, consider the following:

- First, find out if your computing center maintains a LISTSERV host.
- If not, you might consider a commercial LISTSERV site. There are a number of such sites, including L-Soft's own EASESM service. You can get more information on EASESM at http://www.lsoft.com/products/ease.asp.

Note: Many sites (predominantly, but not necessarily limited to, those in .EDU domains) will not host commercial or potentially-controversial lists because of internal policies regarding appropriate use of their computing facilities. In such a case, your only option may be to seek a commercial LISTSERV site.

Physically creating the list is the task of the LISTSERV maintainer (sometimes referred to as the "LISTSERV postmaster") at a given LISTSERV host site[2]. Specific procedures for requesting a list startup vary from institution to institution. It is usually best to contact the computing center at the site for more information.

1. Standard Internet-style mail headers are described in RFC822 and RFC2822.

2. Note that the "LISTSERV postmaster" is not identical to the regular POSTMASTER address at a host site. The term "LISTSERV postmaster" is a canonical term from early in LISTSERV's history and refers only to the person who is the actual LISTSERV maintainer at the host site. The term has falling into disuse and its use is discouraged because of the potential confusion it may cause.

Because most list owners do not have the appropriate permissions to create lists, instructions on how to physically create lists are not included in this manual. If you are a LISTSERV maintainer, you can find these instructions in the Installation Guide that came with the software, or in the Site Manager's Operations Manual for LISTSERV.

2.3.1 Naming Conventions

When naming a list, there are a few conventions and restrictions that you should keep in mind.

2.3.1.1 The "-L" Convention

The "-L" convention isn't required, but it can help people to realize that the mail is coming from a mailing list rather than from a real person. The people we are referring to here are people who run Internet mail systems, who may see a great deal of mail coming from a single host and begin to wonder why. If it comes from a userid that ends in a "-L", they will be more likely to recognize it as list mail.

2.3.1.2 Reserved Names

You may not create lists whose names match the following wildcards:

```
owner-*
*-request
*-search-request
*-server
*-signoff-request
*-subscribe-request
*-unsubscribe-request
```

For instance, lists cannot be made with names like "owner-loyalty", "linux-server", and "donation-request". While it is physically possible to create a list with a name that matches one of the above wildcards, attempts to send mail to the list (for example, a list called "linux-server") will result in an error, logged as follows in the LISTSERV log:

```
4 Dec 2001 11:47:02 -> Invalid list (LINUX), generating bounce.
```

These "pseudo-mailboxes" have a special meaning to LISTSERV, which has internal rules that govern how mail sent to these addresses is handled. See the Site Manager's Operations Manual for LISTSERV for more information on what happens to mail sent to these special addresses.

2.3.1.3 Reserved Characters

In general, you want to avoid "special" characters such as the ones above the number keys on your keyboard. For example, don't use:

!	can be confused for "bang-path" addressing, for example, UUCP
@	a reserved character
#	can cause problems with some mail software that uses it for addressing
$	may have a special meaning to the unix shell
%	another addressing character that could cause problems

&	sometimes reserved by non-unix systems (specifically on NT, it has a special meaning to the shell). However, please note that use of this character in the name of a list or in a sendmail alias for a list will cause LISTSERV on unix to choke. Note that it is possible under unix to create a list with a "&" character in the name quite easily, and it is also possible to create a sendmail alias with a "&" character in the alias. That does not mean it will work.
*	the wildcard character
( )	generally reserved and can't be used in file names
+	should be avoided because recent versions of sendmail deliver mail addressed to "user+whatever@somedomain" to "user@somedomain." Whether or not this is an intelligent thing to do on sendmail's part is left as an exercise for the user, but it can affect mail being sent to a list with a "+" character in the listname.
/	reserved and can't be used in file names
.	Although on some systems it is physically possible to create lists with a dot character in the name, LISTSERV will not accept this nomenclature. The only place a dot can or should be used is before the word "LIST" in the PUT command; for example, `PUT MYLIST-L.LIST` is equivalent to `PUT MYLIST-L LIST`.
"	not allowed

It is best if you avoid the use of special characters altogether and stick exclusively to the letters A-Z, numbers 0-9, and the underscore and hyphen characters when naming lists. Note that the "_" (underscore) character may cause problems with some non-compliant receiving systems. Also note that the space character (ASCII 0x20) is illegal in a list name, and L-Soft recommends that, although apostrophes (aka "single-quotes", ASCII 0x27) are valid in an RFC822 username, they should not be used in list names since some mail programs may not accept them.

If you have any question about the validity of a particular name, you can of course refer to RFC822 or the updated RFC2822 for the Internet standards for e-mail addressing.

2.3.1.4 Maximum Length of the List Name

The length of the list name (that is, the name of the list file and thus the "official" name of the list) is restricted as follows:

- VM: 8 characters
- Non-VM: unlimited (but see below)

If you need a longer list name for a list running on a VM server, then you should use the `List-ID=` keyword (see the List Keyword Reference document).

Note: L-Soft recommends using names of 32 characters or less whenever possible as they provide for correct alignment of the results returned by certain commands. Very long (for example, program-generated) list names are likely to conflict with mail system limits and L-Soft recommends other solutions to the problem of dynamically generated lists. As a rule, list names in excess of 70 characters are likely to result in mail delivery problems.

2.3.1.5 Making the List Name User-Friendly

While you can (within limits) name a LISTSERV mailing list just about anything you want, you will probably want to follow a couple of simple guidelines:

1. Keep the name simple.
2. Keep the name as short as possible without causing confusion.

No doubt you could name a list MY-LIST-FOR-MATH-STUDIES, but who wants to type that? Conversely, MLFMS-L wouldn't mean much to Joe Random User. Somewhere in the middle is a reasonable compromise, for example, MATH-STUDIES (or even just MATH-S).

2.4 List Header Keywords

How a LISTSERV mailing list performs its tasks is defined by its header keywords. There are several different categories of keywords, each of which is discussed below in general terms. We will discuss these keywords in detail in subsequent sections, and a complete alphabetical listing of list header keywords, including default settings and all options available, is provided in the List Keyword Reference document.

- **Access Control Keywords** – These keywords designate the level of "openness" for a list. They determine who can post to the list, who can review the list of subscribers, and whether or not the list is open to general subscription.
- **Distribution Keywords** – This group has to do with how LISTSERV distributes postings to subscribers, including whether or not acknowledgments are sent back to posters, how many postings may go through the list daily, whether or not the list is available in digest form and whether it is available to USENET through a gateway. These keywords also determine whether or not list topics are enabled, and how LISTSERV will configure outgoing postings for replies.
- **Error Handling Keywords** – Included under this group are the keywords controlling automatic deletion, loop-checking, and to whom error messages are sent for disposition when received by LISTSERV.
- **List Maintenance and Moderation Keywords** – A fairly large group of keywords having to do with how the list is operated, including definitions for the list owner, list editor, and the list archive notebook; whether or not (and who) to notify when users subscribe and sign off; how often subscriptions must be renewed, and so forth. These are perhaps the most basic keywords that can be set for a given list, and one of them ("Owner=") must be set for a list to operate.
- **Security Keywords** – These keywords control who can "see" the list (that is, whether or not the list appears in the List of Lists for a given user, based on the user's host site), whether or not the list is protected by a password, and the level of security necessary for changes to the list itself. The "Exit=" keyword is also contained in this group.
- **Subscription Keywords** – These control whether or not the list is open to general subscriptions, whether or not a mailing path confirmation is required, and what user options are set by default upon subscription.

- **Other Keywords** – These control other aspects of list management that are not generally changed from their defaults, and which do not fit readily into the categories listed above.

2.5 Sending Commands to LISTSERV

In the following sections, you will see numerous references to "sending commands to LISTSERV". All LISTSERV commands are sent to the server either by email or via the web administration interface described in Section 11 Using the Web Administration Interface. For mailed commands, this means that you must create a new mail message using whatever command this requires for your mail client (click on "New message" or its equivalent for most mail clients) addressed to the LISTSERV address. Let's say for the sake of argument that the list you want to subscribe to (or are currently subscribed to) is running on a server called `LISTSERV.MYCORP.COM`. In order to send a command to that server, you would create a new message and address it to `LISTSERV@LISTSERV.MYCORP.COM`, and place the command(s) in the body (not the subject) of the message.

Depending on how you have security set up for your lists, some or all commands may require that you validate them with a personal LISTSERV password.

2.6 Defining Personal Passwords

The passwords recognized by LISTSERV for various operations (assuming that the `NOPW` parameter is not used with the "`Validate=`" keyword) are of two distinct types:

- **Personal Passwords** – LISTSERV can store a personal password in its signup files corresponding to your userid. This password not only can be used for list maintenance operations, but also protects your FUI (file update information) and AFD (automatic file distribution) subscriptions (if available on your server) and must be used to store your archive files, if any, on the server.
- **List Passwords** – List passwords are obsolete except in only one special case (peered lists). We mention them here only because users upgrading from earlier versions will be aware of their existence. You should define and use a personal password for all protected operations.

To add a personal password, send mail to LISTSERV with the command

```
PW ADD newpassword
```

in the body of the message. LISTSERV will request a confirmation via the "OK" mechanism (see above) before it adds the password.

If you want to remove your password altogether, send the command

```
PW RESET
```

This command will also require confirmation.

And finally, if you simply want to change your personal password, send the command

```
PW CHANGE newpassword [PW=oldpassword]
```

If you do not include the old password in the command (e.g., you've forgotten it), LISTSERV will request an "OK" confirmation. Otherwise, it will act on the command without need for further confirmation (unless, of course, the oldpassword provided is incorrect).

Personal passwords may also be defined via the web administration interface.

2.7 Retrieving the List Configuration

Warning: Never attempt to hand-edit a production list file in place and restart the server. The GET and PUT operations are the only supported methods. Particularly under unix and Windows, LISTSERV will not always accept the hand-edited list file because some editors will insert control characters or CR-LF combinations that LISTSERV cannot parse. Under VM or VMS, it is always possible that hand-editing the list will introduce some sequence that will cause an operational error. L-Soft suggests that this method be used sparingly, if at all, and does not support it.

2.7.1 Who can edit the list configuration?

In general, any email address specified explicitly as a list owner (in the Owner= list keyword setting) may retrieve, edit, and store the list configuration (also known as the "list header").

If the list header keyword Configuration-Owner= is set, then only those list owners specified in both Owner= and Configuration-Owner= may retrieve, edit, and store the list configuration. All other owners (that is, those not specified in Configuration-Owner=) may perform other list maintenance duties, such as adding/deleting subscribers or modifying their subscription options. The Configuration-Owner= keyword is "protected" and can be changed only by someone with LISTSERV site maintainer privileges.

The LISTSERV site maintainer has "super-owner" privileges and may edit all list configurations on the server regardless of the setting of Owner= or Configuration-Owner=.

2.7.2 Retrieving the List Configuration by Email

Once your list has been created by the LISTSERV maintainer, you can have a copy of the list sent to you for editing purposes. Simply issue the command

```
GET listname (HEADER
```

to LISTSERV. This will cause the server to mail you a copy of the list header only (without the subscriber list).

Note: You can retrieve the entire list, subscribers and all, by omitting the `(HEADER` switch. However, L-Soft strongly discourages getting the entire list at any time. This is because you do not need the entire list file if all you want to do is to change list header keyword settings. Also, since LISTSERV has well-documented commands available to manage user subscriptions, you should never attempt to hand-edit a list file in order to add or delete subscribers. Therefore there should normally be no reason to issue the `GET` *`listname`* command without the `(HEADER` switch.

The `GET` command automatically locks the list so that no changes can be made to the operating copy on the server until you do one of two things:

- Issue the `UNLOCK` *`listname`* command (if you decide no changes are needed).
- Send the list back to the server with the `PUT` command.

Leaving the list locked also prevents new subscribers from signing up. It is therefore not advisable to leave the list locked for long periods of time. This necessitates remembering to issue the `UNLOCK` command if you decide not to make any changes.

It is possible to request that LISTSERV not lock the list when it is sent to you. This is accomplished by adding the `(NOLOCK` switch to the `GET` command. You can use `(NOLOCK` and `(HEADER` together as in the following example:

```
GET listname (HEADER NOLOCK
```

Note: The "`(`" switch character is used only once.

Caution: It is not advisable to use the `(NOLOCK` switch in at least two cases:

Don't use the `(NOLOCK` switch if you are not the sole owner of the list. This prevents conflicting GETs and PUTs by different list owners. For instance, Owner(A) GETs the list without locking it. Owner(B) then also GETs the list. The owners make differing changes to the list header. Owner(B) PUTs his changes back first. Owner(A) then PUTs his changes back, erasing every change Owner(B) made. If Owner(A) had not used the `(NOLOCK` switch, Owner(B) would not have been able to GET a copy of the list until Owner(A) either unlocked the list or PUT his copy back. (Owner(B) could also unlock the list himself, but it would be advisable to ask Owner(A) if he was finished editing the list header before doing so.)

Don't use the `(NOLOCK` switch if you get the entire list rather than just the header. You will erase all subscriptions for users who subscribed between the time you GET the list and PUT the list back. It is easier to deal with questions as to why they got the "listname has been locked since time by list-owner" message than to explain why they got a subscription confirmation and now aren't getting list mail.

Note: A PUT command containing new subscribers added "on the fly" will result in only the header of the list being updated and a warning being generated that says if you really wanted to PUT the entire list, subscribers and all, that you should use the PUTALL command.

LISTSERV maintainers should note one further caution: It is considered extremely inadvisable to "hand-edit" subscriber lists, as columns at the far right of each subscriber's entry contain list control codes corresponding to the subscriber's personal option settings. The only case in which it might be appropriate to "hand-edit" would be to delete a user entirely, and then only if all attempts to delete the user via the DELETE command fail. For instance, X.400 or X.500 addresses can cause DELETE to fail because of their use of the "/" character. You can use wildcards to delete these subscriptions:

```
DELETE XYZ-L *ADMD=ABC*PRMD=DEF*@X400.SOMEHOST.COM
```

You can also enclose the address in double quotes:

```
DELETE XYZ-L "/ADMD=ABC/PRMD=DEF/...../@X400.SOMEHOST.COM"
```

Finally, depending on your list configuration, you may have to use a password or respond to a confirmation request in order to GET your list header. The syntax for using a password with the GET command is

```
GET listname (options PW=password
```

For instance,

```
GET MYLIST-L (HEADER NOLOCK PW=MYPASSWORD
```

2.8 Editing the List Header

Once the LISTSERV maintainer has notified you that the basic list has been created, you can send a GET command to the server to make any modifications necessary, as explained above. For instance,

```
GET MYLIST (HEADER PW=MYPASSWD
```

might cause LISTSERV to send you the following list header file:

Figure 2-2 A Sample List Header File for a List Called MYLIST

```
PUT MYLIST.LIST PW=XXXXXXXX
* The Descriptive Title of My List
*
* Owner= NATHAN@EXAMPLE.COM (Nathan Brindle)
* Notebook= Yes,E:\LISTS\MYLIST-L,Monthly,Public
* Errors-To= Owner                  Send= Public
* Subscription= Open,Confirm  Ack= Yes          Confidential= No
* Validate= No                Notify= No         Reply-to= List,Respect
* Review= Public                   Default-Options= NoFiles,NoRepro
*
* This list installed on 96/11/02, running under L-Soft's LISTSERV
* for Windows NT.
*
* Comment lines...
*
```

You can now physically edit this file in a couple of different ways, depending on what tools you have on your workstation:

- Cut and paste the header from your mail program into an ASCII text editor such as vi, emacs, or Notepad. Edit the various keyword values and set the password in the PUT command appropriately. Finally, cut and paste from your editor into a new mail message addressed to LISTSERV and send the message.
- Cut and paste from your mail program into the body of a new mail message addressed to LISTSERV and do your editing in the mail program.
- If you use the 'mail' or 'mailx' programs under unix, you can save the header into a text file (for instance, named myheader.txt) and mail it back to LISTSERV with the command line syntax

  ```
  mail listserv@myhost.com < myheader.txt
  ```

In Figure 2-3, we've made some changes to the list header and it is ready to be included in a mail message and sent back to LISTSERV. Note that the PUT command has been modified to include your personal password (see Section 2.6 Defining Personal Passwords for instructions on how to obtain a personal password).

Figure 2-3 The Edited List Header File

```
PUT MYLIST.LIST PW=MYPASSWD
* The Descriptive Title of My List
*
* Owner= NATHAN@EXAMPLE.COM (Nathan Brindle)
* Owner= Quiet:,nathan@linus.example.com,ncbnet@linus.example.com
* Notebook= Yes,A,Monthly,Public          Auto-Delete= Yes,Full-Auto
* Errors-To= ncbnet@linus.example.com    Subscription= Open,Confirm
* Ack= Yes                 Confidential= No              Notify= No
* Validate= Yes,Confirm
* Reply-to= List,Respect   Review= Public                Send= Public
* Default-Options= NoFiles,NoRepro
*
* This list installed on 96/11/02, running under L-Soft's LISTSERV
* for Windows NT.
*
* Comment lines...
*
```

If LISTSERV responds to your PUT operation with error messages, bear in mind that the most common problems are:

1. You sent the header back from an account which is not defined as a list owner
2. You used the wrong password or didn't specify a password in the PUT command
3. Your mail program indents paragraphs by default, such that each header line does not start in column 1 and LISTSERV does not recognize your message as a list header
4. You sent the header file back as an attachment rather than as plain text in the body of the message.
5. Your mail client wrapped the lines of the header so that LISTSERV received header lines that did not begin with "*" and attempted to treat them as subscriber addresses. In this case you can probably solve the problem by increasing the right margin setting in your mail client so that messages at least 80 columns wide do not get wrapped.

2.9 Defining List Owners

List owners should be persons who will undertake the responsibility of managing the list in all of its aspects. A list owner may be a moderator; a list owner may be called upon to determine why a user can’t unsubscribe from the list, or to handle delivery errors, or to fix other problems that may arise.

The primary list owner (the first owner defined) has special responsibilities as well. This owner is considered the Editor and the primary Moderator for lists that have Send= Editor but do not have Editor= or Moderator= defined. This owner receives all error messages when Errors-To= is set to "Owner". In short, the primary list owner is generally the person who is ultimately responsible for the workings of the list.

Secondary list owners fall into two categories:

- Non-Quiet list owners receive mail sent to the listname-request address, and will receive error messages if Errors-To= Owners.

- Quiet list owners will never receive delivery errors or other administrative mail from LISTSERV.

Here is a sample list header excerpt for a list with all three types of list owners defined:

Figure 2-4 Defining List Owners in the List Header File Example

```
* Owner= NATHAN@EXAMPLE.COM (Nathan Brindle)
* Owner= nathan@linus.example.com
* Owner= Quiet:
* Owner= ncbnet@linus.example.com,cheng@linus.example.com
```

Notes: All list owners defined after the `* Owner= Quiet:` line will be quiet list owners.

You can define multiple owners on a single line by separating them with a comma. If you put "`Quiet:`" on a line with list owner userids, you must place a comma after "`Quiet`:", e.g.

```
* Owner=
Quiet:,ncbnet@linus.example.com,cheng@linus.example.com
```

There must *always* be at least one non-quiet list owner. Otherwise LISTSERV sends all error messages and other administrative mail to the LISTSERV maintainer by default.

2.10 Storing the List on the Host Machine

When you are ready to store your list back on the host, include the list file in a mail message to LISTSERV. Ensure that the PW=XXXXXXXX command is in the first line of the mail body. Change XXXXXXXX to the personal password you have previously defined with the PW ADD command (see Section 2.6 Defining Personal Passwords). Then, send the message.

If LISTSERV has trouble processing the edited list file, it will return a discrepancy report to you with each error noted. If the errors are categorized as "warnings only," LISTSERV will go ahead and store the list. However, if any one error is categorized as a serious error, the list will not be stored and the old version will be retained.

Caution: If you are using a mail client that allows "attachments" to mail, do not "attach" the list file to your mail message. It must be in plain text with the PUT line at the top. LISTSERV will not translate encoded attachments.

2.11 Fixing Mistakes

LISTSERV always backs up the current list file before it stores a new copy. Should you discover that you have made a mistake (for instance, you have deleted all users by storing a header and adding users "on the fly"), it is possible to retrieve the previous copy of the list by issuing a `GET` *`listname`* `(OLD` command to the host server. You must then add the `PUTALL` *`listname`* `LIST PW=`XXXXXXXX command to the top of the file and store it. (`PUTALL` is used in this case since you are storing the entire list, not just the list header.)

2.12 Security Options

LISTSERV’s security options are wide ranging, from almost no protection (easiest to administer a list, but also most open to hacker attacks) to total protection requiring validation of each and every command sent to LISTSERV for the list. It is also possible to limit access to various aspects of the list, such as who can subscribe, who can review the list of subscribers, and who can access the list archives. The list can be hidden from the LIST command, either at the global level or from all requests, including those from users on LISTSERV’s local machine, or from a definable range in between.

Note: LISTSERV does not set any file system permissions for any files. LISTSERV's security features are meant to allow and deny access to LISTSERV's various files depending on how various keywords are set, but in order to make your system completely safe, you must ensure that you have also set file and directory permissions appropriately for your operating system. For instance, LISTSERV may deny GET access to certain list archive files to non-subscribers, but if you have not set the appropriate file system permissions at the operating system level, you may have left open a window for someone to reach these files via anonymous ftp.

2.12.1 The VALIDATE= Keyword

The `VALIDATE=` keyword controls the level of command validation desired for the list. The default, `VALIDATE= NO`, requires password validation only for storing the list on the server. This is often sufficient for general needs. However, when a list is set this way, LISTSERV only compares the RFC822 "Sender:"/"From:" headers against the Owner= keyword(s) in the list header to determine whether or not the person ostensibly sending the commands has authority to do so. Otherwise at this level LISTSERV does not validate commands it receives for the list, under the assumption that the mail it receives is genuinely coming from a list owner. This level of validation does not protect the list from commands issued by hackers who have forged mail in the name of the list owner. If you run a list on a controversial topic or just don't feel comfortable without at least some security, `VALIDATE= NO` is probably not for you.

The next level is `VALIDATE= YES`. At this level, LISTSERV requires a password for all of its "protected" commands. This password is the sender’s personal LISTSERV password as defined by the `PW ADD` command. The commands protected by this level are those that affect subscriptions or the operation of the list, for example, `DELETE` or `ADD`. Users will also have to validate most commands that affect their subscriptions, but generally can do so using the "OK" mechanism rather than defining a personal password. Note that some user commands will be forwarded to the list owner for validation rather than accepting password validation from the user.

The next level is `VALIDATE= YES,CONFIRM`. At this level, LISTSERV will require validation with the "OK" mechanism (see below) by default, but will still accept passwords where appropriate. While the less-secure passwords are still accepted, this is considered a good compromise between list security and list owner and user convenience.

The next level is `VALIDATE= YES,CONFIRM,NOPW`. At this level, LISTSERV will no longer accept passwords as validation for protected commands. The logic is that because of the way the "OK" mechanism is implemented, passwords are not as safe as "magic cookies". This is the recommended setting for lists that must be kept secure.

Two other levels are `VALIDATE= ALL,CONFIRM` and `VALIDATE= ALL,CONFIRM,NOPW`. These levels require "OK" validation for all commands that cause a change in state except for the `PUT` command. If `NOPW` is not specified, passwords are accepted where appropriate. With these levels, commands that do not cause a change in state (e.g., `QUERY` and other strictly-informational commands) do not require validation.

Note: LISTSERV requests coming from the local system via CP MSG or CP SMSG on VM systems or via LCMD on VMS or Unix systems never require validation, as they cannot be forged.

Lists which are set to either `Validate= Yes,Confirm,NoPW` or `Validate= All,Confirm,NoPW` may not be managed via the web administration interface, which is password-driven.

See the List Keyword Reference document for complete information on the `VALIDATE=` keyword.

2.12.2 Controlling Subscription Requests

Subscription requests are controlled by use of the SUBSCRIPTION= keyword. By default, this keyword is set to `SUBSCRIPTION= BY_OWNER`, meaning that all subscription requests will be forwarded to the list owner for disposition. Subscription requests can be refused completely by setting `SUBSCRIPTION= CLOSED`.

To code a list for open subscriptions without list owner intervention, set `SUBSCRIPTION= OPEN`. If it is desired to add protection against forged subscription requests or bad return mailing paths, code `SUBSCRIPTION= OPEN,CONFIRM`. The latter will cause a subscription confirmation request to be sent to the prospective subscriber, which he or she must respond to using the "OK" confirmation mechanism.

In order to restrict subscriptions to persons in a specific service area, see the next section.

2.12.3 Controlling the Service Area of the List

The Service= keyword is not available in LISTSERV Lite.

It may be desirable to restrict access to a list to people in a small area. For instance, you probably would not want a list for students in a class section at a university to be advertised or accessible by people all over the world. However, without setting certain keywords appropriately, such a list will be visible to a `LISTS GLOBAL` command.

The local list of (public) lists can be retrieved only by those users who are considered local, per the setting of the server-wide `LOCAL=` variable in LISTSERV's site configuration file. All other users will be told that none of the lists on the server are visible via the LISTS command, and will be referred to the use of the `LISTS GLOBAL` *`search-text`* command or to the CataList. This is regardless of the setting of `Confidential=` as outlined below.

To simply hide a list from a `LISTS` command, but still allow people to subscribe to it if they know it is there, use the keyword `Confidential= YES`. Note that users subscribed to the list as well as the list owner(s) will be able to see the list if they issue a `LISTS` command. In addition, all other non-subscribers, including users on the local machine, will not be able to determine that the list exists via a `LISTS` command.

To hide a list from and refuse subscription requests from users outside the local area, you define two keywords:

```
* Service= bitnode1,bitnode2,some.host.edu
* Confidential= SERVICE
```

`Service=` can also be set to `Service= LOCAL`, meaning it will use either LISTSERV's global definition of which machines are `LOCAL`, or the machines defined by the list keyword `Local=`. The LISTSERV maintainer should define hosts and nodes that are considered local with the server-wide `LOCAL=` variable in the site configuration file. If the global definition is not suitable, it can be overriden by defining the `Local=` list header keyword:

```
* LOCAL= bitnode1,bitnode2,some.host.edu,another.host.co
m* SERVICE= LOCAL
* CONFIDENTIAL= SERVICE
```

If there are many subdomains within your primary domain, it may be preferable to use the wildcard when defining the `LOCAL` or `SERVICE` list header keywords. For instance:

```
* SERVICE= *.HOST.COM
```

defines the service area for a specific list as "all subdomains ending in .HOST.COM".

Note: Defining a service area for a list controls only from which domains subscription requests may be accepted. It does not control who may post to the list. Depending on local circumstances, it may be desirable to set lists with controlled service areas to Confidential= Service.

2.12.4 Controlling Who Reviews the List of Subscribers

For whatever reason, it may be desirable to restrict the ability to review the subscriber list either to subscribers or to list owners. This is done by setting the `REVIEW=` keyword appropriately.

To allow anyone, including non-subscribers, to review the list, set `REVIEW= PUBLIC`.

To restrict reviews of the list to subscribers only, set `REVIEW= PRIVATE`. This is the default.

To restrict reviews of the list to list owners only, set `REVIEW= OWNERS`.

Reviews can also be restricted to users within the list's service area by setting `REVIEW= SERVICE`, and defining the `SERVICE=` keyword appropriately (see the preceding section).

2.12.5 Controlling Access to the Notebook Files

Restricting access to the list's notebook archive files is similar to controlling who may review the list. It is accomplished by setting the fourth parameter of the `NOTEBOOK=` keyword to an appropriate value. For instance,

```
* NOTEBOOK= Yes,A,Monthly,Public
```

defines a monthly notebook on LISTSERV's A disk that is accessible by anyone. Change Public to Private if you wish only subscribers to be able to access the notebooks. The same access-levels are available for this keyword as for `REVIEW=`. (See the List Keyword Reference document for a discussion of access-levels.)

It is possible to define "`Service=`" in terms of IP address blocks in order to limit access to list archive notebooks. See "`Service=`" in the List Keyword Reference document for details.

If enabled, notebook archives are private by default.

2.12.6 Controlling Who Can Post Mail to a List

The `Send=` list header keyword is the basic control for who may post mail to the list. If the list allows non-subscribers to post, set `Send= Public`. (This is the default.)

For a list that does not allow non-subscribers to post, set `Send= Private`.

For a list where all posts should be forwarded to a moderator/editor, there are two settings:

- `Send= Editor` forwards all postings to the list editor (see the `Editor=` and `Moderator=` keywords). This setting allows the editor to make changes before forwarding the message back to the list. Note that your mail program must be capable of inserting "Resent-" header lines in your forwarded mail—if it is not capable of this, all such posts forwarded to the list will appear to be coming from the editor. Check with your system administrator if you are not sure whether or not your mail program inserts the "Resent-" headers.
- `Send= Editor,Hold` forwards a copy of the posting to the editor but differs from `Send= Editor` in that LISTSERV holds the posting for a period of time (usually 7 days) until the editor confirms the message with the "OK" mechanism (see below). Unconfirmed messages simply expire and are flushed by LISTSERV, so there is no need to formally disapprove a posting. This method of message confirmation is well-suited to lists where it is not often necessary to modify the text of a posting, and also is an excellent work around if the editor's mail program does not generate "Resent-" headers in forwarded mail.

Below is a sample of the editor-header for a list set to `Send= Editor,Hold`:

Figure 2-5 The Editor-Header for a List Set to Send= Editor,Hold

```
Date:          Tue, 4 Aug 1998 10:47:21 -0500
From: "L-Soft list server at PEACH.EASE.LSOFT.COM (1.8d)"
               <LISTSERV@PEACH.EASE.LSOFT.COM>
Subject:       B5-L: approval required (9723A0DD)
To: Joe ListOwner <joe@PRUNE.EXAMPLE.COM>

This message was originally submitted by  jack@UNIX.FOO.COM to the B5-L list
at PEACH.EASE.LSOFT.COM. You can  approve it using the "OK"  mechanism, ignore
it, or repost an edited copy. The message  will expire automatically and you
do not need to do  anything if you just want  to discard it. Please refer  to
the list owner's guide  if  you  are  not  familiar  with  the  "OK"  mechanism;
these instructions   are   being   kept   purposefully   short   for   your
convenience  in processing large numbers of messages.

---------------- Original message (ID=9723A0DD) (13 lines) -----------------
```

- `Send= Editor,Hold,Confirm` is identical to `Send= Editor,Hold` except that postings coming directly from an editor must be confirmed (with the "OK" mechanism) by the editor who sent the message. *This is the recommended setting* *for any moderated list or announce-only list as it protects the list from hackers who might try to forge mail from a legitimate editor address.*

- A final method (called "self-moderation") exists for lists where subscribers should be allowed to post freely, but non-subscriber posts should always be sent to an editor for approval. To enable self-moderation, set

  ```
  Send= Editor        (or Send= Editor,Hold)
  Editor= userid@host,(listname)
  ```

  Ensure that "listname" is in parenthesis. Note that self-moderation will catch all posts from non-subscribers—including posts from subscribers who are posting from a different address. For instance, if the subscriber originally signed up as joe@foo.com but is posting from joe@unix1.foo.com, LISTSERV will treat his mail as non-subscriber mail. Self-moderation may require some slight changes in individual user subscriptions in order for it to work seamlessly. See also the `Default-Options=` list header keyword description.

2.12.7 The "OK" Confirmation Mechanism

Depending on the setting of the Validate= list header keyword, certain LISTSERV commands have always required a password for execution. However, with a recognition that mail can be forged ("spoofed") by just about anyone on the Internet today, L-Soft introduced a "magic cookie" method of command validation that is considered much more secure than passwords.

In essence, the "magic cookie" method requires that the sender of the command must confirm his command via a reply containing only the text "OK". (This is actually simplistic; see below.) If mail is spoofed from the list owner’s user id, the command confirmation request will always be sent to the list owner’s user id, thus preventing the spoofer from confirming the command. Moreover, the "cookie" itself (an eight-digit hexidecimal number) is registered to the "From:" user id of the original command. A typical command confirmation request looks like this:

Figure 2-6 A Typical Command Confirmation Request

```
Date:          Wed, 5 Aug 1998 09:50:06 -0400
From:          "L-Soft list server at LISTSERV.EXAMPLE.COM (1.8d)"
               <LISTSERV@LISTSERV.EXAMPLE.COM>
Subject:       Command confirmation request (5C019D91)
To:            joe_user@EXAMPLE.COM
Your command:
                              PW REP XXXXXXXX
requires confirmation. To  confirm the execution of  your command, simply
point your browser to the following URL:
         http://listserv.example.com/scripts/wa.exe?OK=5C019D91
Alternatively, if  you have no WWW  access, you can reply  to the present
message and type  "ok" (without the quotes) as the  text of your message. Just
the word "ok" - do not  retype the command. This procedure will work with any
mail  program that fully conforms to the  Internet standards for electronic
mail. If  you receive  an error  message, try  sending a  new message  to
LISTSERV@LISTSERV.EXAMPLE.COM  (without  using  the  "reply" function - this
is very important) and  type "ok 5C019D91" as the text of
your message.
Finally, your  command will be  cancelled automatically if  LISTSERV does not
receive your confirmation within 48h. After that time, you must start over
and resend the command to get a new confirmation code. If you change your mind
and decide that you do  NOT want to confirm the command, simply discard the
present message and let the request expire on its own.
```

The general method of replying to a command confirmation request is to use the web browser confirmation method outlined in the confirmation request.

If you prefer, you can use the old method of responding by mail:

- REPLY to the command confirmation request with the text "ok" in the body of the reply. (Non-case-sensitive) LISTSERV reads the "cookie" from the subject line and if it corresponds to a held job, the job is released and processed.

If this does not work, it is possible that the Subject: line was corrupted in transit and you may need to try the following:

- SEND a new message to LISTSERV with the text "ok xxxxxxxx" (where xxxxxxxx is the command confirmation number from the original confirmation request) in the body of the reply.

It is also possible to confirm multiple command confirmation requests with a single message (for instance, if you have `Send= Editor,Hold` and have a number of requests to be responded to). This eliminates multiple "Message approved" mails from LISTSERV. However, make sure that you send the confirmations in a new mail message rather than replying to one of them. (See the "bracketed OK" syntax mentioned below.)

You can send the "OK" from any address, which helps when the address field of your mail gets changed somewhere along the line. For instance if you are logged into the web administration interface as joe@example.com and issue a command that requires mail confirmation, LISTSERV will send the request to joe@example.com (as expected). If your mail system expands joe@example.com to Joe_Doakes@mail.example.com, the "OK" will still succeed and Joe_Doakes@mail.example.com will get a message that says

```
> ok
Confirming:
> QUIET DELETE * jane@example.com
[reply sent to joe@EXAMPLE.COM]
```

while as a protection against "spoofed" commands the actual command response will be sent to joe@example.com like this:

```
jane@EXAMPLE.COM has been removed from the TEST list. No notification
has been sent.

Global deletion process complete, one entry removed.
```

The "OK" confirmation mechanism also has the following features:

- An "OK" without an argument (confirmation number) flushes the job stream so any text following an "OK" on a line by itself will not be seen by the LISTSERV command processor.
- Bracketed "OK" functionality. This feature allows you to send multiple commands for which LISTSERV will request only a single "OK" (where normally you would expect to have to "OK" each individual command). The syntax is as follows:

  ```
  OK BEGIN
  command1
  command2
  ...
  command3
  OK END
  ```

- A command confirmation ("OK") may now be sent by clicking on a web URL provided in the command confirmation request (mailed "OK"s are still perfectly acceptable, of course).

Note: In a "bracketed OK" the aggregate length of the data stream (that is, the total number of characters in the command lines falling between OK BEGIN and OK END) MUST be less than 32K characters. In practice you should use bracketed OKs for limited numbers of commands only, say no more than 10-12 at a time. In particular, if you have many ADD or DELETE commands to send, it is far more efficient (and strongly preferred) to use the bulk ADD and bulk DELETE syntaxes described in Section 4.4 Adding Subscribers to Lists in Bulk and Section 4.5 Deleting Subscribers from Lists in Bulk.

2.12.8 Explicitly Cancelling "OK" Cookies

It is possible to explicitly cancel an OK confirmation cookie. The command is simply

```
OK CANCEL xxxxxxxx
```

(for instance, "OK CANCEL 8F2E8F4B"), and if the cookie is valid, LISTSERV will respond "Confirmation code 8F2E8F4B cancelled." If the cookie is not valid (e.g. has expired, has already been cancelled, or is simply incorrect), LISTSERV will send its standard message telling you in part that "The confirmation code 8F2E8F4B does not correspond to any pending command."

2.12.9 Restricting Subscriber Privileges

Another security issue involves protecting the list from people who refuse to play by the rules. LISTSERV includes several different levels of privilege restriction for these users; some are available for list owners without the intervention of the LISTSERV maintainer.

1. The REVIEW personal option setting. By issuing a `SET listname REVIEW FOR userid@host` command to LISTSERV, you can moderate postings at the individual subscriber level. Postings from subscribers set to REVIEW are passed on to the Editor(s) or Moderator(s) of the list, or, if neither of these keywords are defined for your list, the postings are passed on to the primary list owner. At this point, the person who receives the postings can determine whether or not to approve them. Note that the subscriber always receives notification that his or her posting has been forwarded to a moderator for approval. This is to avoid the impression that the subscriber's posting has been lost before reaching LISTSERV.
2. The NOPOST personal option setting. By issuing a `SET listname NOPOST FOR userid@host` command to LISTSERV, you can prevent a subscriber from posting to the list entirely. LISTSERV will reject postings from these subscribers and will not pass them on to a moderator. As with the REVIEW setting, note that the subscriber always receives notification that his or her posting has been rejected.
3. The `FILTER=` list header keyword. You can filter individual users from subscribing and/or posting to your list by adding them to the `Filter=` list header keyword. For instance, if you have a list called MACTALK-L and you want to discourage redistribution lists from using the same name as your list, you can add

   ```
   * Filter= Also,MACTALK-L@*
   ```

   See the List Keyword Reference document for more information on the `Filter=` syntax.

2.12.10 Restricting the Number of Postings Per User Per Day

You can control the maximum number of postings per day per subscriber on a list-by-list basis by setting the optional second parameter of the "Daily-Threshold=" list header keyword. The default is to have no such daily limit per user.

If set, when the per-subscriber threshold is reached, the subscriber is told that his message cannot be processed because he has reached the limit for today, and that he should repost his message at a later time. The counter for this limit resets to zero at midnight for all lists.

This limit is waived for the list owner(s) and any list editors/moderators.

If you want to set this limit, note that an overall daily threshold must be set for the list in the first parameter of the keyword. If no "Daily-Threshold=" keyword is already present in your list header, the default is "Daily-Threshold= 50". Thus, to leave the default value in force and to add a daily limit of 5 postings per day per user, you would code:

```
* Daily-Threshold= 50,5
```

For more information, see the List Keyword Reference document.

2.13 Setting Up Lists for Specific Purposes

You can create certain types of lists from standard templates via the web administration interface. See Section 11 Using the Web Administration Interface for information on how to access the web administration interface.

2.13.1 Public Discussion Lists

Public discussion lists have always been the "classic" type of LISTSERV mailing list. Such lists are available to discuss just about everything imaginable. In the last few years it has become desirable to secure mailing lists against random spamming and mail bombing, but no discussion of different types of lists would really be complete without talking about this kind of list.

Typically, a public discussion list is wide-open (although some things, like the ability to review the subscribership, may be restricted). Anyone can subscribe (with a confirmation to verify the mailing path), anyone can post, anyone can read the messages in the archives, and security is set fairly low. Very large lists (hundreds or even thousands of users with hundreds of postings every week) may likely be set up this way as it is a "low-maintenance" way to run a list (and most spams tend to be caught by LISTSERV's anti-spamming filters anyway). For instance, you might have

```
* My public discussion list (MYLIST-L)
* Subscription= Open,Confirm
* Ack= Yes
* Confidential= No
* Validate= No
* Reply-to= List,Respect
* Review= Owners        Send= Public      Errors-To= Owner
* Owner= joe@example.com
* Notebook= Yes,E:\LISTS\MYLIST-L,Weekly,Public
```

For more security, you might want to code

```
* Validate= Yes,Confirm
```

and if you want to cut down on the amount of "me-too"ism on the list, you could set

```
* Reply-to= Sender,Respect
```

to force the default Reply-To: header to point back to the original poster instead of to the list. Note that the ",Respect" option means that if a user sends mail to the list that contains a "Reply-To:" header pointing back to the list (unlikely that this may be), LISTSERV will "respect" that header and use it. If you absolutely do not want this to be possible, you should code the following instead:

```
* Reply-to= Sender,Ignore
```

Caution: "Reply-To:" are not universally honored!

Note: There is one major caveat with regard to the use of the Reply-To= list header keyword. Setting this parameter guarantees only one thing -- that LISTSERV will generate an appropriate RFC822 Reply-To: header in the mail it distributes to subscribers. THERE IS UNFORTUNATELY NO GUARANTEE THAT THE MAIL TRANSFER AGENT (MTA) OR MAIL CLIENT ON THE RECEIVING END WILL HONOR THE Reply-To: HEADER. This is because some mail clients, out-of-office robots, and Internet MTAs either simply do not recognize the existence of Reply-To: or do not implement it properly. Specifically RFC2076 "Common Internet Message Headers" reports that the use of Reply-To: is "controversial", that is, "The meaning and usage of this header is controversial, meaning that different implementors have chosen to implement the header in different ways. Because of this, such headers should be handled with caution and understanding of the different possible interpretations." (RFC2076, page 4). While L-Soft recognizes that it is sometimes important to provide an explicit Reply-To: header to indicate a response path, L-Soft cannot and will not be held responsible for problems arising from the inability of a remote server to properly process Reply-To: headers.

2.13.2 Private Discussion Lists

Private discussion lists are similar to public discussion lists, but with varying restrictions on who may subscribe, who may post and who may view the archives. Such lists are relatively safe from random spamming since typically only a subscriber can post (but note that a spammer spoofing mail from a subscriber's address will probably be successful unless first caught by the anti-spamming filters). For instance:

```
* My private discussion list (PRIVATE-L)
* Subscription= By_Owner
* Ack= Yes
* Confidential= Service
* Validate= No
* Reply-to= List,Respect
* Review= Owners
* Send= Private
* Errors-To= Owner
* Owner= joe@example.com
* Notebook= Yes,E:\LISTS\PRIVATE-L,Weekly,Public
```

is a low-security private discussion list where subscriptions requests are passed on to the list owner(s) for review, only subscribers may post, and only subscribers may view the list archives. Here again, for more security you might want to set "`Validate= Yes,Confirm`", and of course you can have replies go to the original poster rather than to the list with "`Reply-To= Sender,Respect`" (with the same caveats as noted in Section 2.13.1 Public Discussion Lists).

2.13.3 Edited Lists

An edited list is one that requires a human editor to approve messages sent to the list. Some list software and most USENET newsgroups refer to this as "moderation", but to avoid confusion between two types of moderated LISTSERV lists, the present example will be referred to as an "edited" list.

Examples of edited lists range from refereed electronic journals to lists where the list owner simply wishes to exercise control over which postings are allowed to go to the list.

To set up a basic edited list, simply add

```
* Send= Editor
* Editor= someuser@somehost.com
```

to the basic list header. Note that the primary `Editor=` specification (that is, the first editor defined by an `Editor=` keyword for the list) must be a human person who will be able to act on postings sent to him or her for approval. You may not use an access-level specification (such as "Owner") when defining the primary editor for a list.

Please note that L-Soft recommends setting "`Send= Editor,Confirm`" so as to add a level of security against malicious users forging mail from an "`Editor=`" address to get around your moderation settings, or against badly-configured "vacation" programs that simply reflect the message back to the list in a manner that makes it appear that the mail is coming from the editor’s address. The "Confirm" option causes LISTSERV to request an "OK" confirmation from an editor when it receives mail claiming to be from that editor.

You can define multiple editors, but only the first editor will receive postings for approval. Anyone defined as an editor may post directly to the list without further intervention. Multiple editors can be defined on separate `Editor=` lines or can be grouped several on a line, for example,

```
* Editor= someuser@somehost.com,anotheruser@anotherhost.com
* Editor= yetanotheruser@his.host.com
```

To approve postings with the above configuration, the editor simply forwards (or "resends", or "bounces"--the terminology is unclear between various mail programs) the posting back to the list address after making any desired changes to the content. This should be done with a mail program that supports "Resent-" fields. if "Resent-" fields are not found by LISTSERV in the headers of the approved posting, then the posting will appear as coming from the editor's address rather than from the original poster. If your mail program does not support "Resent-" fields, you should use the "`Send= Editor,Hold`" option and approve messages with the "OK" mechanism described below.

If you do not need to physically edit the content of your users' posts (for instance, to remove anything considered "off-topic" or to remove included mail headers and so forth), you can code

```
* Send= Editor,Hold
```

The "Hold" parameter causes LISTSERV to send you a copy of the posting along with a "command confirmation request". To approve the posting, you simply reply to the confirmation request with "ok".

For security purposes, you can code

```
* Send= Editor,Confirm
```

which will cause LISTSERV to request a command confirmation ("ok") from the editor sending the approved posting back to the list. This makes it impossible for an outside user to "spoof" mail from an Editor address.

Naturally, you can also code

```
* Send= Editor,Hold,Confirm
```

Finally, please note that the NOPOST subscriber option will take precedence over `Editor=`, if set for someone defined as an editor. This means that if you have "`Default-Options= NOPOST`" for your list and you add an editor as a subscriber, you will have to manually reset the editor to POST (with "`SET` *`listname`* `POST FOR userid@host`") before things will work properly. You will know that this is necessary if your editor can successfully approve postings but is then told that he or she cannot post to the list.

2.13.4 Moderated Lists

Note: The `Moderator=` keyword is disabled in LISTSERV Lite.

A moderated list is similar to an edited list, but for LISTSERV's purposes it refers to a list that uses the Moderator= list header keyword to "load-share" posting approvals among several editors. It is set up similarly to an edited list, as follows:

```
* Send= Editor,Confirm
* Editor= someuser@somehost.com
* Moderator= someuser@somehost.com,anotheruser@anotherhost.com
* Moderator= yetanotheruser@his.host.com
```

This list will "load-share" the approval process between the three moderators, who will each receive one-third of the postings for approval. Note that a primary editor should still be defined.

If it is desired to have one editor handle more than a single share of the approvals, you simply define the editor more than once in `Moderator=`. For instance,

```
* Send= Editor,Confirm
* Editor= someuser@somehost.com
* Moderator= someuser@somehost.com,anotheruser@anotherhost.com
* Moderator= someuser@somehost.com,yetanotheruser@his.host.com
```

would cause every other posting to be forwarded to someuser@somehost.com for approval.

If the parameter "`All`" is coded at the beginning of the list of moderators, LISTSERV will send copies of all postings to all moderators, any of whom may approve the message. An example of this would be

```
* Moderator= All,kent@net.police.net,joe@bar.edu
```

Please note that something like

```
* Moderator= kent@net.police.net,All,joe@bar.edu,alex@reges.com
```

is not valid. "`All`" must appear at the beginning of the list of moderators.

Assuming "`Send= Editor, Hold`", once a message is approved by one of the moderators, any other moderator attempting to approve the same message will be told that the message cannot be found and has probably expired (since the cookie for that message will be gone).

If the message body is edited in any way before it is approved (i.e., by forwarding an edited copy back to the list), and more than one moderator is involved, duplicates are possible. Thus it is important that the moderators of any list set up this way pay close attention to whether or not the posting has already been approved by another moderator. Note carefully that this means if the "All" parameter is used in "`Moderator=`" with "`Send= Editor`" (that is, without the "`Hold`" parameter), again a separate synchronization method will have to be used to prevent duplicates, as two moderators are unlikely to make exactly the same edits to the message. Even if LISTSERV were able to identify the two submissions as being the same message, it would not know which to choose over the other.

The "`Hold`" and "`Confirm`" options for "`Send=`" can also be used with these examples, if desired. L-Soft recommends that "`Confirm`" be used by default.

Note: The NOPOST subscriber option will take precedence over both Editor= and Moderator=, if set for someone so defined. This means that if you have "Default-Options= NOPOST" for your list and you add an editor or a moderator as a subscriber, you will have to manually reset the editor to POST (with "SET listname POST FOR userid@host") before things will work properly. You will know that this is necessary if your editor or moderator can successfully approve postings but is then told that he or she cannot post to the list.

Note for moderation "OK" requests and MIME attachment display: In versions previous up to LISTSERV 1.8e, an OK confirmation request for a message coming to a moderated list displayed the message to be approved in its "raw" format; that is, there was no attempt made to display/decode MIME attachments that might be present in the message to be approved. LISTSERV now addresses the problem by including a copy of the first text/plain part (if one exists in the message) for the purpose of quick screening. The following restrictions apply:

1.) This is only done for MIME messages (even simple single-part ones, but they must have MIME headers).

2.) The text part in question is sent pretty much 'as is', that is, as an extra text/plain part in the message, with all the options and encoding and what not supplied in the original message. The reason is quite simply that it would be a lot of work and, in some extreme cases (incompatible code page, etc.), completely impossible, to embed it into the first text/plain part with the LISTSERV message. The drawback is that some mail agents might conceivably only show the first part until you take some kind of clicking action.

It is important to understand that only the first text/plain part is extracted in this fashion. The goal was to make it easier to approve or reject simple text messages, not to build a factory around a simple problem. The ENTIRE message is available at an extra click.

Where security is a concern, it is important to review the ENTIRE original message and not just the plain text part. There could be an obscene GIF or another text part or a text/html part not matching the contents of the text/plain part or whatever. This is why, again, you are given the ENTIRE original message.

List owners using certain email clients (specifically Pine, which handles attachments in a secondary viewing area) may find the new format difficult to use. If preferred, the pre-1.8e behavior may be reverted to by specifying "`NOMIME`" in the Send= list header keyword; for instance,

```
* Send= Editor,Hold,NoMIME
```

2.13.5 Semi-Moderated Lists

"Semi-moderation" was developed some years ago after a great debate on whether or not an "urgent" message should be allowed to be posted to an edited list without having to go through the approval process. Although this option is still available, it can be misused by anyone who knows about it, and is therefore not generally recommended for use. However, should this feature be deemed necessary, it is activated by setting

```
* Send= Editor,Semi-Moderated
```

Then, any subscriber needing to send an "urgent" message to the list simply types "Urgent:" in the subject line of their mail, followed by the subject of the message. Messages that do not have the "Urgent:" subject are forwarded to the list editor for approval as usual.

In order to minimize the chance of spam slipping through without editorial approval, messages with an "Urgent:" subject originating from non-subscribers will be rejected.

2.13.6 Self-Moderated Lists

So-called "self-moderated" lists were invented in 1993 or 1994 when the current epidemic of spamming was beginning to get cranked up and before the "spam filter" was developed by L-Soft. With the spam filter in operation, self-moderation is not as much of an issue anymore, but some lists still run this way.

Self-moderation takes advantage of the ability to make an access-level a secondary list editor, and is implemented as follows:

```
* Send= Editor,Confirm
* Editor= someone@someplace.com,(listname)
```

(The "`Hold`" and "`Confirm`" parameters for "`Send=`" may naturally be used if required. L-Soft recommends that "`Confirm`" be used by default.)

Usually, one of the list owners is the primary editor (here "`someone@someplace.com`") and the specification of (*`listname`*) makes all of the subscribers of the *`listname`* list editors, and thus eligible to send messages directly to the list without editor intervention. Postings from non-subscribers (e.g., spammers) are deflected to the primary owner for his or her disposition.

There is one caveat to this kind of list. If a user subscribes to the list, and later his mail address changes (for instance, the hostname changes slightly but mail sent to the old address is automatically forwarded to the new address), any postings from him to the list from the new address will be forwarded to the editor because the new address is not subscribed to the list. Thus there is a certain amount of list-owner overhead on this kind of list in keeping track of users whose addresses have changed and modifying the subscriber list to reflect those changes. The "`CHANGE`" command can be of help in this regard.

2.13.7 Private Edited/Moderated Lists

This type of edited or moderated list allows subscribed users to post with editor or moderator intervention, but rejects postings received from non-subscribers with a note to the poster stating that they are not allowed to post.

Using the same header you would create for an private discussion list (see Section 2.13.2 Private Discussion Lists), simply add the following line to the header:

```
* Default-Options= REVIEW
```

You should also add `Editor=` and (optionally) `Moderator=` keyword settings to the list. At least one editor must be defined to handle the message approval chores, otherwise the first listed list owner will receive the messages for approval.

The following rules apply:

- For brand-new lists or existing lists which have no subscribers, all subscribers added to the list after this option is set will be set to REVIEW, and nothing further needs to be done.
- For existing lists with existing subscribers, you will need to set the existing subscribers to the REVIEW option manually, that is, with the command

  ```
  QUIET SET listname REVIEW FOR *@*
  ```

- New subscribers who sign up or are added after you add the `Default-Options=` keyword setting will automatically be set to the REVIEW option.
- Finally, the list editor will also be set to REVIEW if he is subscribed to the list under this scenario. This can be important if the list editor wants to approve even his own postings (for instance, to help avoid someone spoofing mail to the list from his address). If the list editor does not require this "suspenders and belt" level of security, he can simply set himself to NOREVIEW.

2.13.8 Auto-Responders

Since LISTSERV Lite does not support list-level mail templates, this functionality is effectively not available in LISTSERV Lite.

An "auto-responder" is a type of list that simply responds with a set message whenever it receives mail from someone. This kind of list can be useful for things like service messages or upgrade availability, or even to simply send back a standardized message to a user who has sent mail to a "support" address.

A simple auto-responder header might look like this:

```
* Auto-responder for service messages
* Owner= someone@someplace.com
* Send= Public     Notebook= No     Subscription= Closed
```

In other words, it can be very simple, since you probably don't want notebook archives for this kind of auto-responder, you don't want people to subscribe to the list as it isn't really a mailing list, and so forth. To make the auto-response message for this list, you'd then create a *`listname`*`.MAILTPL` file that includes a `POSTACK1` template, like the following:

```
>>> POSTACK1 Service Message for &MYNAMES
&MYNAMES will be down Sunday from 0200 EST until 0500 EST for backups
and upgrades. For more information contact LSTMAINT@&MYHOST.
```

This particular template would inform the user that LISTSERV would be down (`&MYNAMES` translates to `LISTSERV@NODE` where `NODE` is the value of `NODE=` in the system configuration file) and to send questions to `LSTMAINT@` the local host. In order to change the service message, it would be necessary only to change the POSTACK1 template.

2.13.9 Announce-Only Lists

An "announce-only" list would be used to distribute a newsletter or other timely information where responses to the list are neither expected nor desired. A typical announce-only list header might look like this:

```
* The FOO Product Announcment List
* Owner= foo@myhost.com
* Owner= Quiet:
* Owner= anotheruser@myhost.com
* Owner= yetanotheruser@myhost.com
* Editor= foo@myhost.com
* Editor= anotheruser@myhost.com
* Editor= yetanotheruser@myhost.com
* Notebook= No
* Errors-To= Owner
* Subscription= Open,Confirm
* Validate= No
* Review= Owners
* Send= Editor,Confirm
* Reply-To= foo@myhost.com,Ignore
* Sender= None
```

This list is set up so that generally any response to postings will go back to `foo@myhost.com`, which might be a special account set up specifically to handle such things, or a mail alias pointing to another account. The newsletter can be posted by `foo`, or `anotheruser`, or `yetanotheruser`, all of whom are editors, but the likelihood is that it would be posted from the `foo` userid so that the From: line would read "From: foo@myhost.com".

L-Soft strongly recommends that all announce-only lists use the "`Send= Editor,Confirm`" or "`Send=Editor,Hold,Confirm`" setting. The "`,Confirm`" parameter tells LISTSERV to require a confirmation for any posting sent by a user defined as an `Editor=`. This is important for two reasons:

- **Security** – This setting tells LISTSERV to request confirmation from the Editor for all postings it receives that purport to be from that Editor. This prevents hackers from forging mail under an Editor's address, because any forgeries will require that the Editor in question approve them before they go to the list.
- **Loop Protection** – Certain broken mailers can and will bounce mail back to your list in a "reflected" manner, that is, the bounce will appear to be a legitimate posting from the Editor to the list instead of looking like an error. This is different from a forgery attempt because (it is assumed) the mailer on the other end is not doing this with malicious intent. Requiring the editor confirmation will stop these potential loop-generating messages from getting through to the list.

To stop a posting from going to the list under this scenario, simply don't OK it and delete the confirmation request message.

2.13.10 Restricted Subscription Lists with Automatically-Generated Questionnaire

Since LISTSERV Lite does not support list-level mail templates, this functionality is effectively not available in LISTSERV Lite.

Sometimes it is desired to send out a little questionnaire before approving a subscription to a list with a very narrowly-defined topic or to lists created for members of specific organizations. By setting "`Subscription= By_Owner`", you can of course force all potential subscriptions to require list owner approval. In the "old days", if you wanted more information before you approved the subscription request, you had to manually send a questionnaire out to the user and wait for him or her to return it to you.

By setting "`Subscription= By_Owner`" and adding two simple template forms to your listname.MAILTPL (as explained in Section 9 Creating and Editing Mail and Web Templates), you can now have LISTSERV send your questionnaire out automatically, as soon as the subscription request is received.

The first template form you need to add to *`listname`*`.MAILTPL` is called `SUB_OWNER`, and in this case it would typically look like this:

```
>>> SUB_OWNER &LISTNAME: &WHOM requested to join
.TO &WHOM
A copy of the &LISTNAME membership questionnaire has been sent to you.
Please read it carefully and follow the instructions to complete it and
return it to the list owners.
```

The `.TO &WHOM` directive is required so that the message is sent to the subscriber rather than to the list owner. If you want the non-quiet list owners to receive a copy of this message (which is admittedly unlikely), you can simply add `CC:` &OWNERS to the end of the `.TO` line, for example,

```
.TO &WHOM CC: &OWNERS
```

Or, if you want to cc: a specific user such as joe@unix1.example.com, use

```
.TO &WHOM CC: joe@unix1.example.com
```

Note: You cannot format the `SUB_OWNER` template; it all comes out as one long paragraph without formatting no matter what you do, because it is a "linear" template. But you should modify it from the default to let people know that they will receive a questionnaire to be filled out and returned.

The second template form you need to add to *`listname`*`.MAILTPL` is called `ADDREQ1` and it can be as simple or as detailed as you want. All of the available template formatting commands can be used in `ADDREQ1`. For instance:

```
>>> ADDREQ1 &LISTNAME Membership Survey
.RE OWNERS
.TO &WHOM
.CE &LISTNAME Membership Survey
NOTE: Please make sure when you send this back that it goes to the
address &LISTNAME-Request@&MYHOST. Thanks.

This is a standard questionnaire required for all prospectivesubscrib-
ers to &LISTNAME. Blah blah blah...
```

In this case, you want the message to go to the subscriber, with a Reply-To: header pointing back to the (non-quiet) list owners. The first line indicating the return address is added for those users with mail clients that don't recognize Reply-To: headers.

You can also put a pre-formatted ADD job into the questionnaire to simplify your job when the questionnaire comes back. For instance,

```
.fo off
-----------------------------------------------------------------
```

For List Owner's Use Only -- Be sure to include with your Reply

```
-----------------------------------------------------------
// JOB
  ADD &LISTNAME &WHOM &USERNAME
// EOJ
-----------------------------------------------------------
.fo on
```

For more detailed information on mail templates, see Section 9 Creating and Editing Mail and Web Templates.

2.13.11 Peered Lists

This functionality is not available in LISTSERV Lite.

Occasionally the need to split a very large list may arise. This was more common when LISTSERV ran only on BITNET, whereas the TCP/IP version of LISTSERV is not limited by BITNET constraints. However, because of the fact that subscribers may be scattered all over the world, in rare cases it can make sense to split (or "peer") a list and share the mail load among two or more LISTSERV servers. Peering also makes it possible to have list archives located in more than one place; for example, a list might be peered between a European host and a North American host, making it possible for subscribers on each continent to retrieve archives from the nearer host.

Although there is no problem about peering to another L-Soft LISTSERV list, linking to a non-L-Soft mailing list manager is not supported and can and will cause serious problems (including mailing loops) for which L-Soft international, Inc. could not be held responsible.

2.13.11.1 Linking Two or More LISTSERV Mailing Lists

Please observe the following points:

- All lists should have a Peers= keyword setting that includes all of the other peers in the group as its arguments. For example, consider a peer group containing ListA, ListB, and ListC. ListA must have "Peers= ListB@its.host.com,ListC@its.host.com", whereas ListB must have "Peers= ListA@its.host.com,ListC@its.host.com" and finally ListC must have "Peers= ListA@its.host.com,ListB@its.host.com".

  For lists running on LISTSERV for VM, setting the Peers= keyword makes it possible to EXPLODE them for better network efficiency. (Because peering is not widely used today, it is unlikely that the EXPLODE command will be ported to other platforms.)

- All lists must have the same list-level password, set with the PW= list header keyword. If this point is ignored, messages approved on one peer will not be accepted by the other peer and an error message will be generated, i.e.,

  ```
  The approval request code received together with your posting
  for the MYLIST-L list is incorrect. For a peered list, this
  may be a normal condition. The approval protocol is not
  guaranteed to work among peer chains with pre-1.8b servers,
  and will also fail if the peers have a different password. For
  a non-peered list, the only likely explanation is a failure in
  the mail system or a recent change in mail system version or
  configuration. At any rate, please resubmit your message and
  go through the approval procedure a second time, and contact
  the LISTSERV administrator if the problem persists.
  ----------------- Rejected message (73 lines) --------------
  ```

  This means that you must explicitly set the PW= list header keyword for each peer and not use the password LISTSERV generates automatically at list creation time. (This is the only case in which it is important and indeed required to manually set PW= for a list.)

- Each peer must be subscribed to at least one other peer, and the "real name" field for the subscription MUST be set to "Peer Distribution List".

2.13.11.2 Moving Users From One (Peer) Server to Another

You should be aware of the fact that a MOVE operation is not just an ADD to the new server and a `DELete` to the current one. This would effectively transfer the person from the old server to the new one but his distribution options would be lost in the process. Besides, you should make sure that the user does not lose any mail in the process. The proper course of action to be taken when people are moved from one list to the other is the following:

- Send mail to the list telling people that a new peer server is being linked to the list, and that some subscribers will be moved to it.
- If the prerequisites for using the `MOVE` command are met, you should use either individual `MOVE` commands (in the case that there are very few users to move) or a batch-`MOVE` command with associated `DDname` (see the LISTJOB MEMO guide for more information on commands-jobs) to move the users. You may want to use the `QUIET` option to suppress notification if there are a lot of users to move.

Warning: The `MOVE` command should not be used to move peer list servers. See the `MOVE` command description for more details.

If you cannot use the MOVE command, you should try one of the following two methods:

- For each user to be moved, issue the following commands in the following order:
  - `Query` *`listname`* `FOR` *`userid@host`* (old server), write down the options.
  - `QUIET ADD` *`listname userid@host full_name`*
  - `QUIET SET` *`listname options FOR userid@host`*
  - Wait until you get confirmation for the two previous commands

  - `QUIET DELete` *`listname userid@host`* (old server)

- If there are a lot of users to move, the following method is preferred:
  - `GET` *`listname`* (old server)
  - `GET` *`listname`* (new server)
  - If you are using VM XEDIT, then receive both files and use the XEDIT "PUT" and "GET" commands to move users from one list to the other. You must preserve the contents of columns 81-100 across the move.
  - If you are using another text editor, then make sure that the editor you are using does not "imbed" control codes such as line breaks, tabs or word-wrapping characters into the text when you edit it. Use the cut and paste controls to copy lines in their entirety. You must preserve the contents of columns 81-100 across the move. Imbedded control codes and/or word wrap will generate errors when the list is stored back on the server.
  - Store the two lists back on their respective servers.

2.13.11.3 Special Commands For Peered Lists Only

`ADDHere` *`listname userid@host <full_name>`* **`<PW=`***`list_password`***`>`**

The ADDHERE command is strictly identical to ADD, with the exception that the placement of the user is not checked against the list of peer servers; in other words, the specified user is added to the local list without any further verification. (By comparison, the ADD command causes LISTSERV to check automatically to see if there is no better-suited peer list for the specified user.)

`EXPLODE` *`listname <F=fformat>`* **`[VM only]`**

The EXPLODE command provides a means whereby a list can be automatically analyzed by LISTSERV to optimize the placement of its recipients over the various peer servers hosting the list. It requires a "Peers=" keyword to be defined in the list header (see the List Keyword Reference document). Non-BITNET userids will be exploded according to the network address of the corresponding gateway (as per the SERVICE NAMES file), or ignored if the gateway could not be identified. LISTSERV will create a commands-job file containing the necessary `MOVE` command to transfer all the users which were found to be (possibly) mis-allocated to the peer server which is nearest to them. This file will then be sent to you so that you can review it before sending it back to the server for execution.

```
MOVE listname userid@host <TO> newhost <PW=list_password>
  DD=ddname listid@newhost [VM only]
```

The `MOVE` command allows list owners to easily move users from one peer server to another. It will move the complete user entry from the source server to the destination one, including full name as it appears in the specified list and all list distribution options. The `MOVE` operation will be done in such a way that no mail can possibly be lost by the target while the `MOVE` operation is in progress (duplicate mail might be received for a short duration, however). Notification will be sent to the target user unless the QUIET option was used.

If the source and destination list names are identical, only the destination node ('newhost') needs be specified. Otherwise, the full network address ('listid@newhost') must be specified.

The `MOVE` command requires both source and destination lists to have the same password. Since each server will have to send a password to the other to validate the (special) `ADD/DELETE` commands it is sending to the other, it has potentially a way to trap the password specified by the server, thus thwarting any attempt at inventing a protocol to allow use of this command on lists which have a different password. Besides, no `MOVE` operation will be accepted on lists which do not have a password at all, because for technical reasons it would allow unauthorized users to easily add someone to a list (since there would be no password validation).

The `MOVE` command is the proper way to effect a move operation. You should not use any other command/set of commands unless you cannot use `MOVE`. THE MOVE COMMAND SHOULD NOT BE USED TO MOVE DISTRIBUTION LISTS!!! Since a `MOVE` is basically an `ADD + DELETE`, with the latter being done only AFTER the `ADD` is completed, moving a distribution list address with the MOVE command can cause a duplicate link to be defined for a short period of time. This could result in a transient mailing loop, which could become permanent if the size of the looping mailfiles is less than the size of the inter-servers "DELETE" command jobfile, and the RSCS priority of the latter has been altered.

2.13.12 Super-Lists and Sub-Lists

This functionality is not available in LISTSERV Lite.

It is possible to define a "super-list" (as in opposite of sub-list), that is a "container" list that includes all the subscribers in a predefined set of sub-lists. This can be done recursively to any depth. Site maintainers can create super-lists consisting of any of the lists on the server, regardless of who owns them. A non-maintainer list owner may convert a standard list that they own into a super-list, but they may only add other lists that they own to the Sub-Lists= setting. Attempts by non-maintainer list owners to add non-owned lists to their super-list will result in an error when the list configuration is stored, and the configuration will be left unchanged.

The value is a comma separated list of all the sub-lists, which must all be on the same (local) machine. For instance:

```
* Sub-lists= MYLIST-L,MYOTHERLIST-L
```

The default value for this keyword is null, that is, to have no sublists. In addition, the super-list and all of its sublists must reside on the same LISTSERV server.

The only difference between a normal list and a super-list is what happens when you post to it. With the super-list, the membership of all the sub-lists is added (recursively) and duplicates are suppressed. Other than that, the super-list is a normal list with its own archives, access control, etc. You can even subscribe to it, and this is actually an important aspect of the operation of super-lists. If you are subscribed to the super-list itself, the subscription options used to deliver super-messages to you are taken from your subscription to the super-list, just like with any other list. All combinations are allowed, and in particular NOMAIL is allowed, meaning you don't want to get messages posted to the super-list. When you are subscribed to multiple sub-lists, on the other hand, things work differently:

- NOMAIL subscriptions are ignored. You will get the super-message if you have an active (not NOMAIL) subscription to at least one sub-list. The idea is that the super-message must be equivalent to posting to all the sub-lists, without the duplicates. Since all it takes to get a message posted to all the sub-lists is a single non-NOMAIL subscription, this is how the super-list works. The only way not to get the super-messages is to subscribe to the super-list directly and set yourself to NOMAIL.
- The DIGEST and INDEX options are ignored and internally converted to MAIL. The first reason is that, since in most cases the user will be on multiple sub-lists (otherwise you don't need a super-list in the first place), the only safe method to set subscription options for super-messages is by subscribing to the super-list so that there is no ambiguity. The second reason is that, in most cases, super-lists will be used for out of band administrative messages rather than for large volume discussions, so it is actually preferable to have the message sent directly. The third reason is that the super-list and sub-lists may not necessarily offer the same options (DIGEST and INDEX). In particular it is expected that many super-lists will not have archives. If you want a DIGEST or INDEX for the super-messages, you must subscribe to the super-list directly.

Topics, if defined, are evaluated on a per-list basis. That is, for every sub-list (and for the super-list), LISTSERV determines whether the topic of the message is one that you want to see. If not, it acts as if you were not subscribed to this particular list. Roughly speaking, this works very well if all the sub-lists have the same set of topics (or a well-defined set of common topics), and doesn't work well at all if every list has its own set of topics.

Postings to a super-list are always archived in the super-list's notebooks (if enabled), and never in the notebooks of the sub-lists. This is because by its nature a posting to the super-list is not equivalent to cross-posting a message to all of the sub-lists. Rather, LISTSERV recourses into the sub-lists and generates an "on the fly" listing of all of the users on the super-list and the sub-lists (this is how it avoids duplicates, among other things) and then treats this "on the fly" listing as if it were the subscriber list of the super-list itself. You will note that a super-list posting is always identified as coming from the super-list, regardless of whether a given user is subscribed to the super-list or to one or more of the sub-lists.

Note: A `REVIEW` command sent for the super-list will not recourse into the sub-lists pointed to by the super-list. If you have a super-list called SUPER and you send a `REVIEW SUPER` command, LISTSERV will respond with only the people who are subscribed directly to `SUPER`. The only way to find out what users are covered by the super-list is to send `REVIEW` commands for the super-list and all of its sub-lists.

The REPRO subscriber option is recursive and will be honored for users who are subscribed to the sub-lists.

Access to the super-list's notebook archives is not automatically recursive. If you want sub-list subscribers to be able to access the archives of the super-list (but don't want the sub-list subscribers to have to subscribe to the super-list), then you must configure the Notebook= keyword for the super-list so that it contains references to each of the sublists. For example, say we have a super-list called SUPER and two sub-lists called SUB-A and SUB-B. We want the subscribers of both SUB-A and SUB-B to be able to read the archives of SUPER (since postings to SUPER won't be archived in SUB-A or SUB-B), but we don't want people who aren't subscribed to any of the three lists to be able to access the archives. So we set

```
* Notebook= Yes,C:\LISTS\SUPER,Monthly,Private,(SUB-A),(SUB-B)
```

and anyone subscribed to the SUPER list or to the SUB-A or SUB-B lists can access the SUPER archives.

If you have many sub-lists, you can specify multiple Notebook= lines, for example,

```
* Notebook= Yes,C:\LISTS\SUPER,Monthly,Private,(SUB-A),(SUB-B)
* Notebook= (SUB-C),(SUB-D),(SUB-E),(SUB-F)
```

LISTSERV will read these two (or more) Notebook= lines and concatenate the values.

2.13.13 Cloning Lists

Some sites may have a need for many lists that are essentially identical. For instance, a series of class section lists for a university department may have the same owner, allow the same class of users to subscribe, and so forth. LISTSERV makes it possible to maintain large collections of lists by "including" keywords from an external file.

For instance, consider a mathematics course with ten sections. Each section should have its own list (for instance, called `M101-001`, `M101-002`, and so forth), but the lists will otherwise be identical. The LISTSERV maintainer simply creates a text file (in this case called `M101 KEYWORDS`) containing the keyword definitions that will be shared by the lists, as follows:

```
PUT M101 KEYWORDS PW=createpw
* Owner= mathwhiz@someuni.edu (Professor J. Random User)
* Owner= Quiet:
* Owner= gradasst@someuni.edu (Joe Doakes, Graduate Assistant)
* Notebook= Yes,/home/listserv/archives/m101,Monthly,Private
* Auto-Delete= No
* Errors-To= gradasst@someuni.edu
* Subscription= Closed
* Notify= Yes         Confidential= Yes     Validate= Yes,Confirm,NoPW
* Reply-to= List,Ignore     Review= Owners     Send= Private
* Default-Options= Repro
```

Next, the LISTSERV maintainer stores this file in the usual way, by first making a filelist or catalog entry for it (as outlined in Section 8 File and Notebook Archives) and then storing it with a `PUT` operation. Generally the `GET` and `PUT` FACs for this file should specify that the list owner(s) should be able to retrieve and store it. The file must be stored in LISTSERV's A directory (the same directory that contains the `*.LIST` files).

Note: It is also possible to create this file directly in LISTSERV's A directory with a text editor; if you do so, make sure that you do not include the `PUT` command shown above. You should still make the filelist or catalog entry for the file so that the list owners can retrieve and store it.

Next, the LISTSERV maintainer creates and stores a skeleton list header for each of the section lists. The first section list (M101-001) is illustrated below:

```
PUT M101-001 LIST PW=createpw
* Math 101 Section 001 Mailing List
* .IK M101
```

The .IK command tells LISTSERV that whenever it uses this list, it should read the keyword definitions from the file M101 KEYWORDS (note carefully that the syntax is ".IK M101", not ".IK M101 KEYWORDS"). Now, whenever the professor in charge of the class wants to make a change to all of the M101 lists (for instance, he has a new graduate assistant), he simply GETs the file M101 KEYWORDS, makes the changes, and PUTs the file back, instead of having to GET separate headers for each list and make the changes to all of them individually.

Notes: On some servers it may be necessary to stop and restart LISTSERV (or do a GET+PUT of all of the list headers involved) to make changes to the KEYWORDS file appear. This is because LISTSERV may have the KEYWORDS file and/or the list headers that use it cached at the time you modify it.

In order to see the complete list header, send a REVIEW *listname* command. The response to a GET will be only the skeleton header with the .IK command. If GET did not work this way, you would not be able to change or remove the .IK command line once you set it.

The sample KEYWORDS file above includes a Notebook= keyword. This will cause the notelogs for all of the lists that use this KEYWORDS file to be written in the same directory, per the example, /home/listserv/archives/m101. This means that in that directory you would have notelogs for the M101-001 list, the M101-002 list, and so forth (depending of course on what lists use the example M101 KEYWORDS file). If this behavior is not desired, simply don't put a Notebook= keyword in the KEYWORDS file, and define it in the list header for the cloned list instead, either before or after the .IK directive.

For the web archive interface, note carefully that if you do use the same directory for all of the cloned lists' notelogs, you will still have to make separate web archive directories for each list under your WWW_ARCHIVE_DIR directory if you intend to serve the archives via the web interface. In other words, the web interface doesn't care where you keep a list's notelogs as long as it has a directory specified under WWW_ARCHIVE_DIR for it to write the list's web archive indexes into. So while all of your notelogs may go into /home/listserv/archives/m101, regardless of the name of the cloned list, you still need to make (for example) /usr/local/etc/httpd/htfiles/archives/m101-001 and so forth in order to serve the notelogs on the web.

2.14 List Passwords are now Obsolete

When creating the list, a random password is assigned for security if the LISTSERV maintainer does not define one explicitly. List passwords are no longer necessary in all but one special situation; they are simply another line of defense, and it is much more secure to allow LISTSERV to randomly assign the list password and for you to use a personal password to validate your LISTSERV commands. See Section 2.9 Defining List Owners to learn how to create a personal password.

The only situation in which a list password MUST be defined explicitly in a list header is in the case of peered lists, where the PW= list header keyword must be set to the same value on all peers.

2.15 Allowing/Blocking MIME Attachments

LISTSERV includes a MIME attachment-filtering feature which is configured at the list level by setting the Attachments= list header keyword. The new keyword allows three distinct modes:

- Allow all MIME attachments, no filtering or blocking
- Reject MIME attachments with notice to the poster
- Filter MIME attachments out of messages transparently

In addition, you can configure specific MIME types to reject or filter while allowing other types through (for instance, you can block executable files but allow images or word processing files based on their MIME type).

For information on the various settings, please see the section on the Attachments= keyword in the List Keyword Reference document.

2.16 Content Filtering

This feature is not available in LISTSERV Lite.

This feature is intended primarily to filter out-of-office messages and the like. It is not intended as a profanity filter. Attempts to configure it to filter profanity will most likely prove to be futile in the long run and are not recommended by L-Soft.

The `CONTENT_FILTER` mail template form, if present, contains filtering rules, one rule per line, empty lines ignored. Each rule has the following format:

```
[prefix:] pattern
```

The prefix, if present, can be a mail header tag (e.g. "Subject:"); "Header:" to check the whole header; or "Text:" to search the message text. The latter is the default if no prefix is supplied, it is provided in case the pattern contains a colon in the first word. If there are multiple mail header tags with the specified name (e.g. "Received:"), each such tag is searched and it is enough for one of them to match the pattern. If the requested tag is not present in the header, there is (surprise!) no match. A text search will search every line of the first text/plain part in the message. If there is no text/plain part, there is no match. Again, this is designed to filter read receipts, loops, chain letters, spam, you name it. There was no attempt on the developers' part to make this a profanity filter, and future versions will not be "enhanced" to make futile attempts at (for instance) decoding Word documents to look for obscene words.

Regular comparisons such as those described above are not case sensitive. Patterns are standard LISTSERV patterns, that is, the asterisk is the wildcard character. If there is no asterisk in the pattern, it is replaced with "*pattern*" much like the SCAN command.

Documented Restriction: You cannot match literal asterisk characters in a string as there is no way to escape them. Any asterisk in a pattern will always be evaluated as a wildcard.

The content filter also supports "exact match" comparisons, which are triggered by a double colon. For instance:

```
Subject::
```

There are two significant differences between exact and regular match:

- You must supply your own wildcard characters in an exact match (if you want to use wildcards, that is). A regular match will insert leading and trailing wildcards if none are found. Thus, an exact match is the only way to make a comparison without wildcards.
- You can make an exact match for the empty string. Empty regular matches are ignored since they map to a wildcard comparison for **, which would be always true. This also makes it possible to apply an exact match to a message that does not contain a specified header. For instance, if you want all messages to contain a (mythical) KABOOM: RFC822 header, with an exact match you can tell LISTSERV to perform one of the content-filtering actions if the the header is not present. This is not possible with a regular match.

Note: You cannot differentiate a header with an empty KABOOM field from a header with no KABOOM field.

One of the most handy uses for the exact match syntax is to be able to write a rule to reject messages with blank subject lines. For instance:

```
Subject::
Action: REJECT Please resubmit your message with a non-blank subject.
```

Every rule can, optionally, be followed by an action rule. This has the following format:

```
Action: ALLOW
Action: REJECT reason
Action: DISCARD comment
Action: MODERATE
```

(The available actions are the same for both regular and exact comparisons.) For instance,

```
>>> CONTENT_FILTER
Subject: Out of office
Action: REJECT OOO messages are not allowed on this list.
Subject: Auto-Generated:
Action: REJECT
Text: Click here to be removed
Action: REJECT Buzz off, spammer.
Subject::
Action: REJECT Please resubmit with a non-blank subject.
Subject: copyright
Action: MODERATE
```

```
To: friend@public.com
Action: DISCARD This guy is a spammer
```

The default is "Action: REJECT" with no specified reason. REJECT means that the message is rejected. MODERATE means that the message is to be forwarded to the list editor to be manually approved or rejected. DISCARD means that the message is to be dropped on the floor without further processing; any text following DISCARD is echoed to the LISTSERV console (and is thus logged).

ALLOW means that the message is allowed and all remaining rules are ignored. This could be used in moderated lists to allow the list moderator to bypass certain filters, for instance:

```
>>> CONTENT_FILTER
Subject: Out of office
Action: REJECT OOO messages are not allowed on this list.
From: JOE@EXAMPLE.COM
Action: ALLOW
Text: Click here to be removed
Action: REJECT Buzz off, spammer.
```

In the example above, messages with Subject: lines containing "Out of office" are rejected. Messages containing the text "Click here to be removed" are also rejected UNLESS they come from joe@example.com.

The text of the rejection is fetched from the BAD_CONTENT mail template form, with the reason supplied as a variable called &COMMENT. The rejection message looks like this:

```
Date:         Tue, 4 Dec 2001 22:03:42 -0500
From:        "L-Soft list server at LISTSERV.EXAMPLE.COM (1.8e)"
              <LISTSERV@LISTSERV.EXAMPLE.COM>
Subject:      Rejected posting to TEST@LISTSERV.EXAMPLE.COM
To:           Joe User <joe@EXAMPLE.COM>

Your posting to the TEST list has been rejected by the content filter.
OOO messages are not allowed on this list.
```

followed by the text of the posting including all mail headers. (In this case the body of the message contained the text "out of office" and the rule above was applied.)

A default site-wide `CONTENT_FILTER` template form may be defined in `$SITE$.MAILTPL` for use by lists whose owners do not prefer to provide their own custom versions in their `listname.MAILTPL` files.

2.17 DomainKeys Message Signing

This feature is not available in LISTSERV Lite.

DomainKeys message signing is available to sites running LISTSERV Classic or LISTSERV Classic HPO. Current LISTSERV maintenance is also required. For more information on how to configure LISTSERV for DomainKeys support, please contact your site administrator.

Assuming that it is available for your use, DomainKeys support for lists is enabled by default. This means that all list postings and administrative messages related to a list will be signed to assert that they actually originated from your LISTSERV server.

If for some reason you wish to disable DomainKeys message signing for a given list, you can do so by adding

```
* Misc-Options: NO_DKIM_SIGNATURE
```

to your list header. Or, if you prefer to disable it server-wide by default, you can add NO_DKIM_SIGNATURE to the DEFAULT_MISC_OPTIONS site configuration variable setting.

Incoming DomainKeys or DKIM signatures submitted to a mailing list will be removed unless "`Misc-Options= KEEP_DKIM_SIGNATURE`" is set in the list configuration. This is necessary because these signatures almost never match after the message has been processed. The worst thing that could possibly happen to your deliverability is a DomainKeys signature that does not match and causes the message to be flagged as suspicious.

The KEEP_DKIM_SIGNATURE option is experimental and not meant for general use. As DomainKeys is specified today, signatures DO NOT survive posting to mailing lists (LISTSERV or otherwise), so LISTSERV removes them by default to avoid triggering alerts for subscribers on systems that have implemented the client side of DomainKeys. The DKIM specification may be more robust in this respect, but even DKIM signatures will probably not survive when posted through a mailing list. Use the KEEP_DKIM_SIGNATURE option at your own risk.

Section 3 Advertising Your Public Mailing Lists

3.1 List of Lists Maintained by LISTSERV

LISTSERV automatically produces a List of Lists that may be reviewed by users anywhere on the Internet in one of two ways:

- L-Soft's CataList service at http://www.lsoft.com/CataList.html.
- The LISTS GLOBAL searchtext command. This list of lists is made up of one-line entries containing the short listname and the descriptive title of the list (up to about 60 characters in length). A sample of the List of Lists format can be seen in Section 2 Starting a Mailing List.

Note: It is possible to code a descriptive title in your list header that is more than 40 columns long, but the List of Lists will include only the first 40 columns of that title. Therefore, it is important from this respect to be sure that the descriptive title of your list is succinct and to the point.

3.2 Adding HTML to a List Header for the CataList

L-Soft's CataList service (http://www.lsoft.com/CataList.html) allows users to search the global list of public LISTSERV lists via the World Wide Web. Adding an HTML description to a list is easy, and can do a lot to enhance the appearance of a list in the database. All you have to do is update your list header and add the text of your choice. Here is an example:

```
* The coffee lovers' list
*
* Review= Public    Subscription= Open          Send= Public
* Notify= Yes       Reply-to= List,Respect
* Notebook= Yes,L,Monthly,Public
*
* Owner=  claudia@espresso.xyz.it (Claudia Serafino)
*
* <HTML>
* COFFEE-LOVERS is an open list for, well, coffee lovers! Our
* motto is: <cite>"Instant – just say no!"</cite>
* That's pretty much our whole charter, although there are a
* few other <a href="http://www.coffee.org/charter.html">
* rules</a> that you may want to read before joining. For
* instance, we don't allow flame wars about decaf: if you like it,
* well, it's your body after all.
*
* <p>The list is maintained by
* <a href="http://www.coffee.org/claudia.html">Claudia
* Serafino</a> (that's me!) and you will find all sorts of
* useful info about coffee on my home page.
* </HTML>
*
```

In other words, you just insert your HTML text in the list header and bracket it with `<HTML>` and `</HTML>` tags (these tags tell the web interface where the HTML text begins and ends – they are not actually sent to the web browser). There are three simple rules that you must follow when inserting your HTML data:

1. The <HTML> and </HTML> tags must appear on a separate line, as shown in the example above. You cannot have anything else on that line and, in particular, you cannot mix keyword definitions with HTML data.
2. The HTML data you are providing is embedded into the document shown by the web interface when users query your list. Because you are given some space between two horizontal rules on an existing page, rather than a whole new page. you should not include tags that affect the whole document, like for instance <TITLE>.
3. While this procedure is compatible with all versions of LISTSERV, there are a few restrictions on the placement of equal signs within your HTML text with versions that do not have any specific support for the <HTML> and </HTML> markers. In practice, you can ignore this rule unless you get an error message while storing your list.

When reformatting your list header description for HTML, bear in mind that the text will not always be viewed using a web browser. It is best to keep the formatting as clear as possible and minimize the usage of HTML tags, since there are still many people without WWW access. For instance, do not hesitate to use white space between paragraphs for clarity.

3.2.1 Update latency

Barring network outages, a list header update takes a maximum of 24h to be reflected in the distributed LISTS database. Database updates are usually scheduled to be broadcast at night, so the changes take place overnight. Once the LISTS database has been updated, it can take a maximum of 24h for the frozen copy of the database used by the web interface to be updated. In most cases, both the LISTS database and its frozen copy on the web server will be updated overnight. However, if the site hosting your lists is several time zones west of the site hosting the web server, and if that server only updates itself once a day, you may have to wait two days for your update to be reflected.

3.2.2 Inserting a Pointer to Another List

Sometimes it may be useful to link a number of related lists together so that the viewer can quickly examine all the lists without having to go back to the search screen and retyping the names you are providing. You can do this using the special HTML sequence:

```
<!--#listref listname@hostname-->
```

This sequence is internally translated to an <a> tag with a URL that will bring up information about the list you indicated. You must then provide a suitable caption and a closing </a> tag. Example:

```
Don't forget to take a look at
<!--#listref COFFEE-L@COFFEE.ORG-->
the coffee list!</a>
```

3.2.3 Restrictions on the Placement of Equal Signs

While all versions of LISTSERV are supported, servers which have no specific support for the `<HTML>` and `</HTML>` tags will process your HTML data as an ordinary list header line and attempt to determine whether it contains a list header keyword or descriptive text. The exact algorithms vary from one version to another, but in general the parser looks for a single word followed by an equal sign. With HTML text, it is possible (if unlikely) to generate such patterns. Here is an example:

```
*
* Sample list with problem pattern
*
* <HTML>
* For more information on the list, just check <a
* href="http://www.xyz.edu/mypage.html">my home page.</a>
* </HTML>
*
```

In that case, you can just reorder the HTML data so that the equal sign does not appear in this position. Alternatively, if the equal sign was meant to be actually displayed as an equal sign (as opposed to being part of some HTML tag), you can use the HTML escape sequence `&#61;` instead.

3.3 Defining Search Categories in a List Header for the CataList

Note: The complete list of search categories may not yet be available when LISTSERV is released. Note also that during the "pilot" phase of categories implementation, all categories will be "open", and you can define search categories for your list as long as the categories you define are in compliance with the rules for defining categories. When the "production" phase begins, only categories defined below as "open" will be open, and if a list is created or modified without a "Categories=" keyword, LISTSERV will issue a warning (but will go ahead and store the list without it).

Another feature of the CataList service discussed in the preceding section is the ability to search for lists based on topic categories. For instance, a user might be looking for lists that discuss various aspects of opera. The same user might want to search not just for lists that discuss opera in general, but great operatic tenors in particular.

In order to implement search categories for your list, you use the new "Categories=" list header keyword, in conjunction with the list of categories that can be found at the CataList site. The URL for the category list is http://www.lsoft.com/listcat.html.

If you do not have a web browser, you can issue the command

```
GET LISTCAT FILE
```

to LISTSERV@LISTSERV.NET or any LISTSERV server running version 1.8c or higher to have a list of categories mailed to you.

A typical category listing is in two parts. The first part is the category title itself (this is what you code in the "Categories=" keyword). The second part is an optional description of what the category covers. For instance:

```
Category:SubCategory:MinorCategory Description of this category
```

There are two types of categories that you need to be aware of.

- **Open Categories** – These categories have a description indicating that they are open and can be added to. Taking our example of great operatic tenors above, you might see the following category listed:

  ```
  Arts:Music:Opera:Singers Operatic Singers (Open)
  ```

  You notice that there are further subcategories like

  ```
  Arts:Music:Opera:Singers:Te_Kanawa_Kiri
  Arts:Music:Opera:Singers:Caruso_Enrico
  ```

  and so forth, but (gasp!) no category for your favorite tenor, Luciano Pavarotti! And your list is PAVAROTTI-L. Not to worry, however. Because the category of "Singers" is open, you can simply code:

  ```
  * Categories= Arts:Music:Opera:Singers:Pavarotti_Luciano
  ```

  and LISTSERV will accept the new subcategory "Pavarotti_Luciano".

Notes: When you create a new category, it will not show up until the central categories list has been updated.

There are two "root level" open categories, `Misc` and `Local`. The `Misc` category is world-searchable. If, however, you code a `Local` category, it will only be searchable from the search engine running on the server hosting your list.

- **Closed Categories** – These are categories that cannot be added to. In other words, if you see a category like:

  ```
  Computers:Internet:Mailing_List_Managers:LISTSERV:Manuals:
  List_Owners_Manual List Owner's Manual for LISTSERV
  ```

  whose description does not indicate that it is open, then you cannot add new categories after the last term. If you try to create a new subcategory under a closed category, you will receive an error message when you PUT your list header, and your updated header will not be stored.

3.3.1 Examples of Category Settings

Categories are defined by the new "Categories=" list header keyword. Each category string's subcategories are internally delimited with colon (":") characters. Each separate category string is separated from the others with commas. If your "Categories=" keyword setting gets too long to fit on one line, simply define multiple "Categories=" keywords. Note that spaces are not allowed in categories; therefore

```
* Categories= Arts:Music:Opera:Singers:Luciano Pavarotti
```

is not legal, but

```
* Categories= Arts:Music:Opera:Singers:Luciano_Pavarotti
```

is.

A simple category setting would be:

```
* Categories= Arts:Music:Opera:Singers
```

and if someone searched on that category, they would find our list. But we saw above that we can create a new category if we are running a list dedicated to Luciano Pavarotti. So instead, we might code

```
* Categories= Arts:Music:Opera:Singers:Pavarotti_Luciano
```

If, however, we're running a list for the Three Tenors, we might want to code:

```
* Categories= Arts:Music:Opera:Singers:Pavarotti_Luciano
* Categories= Arts:Music:Opera:Singers:Domingo_Placido
* Categories= Arts:Music:Opera:Singers:Carreras_Jose
```

Or even:

```
* Categories= Arts:Music:Opera:Singers:Three_Tenors
```

depending on our preference.

If you code a sub-category that does not exist in a "closed" upper-level category, LISTSERV will respond with an error message that will list the legal sub-categories that you can use.

3.4 Implementing the INFO <listname> Command

This functionality is not available in LISTSERV Lite.

Section 9 Creating and Editing Mail and Web Templates includes details on how to include an informative paragraph in the information mail template file for your list. When a user sends the command INFO listname to your server, LISTSERV responds with either:

- The default response, which simply sends a copy of the list header to the user; or
- The customized paragraph included in the `*listname*.MAILTPL` file.

If `*listname*.MAILTPL` does not exist, the default response is sent. Also note that the user may send the INFO listname command to any L-Soft LISTSERV host (including the Global List Exchange discussed below), which will forward the request to the appropriate server.

3.5 The Global List Exchange (GLX)

The Global List Exchange, or GLX, is a central clearinghouse for LISTSERV subscriptions and List of List requests. For instance, If a user knows the name of a list but not the name of the host server, GLX simplifies the process by giving the user a single address where all subscription requests for lists running on L-Soft's LISTSERV can be sent.

By adding the GLX address in all advertisements for your list, you help other list owners as well as yourself by making it simple for users to subscribe to any list. Additionally, if for some reason a user is unable to contact your server directly, the GLX gives him an alternate subscription method.

The GLX address is LISTSERV@LISTSERV.NET.

3.6 How NOT to Advertise a Mailing List

It is generally considered a breach of netiquette to invade the privacy of other lists with a broadcast announcement that your list is up and running. The only time when this might be acceptable is when your list addresses a concern of people already subscribed to another list. If you feel it necessary to post an announcement on someone else's list, it is good manners to first send private mail to the owner of that list and ask his or her permission to do so. (The same policy applies to USENET newsgroups, though it may be more difficult to find out who the moderator is.)

It is certainly a breach of netiquette (and many networks' appropriate use policies) to blindly post multiple copies of your announcements to multiple lists. This kind of behavior is termed a "spam", something about which you may read more in Section 6 Moderating and Editing Lists. This kind of announcement is guaranteed to reap a good deal of bad will and may well result in the revocation of your network privileges.

Section 4 Managing Subscriptions

4.1 Adding and Deleting Subscribers to/from a List

A list owner may add and delete subscribers manually. The command syntax is:

```
ADD listname netaddress full_name
DELete listname netaddress
```

In a perfect world, subscribers would understand intuitively how to subscribe and unsubscribe from mailing lists. Unfortunately, this is not always the case. Depending on an individual's style of list management, a list owner may choose to add or delete subscribers to the list manually, or send the potential subscriber instructions on how it is done. (See Appendix B: Sample Boilerplate Files for sample "boilerplate" instruction files that can be modified to suit local purposes.) And for lists coded `Subscription= By_Owner` or `Subscription= Closed`, it is of course necessary to use the `ADD` command to subscribe a user.

If the list is set to confirm mailing paths for new subscriptions (`Subscription= Open,Confirm`), it is probably wisest to use the latter option, since if a subscriber is added manually to a list, the confirmation process is bypassed.

`Full_name` should contain at least two discrete words, but it is also possible to add users without knowing the value for *`full_name`*. Simply use an asterisk ("*") character. If the user is already subscribed to another list on the same host, LISTSERV will pick up the value for *`full_name`* from its signup files. Examples are:

RIGHT: `ADD DOAKES-L joe@example.com Joe Doakes`

RIGHT: `ADD DOAKES-L joe@example.com *`

WRONG: `ADD DOAKES-L joe@example.com Joe`

WRONG: `ADD DOAKES-L joe@example.com Joe-Doakes`

When adding users, `ADD` will also accept a full RFC822 address that you can cut and paste from the "From:" line of a message. Be sure that you remove the "From:" part of the line. For example, the "From:" line

```
From:  Joe User <JoeUser@example.com>
```

becomes an ADD command as follows:

```
ADD MYLIST-L Joe User <JoeUser@example.com>
```

4.1.1 Adding Users Whose Address and Read Name Exceed 80 Characters

Although this is not as much of a problem as it used to be, it can happen with any system which allows users to have a very long "local part" (i.e., the part to the left of the "@") in their userid, or with users on systems that just have very long names, such as some of the hosts in the .US domain generally have. For instance, you might try to send the following ADD to LISTSERV:

```
QUIET ADD MYLIST someone.with.a.real.long.userid.that.wraps@hishost.com
His Name
```

"His Name" wraps to the next line. If you send this to LISTSERV, LISTSERV treats the two lines as separate commands even though you did not hit RETURN after the user's address, and it responds:

```
> QUIET ADD MYLIST someone.with.a.real.long.use-
rid.that.wraps@hishost.com someone.with.a.real.long.use-
rid.that.wraps@HISHOST.COM  is not  yet in  the signup file. Please
specify the full name of that person, as in "ADD MYLIST JOE@XYZ.EDU Joe
H. Smith".
> His Name
Unknown command - "HIS". Try HELP.
```

To avoid this problem, set up your `ADD` command with a "continuation card" as follows:

```
// QUIET ADD MYLIST someone.with.a.real.long.userid.that.wraps@hishost.com,
His Name
```

Typically this was a problem primarily with the X.400 and X.500 addressing schemes, which are not as prevalent as they used to be.

4.1.2 X.400 and X.500 Addressing – Special Problems

X.400 and X.500 addressing schemes can cause problems for the list owner who is trying to add or delete one. These addressing schemes use the "/" character to separate address elements, but to LISTSERV, "/" is a special character and you would not be able to add or delete one of these addresses by simply cutting and pasting it into an `ADD` or `DELETE` command.

For instance, you might have an address like:

```
/G=Joe/S=Randomuser/OU=403402ABD/O=SOME.CORP/@LANGATE.SOME.HOST.COM
```

In order to either add or delete this address, there are two issues:

- The address may wrap to the next line once you add the DELETE listname command, and LISTSERV will not accept it.
- The address contains characters that LISTSERV will reject as illegal (the "/" character).

For adds, to get around both of these issues, you must use a LISTSERV JOB syntax as follows:

```
ADD MYLIST-L DD=X500 PW=MYPASSWORD
//X500 DD *
/G=Joe/S=Randomuser/OU=403402ABD/O=SOME.CORP/@LANGATE.SOME.HOST.COM
/*
```

Any other method will trigger an RFC822 parser error because of the "/" characters in the address. (A user who is subscribing from an address like this will have no trouble; it is only when the list owner uses the `ADD` command that this difficulty surfaces.)

For deletions, to get around both of these issues, the wildcard character ("*") can be used. You may not need the entire address in order to delete it, so you might just use

```
DELETE MYLIST *G=JOE*S=RANDOMUSER*@LANGATE.SOME.HOST.COM
```

which solves both the line wrap problem and the illegal character problem at the same time.

You can also use double-quotes around the address if it contains illegal characters, and a "continuation card" (see Section 4.1.3 Continuation Card Syntax) if the address is too long to fit on one line:

```
// DELETE MYLIST,
"/G=Joe/S=Randomuser/OU=403402ABD/O=SOME.CORP/@LANGATE.SOME.HOST.COM"
```

4.1.3 Continuation Card Syntax

The basic syntax of a continuation card is

```
//<space><beginning of command><space><comma>
<continuation of command><space><comma>
<continuation of command>....
```

for example,

```
// QUIET ADD MYLIST someone.with.a.real.long.userid.that.wraps@hishost.com,
His Name PW=mypassword
```

or, for instance, for a large GETPOST job,

```
// GETPOST MYLIST 10769-10770 10772 11079 11086 11095 11099-11100 11104,
11111 11115 11118 11121 11124 11131 11144 11147 11153 11158 11166 11168
```

Without going into a lot of detail, the "`//<space>`" at the beginning of the command causes LISTSERV to look for a comma at the end of the first line and, if if finds the comma, to add anything following the comma on the second line to the end of the first line. Be sure to put a space before the comma at the end of the first line, as LISTSERV will not add the space for you.

For more information, see the section on LISTSERV's Command Jobs Language Interface (CJLI) in the Advanced Topics Manual for LISTSERV.

4.2 Finding Users Who Do Not Appear in the List

Sometimes the list owner will get a message from a subscriber who says, in essence, "I keep trying to (unsubscribe/change to digest/etc.) and LISTSERV says I'm not subscribed. Can you help?" This requires some detective work.

There are a couple of strategies for figuring out what is wrong. List owners should first use the powerful SCAN command to search for a pattern anywhere in the subscriber list. The syntax is:

```
   SCAN listname search-text
```

For instance, "SCAN TEST-L Nathan" might return:

```
   > scan test-l Nathan
   Nathan Brindle <nbrindle@INDYCMS.IUPUI.EDU>
   Somebody Else <nathan@BAZ.NET>
   Jonathan Smith <jsmith@FOO.BAR.COM>
   SCAN: 3 matches.
```

Note: SCAN is not case-sensitive. "Nathan", "NATHAN", and "nathan" all return the same results.

Searches with SCAN should start out simple and become more complex as needed. For instance, if there are only three people in the list with the string "NATHAN" as part of their subscription record, it will be unlikely that you will need to make the search any more complex. If you are looking for "SMITH", however, it may be necessary to further qualify your search string, say to look for "JOE SMITH". Another reason it is important to begin with a simple search string is that your user may not be subscribed under the exact address the error is returning to you. For instance, say you don't have the user's id, but you have a host name. You can search for all occurrences of the host name, but note that the search:

```
    SCAN TEST-L MAIL.FOO.BAR.COM
```

will not find the user jsmith@foo.bar.com. If you run the following search:

```
    SCAN TEST-L BAR.COM
```

however, you will find Mr. Smith's subscription.

Another possibility is that the subscriber may be using more than one address to work with his subscription. For instance, say the user's complaint to you came from JOE@SUN6.SOMEUNI.EDU. Looking at the list, you find a subscription for JOE@SUN8.SOMEUNI.EDU. LISTSERV has no way to know that JOE@SUN6 is the same person as JOE@SUN8, even though Joe and you know they are. The solution to Joe's problem above is for you to delete his SUN8 subscription and add his SUN6 address. Then Joe needs to be sure that he uses SUN6 in the future, if not for reading mail, then at least for managing his own subscription.

Another strategy would be to submit a wildcard QUERY to the list. The drawback to this method is that it might require multiple tries to find the subscription, depending on the complexity of the wildcard query.

Note: Not only can this sort of problem arise from a subscriber using more than one workstation to read mail, but it can also arise when a particular site changes its domain configuration, forwards mail from the old addressing scheme to the new addressing scheme, and doesn't inform its users of the change. In these cases, users often don't realize there is a problem until they try to unsubscribe or change personal options, because the change has been transparent to them.

4.3 Converting Existing Lists from Other Systems to LISTSERV

4.3.1 Converting Mailing Lists

Currently there are no supported conversion programs that will take (for instance) a Majordomo or ListProc mailing list and convert it to LISTSERV format. However it should be possible to extract the address list from the non-LISTSERV list and use a bulk add operation (see Section 4.4 Adding Subscribers to Lists in Bulk) to populate your new LISTSERV list.

4.3.2 Converting Message Archives

Existing list archive notebooks will probably not be in LISTSERV format (a modified VM MAILBOOK format), but rather, in the standard unix mailbox format. Again there are no supported programs to convert such archives to the LISTSERV format, but the basic format is as follows:

Message separator
Body of Message

Message separator
Body of Message

The MAILBOOK message separator is a line of 73 "=" characters (ASCII &H3D). Each archive notebook file must start with a message separator as the first line, e.g.:

```
=========================================================================
Date:         Tue, 3 Mar 1998 10:36:55 -0500
Sender:       Test list <TEST@LISTSERV.EXAMPLE.COM>
From:         Nathan Brindle <nathan@example.com>
Subject:      Test
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

First test message
=========================================================================
Date:         Tue, 3 Mar 1998 10:39:11 -0500
Sender:       Test list <TEST@LISTSERV.EXAMPLE.COM>
From:         Nathan Brindle <nathan@example.com>
Subject:      Test2
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Second test message
```

and the notebooks must be named in a standard LISTSERV format, e.g., `TEST.LOG9803A`, so that LISTSERV will see them and include them in the output of the INDEX listname command.

Note: For unix mailbox-formatted archives, you must remove the first line of each message, which begins with "From" followed by a space (this is the standard unix mailbox delimiter). Below is an excerpt from a unix mailbox for illustration purposes:

```
From owner-test@listserv.example.com  Mon Dec 29 15:17:20 1997
Return-Path: <root@listserv.example.com>
Received: from localhost (root@localhost) by listserv.example.com
(8.8.3/8.8.3) 0
Date: Mon, 29 Dec 1997 15:17:20 -0500 (EST)
From: root <root@listserv.example.com>
To: test@listserv.example.com
Subject: Test
Message-ID: <Pine.LNX.3.95.971229151703.711A-100000@listserv.exam-
ple.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII
Status: RO
X-Status:

This is a sample message from Majordomo in unix mailbox format.

Root
From owner-test@listserv.example.com  Mon Dec 29 15:23:51 1997
Return-Path: <root@listserv.example.com>
Received: from localhost (root@localhost) by listserv.example.com
(8.8.3/8.8.3) 0
Date: Mon, 29 Dec 1997 15:23:51 -0500 (EST)
....
```

Each of the lines beginning with From owner-test@listserv.example.com is the delimiter separating one message from the next.

4.4 Adding Subscribers to Lists in Bulk

If you are moving a list from a non-LISTSERV site, you can quickly and easily convert the existing subscriber list to the LISTSERV format by following these instructions:

1. Have the LISTSERV maintainer at your new site create the new list header and install it on the machine.
2. Create an add job as follows. The QUIET and IMPORT command words are optional; omit the square brackets if you use them. The "full name" field is optional as long as you use the IMPORT option; otherwise you must either specify "*" (for an anonymous subscription) or a full name consisting of at least two separate words.

   ```
   [QUIET] ADD listname DD=ddname [IMPORT] PW=yourpassword
   //ddname DD *
   userid1@host1.com [*|full name]
   userid2@host2.com [*|full name]
   ...more users, one per line...
   useridn@hostn.com [*|full name]
   /*
   ```

   For example (what fun:),

   ```
   ADD B5-L DD=MYDD IMPORT PW=BLAHBLAH
   //MYDD DD *
   SHERIDAN@BABYLON5.MIL John Sheridan
   IVANOVA@BABYLON5.MIL Susan Ivanova
   LONDO@CENTAURI.PRIME.GOV Londo Mollari
   GKAR@KAARI.NARN.GOV Citizen G'Kar
   /*
   ```

   If you are importing from an existing non-LISTSERV list, you should remove any lines from the original list that do not actually identify subscriber addresses. If you are converting to LISTSERV from ListProc, note that LISTSERV will not convert ListProc user options to their LISTSERV equivalents; you must take a line like

   ```
   user1@somehost.com POSTPONE NEWLIST NO user's name
   ```

   and reduce it at least to

   ```
   user1@somehost.com user's name
   ```

   Otherwise, the ListProc options will become part of the full name field.
3. Send the job to LISTSERV.

The IMPORT option implies a `QUIET ADD` (in other words, you do not need to specify `QUIET` if you use `IMPORT`) and otherwise vastly speeds up the ADD process by loosening syntax checking and omitting success messages. If you do not use the IMPORT option and do not specify `QUIET`, the users you bulk add will receive the normal SIGNUP message and/or WELCOME file as usual.

4.5 Deleting Subscribers from Lists in Bulk

If you have a large number of users to delete at one time, you can use a bulk delete syntax that is similar to the bulk ADD documented above. However please note that there is no "IMPORT"-type option for this feature, and as usual for the DELETE command you specify only the user's address in the data DD.

There is, however, a BRIEF option that can be specified which is good when you don't want a long list of "userid@host has been deleted from list xxxx" messages, one for each user deleted. Use of the BRIEF option tells LISTSERV to return only a count of the users that were deleted.

Once again you construct a LISTSERV JOB framework as follows and then send it to LISTSERV:

```
[QUIET] DELete listname DD=ddname [BRIEF] PW=yourpassword
//ddname DD *
userid1@host1.com
userid2@host2.com
...
useridn@hostn.com
/*
```

You will probably want to use the QUIET modifier when doing a bulk delete, in order to suppress the notification message to the users being deleted.

4.6 Using the QUIET Option with Commands

Prepending the command word "QUIET" before any LISTSERV command that you issue on behalf of a subscriber causes LISTSERV to suppress any notification to the subscriber of the changes you have made. This is particularly helpful when deleting subscribers whose accounts have expired and when setting subscribers with full mailboxes to NOMAIL, as it will help avoid another error message from the host when the notification message bounces. It is also helpful when adding subscriptions to the list that should not receive any welcome mail, such as redistribution lists and USENET newsgroups.

Examples of the usage of QUIET include:

```
QUIET ADD EXCEL-L comp.spreadsheets.excel@netnews.somenode.edu
QUIET DELETE EXCEL-L Bouncemeister@somenode.edu
```

4.7 Dealing with Bounced Mail

4.7.1 What is a bounce, and what can typically cause one?

A bounce is simply an undeliverable e-mail message. The term "bounce" is used to describe it because normally the system that discovers the delivery error "bounces" a copy of the message back to you with some sort of delivery error message. Sometimes these messages are easy to decipher – "No such user at foo.bar.com" – but uncomfortably often they are not that easy. Certain systems, as noted above, kindly format error notifications in a format that LISTSERV can understand, and if your list is configured for auto-deletion, these bounces will be the least of your worries – in fact, they will not be worrisome at all.

4.7.2 The Owner-Listname Address

If you receive bounces processed through LISTSERV you will note that they normally say something like the following at the top:

```
The enclosed message has been identified as a delivery error for the MYLIST-L
list because it was sent to 'owner-mylist-l@LISTSERV.EXAMPLE.COM'.
------------------------------ Message in error ------------------------------
```

What this message means is simply that LISTSERV has received mail sent to the `owner-`*`listname`* mailbox for your list. Mail sent to this special address is automatically forwarded by LISTSERV to the address(es) you have defined in the `Errors-To=` list header keyword. The little "error-header" shown above is prepended to the actual error message to let you know that this is an error for your list (rather than unceremoniously dumping it into your mailbox and making you wonder "why did I get this?", since some delivery errors aren't specific about what list or even what user they are for). So whenever you get mail saying it was found in the `owner-`*`listname`* mailbox, it means that it is an error that you need to deal with for the list referred to by *listname*.

If you find that you have users trying to contact you (as list owner) at the `owner-`*`listname`* address, you should tell them that the correct generic address for contacting the list owner(s) is *`listname`*`-request`, not `owner-`*`listname`*. Mail sent to the `listname-request` address will be sent to all non-quiet list owners and furthermore will be automatically responded to with the `REQACK1` mail template form from your *`listname`*`.MAILTPL` file (or its default from `DEFAULT.MAILTPL`; see Section 9 Creating and Editing Mail and Web Templates) while mail to `owner-`*`listname`* will not be responded to at all unless you do so explicitly. The nice thing about having people use the listname-request address is that you can store your list's FAQ (if you have one) in the `REQACK1` mail template form and probably not have to answer all of the questions you get as list owner--like "how do I subscribe?" and "how do I sign off?".

4.7.3 What to do about several types of bounces

Note: It is not the intent of (nor would it be reasonably possible for) this manual to document each and every kind of delivery error that you may ever see as a list owner. Unfortunately, and completely outside the control of anyone at L-Soft, new types of cryptic, difficult to understand, and totally misleading errors appear all the time. If you run across something not otherwise documented here, the best place to ask for help is the LSTOWN-L mailing list (see Section 10.6 If I can't find the answer, where do I turn?).

That being said, here are a few of the typical mail errors you will have to deal with as a list owner. Newer, so-called "Notary" format error codes are documented in RFC1893, which can be found at the WWW URL

http://www.ietf.org/rfc/rfc1893.txt?number=1893

- No such user at host, user unknown (or "notary" format error number 5.1.1)

  Most of the time, this is authoritative and indicates that the user's access has been curtailed for some reason (graduation, no longer employed, etc.). A quiet delete (syntax: "QUIET DELETE listname userid@host") is in order unless you have reason to believe that the message is not authoritative. Variations on this message include "Recipient unknown" and "Ambiguous address: userid". The latter doesn't really mean the user doesn't exist, but it's almost as bad, and many list owners choose to classify it as "no such user".

Microsoft Exchange servers send back the following message for an unknown user:

```
Joe@EXCHANGE.EXAMPLE.COM on Wed, 4 Mar 1998 13:31:50 -0600
    The recipient name is not recognized
    MSEXCH:IMS:Example Corp:EXAMPLE:EXCOMEXCH 0 (000C05A6)
Unknown Recipient
```

- No such host, host unknown (or "notary" format error number 5.1.2)

  This is sometimes authoritative and sometimes not. If a host goes down or a gateway fails, often this message is returned by an intermediate host or gateway. If the user is bouncing a great deal of mail from a high-volume list, it is probably best to set the user to `NOMAIL` (syntax: "`SET` *`listname`* `NOMAIL FOR` *`userid@host`*") rather than to summarily delete him. This way, the error messages stop, the user is sent an automatic message telling him his personal options have been changed by the list owner, and the user doesn't have to go through the subscription process again if the problem has been solved in the interim.

  The problem is that some hosts go down on a regular basis and this error makes it impossible to tell if the host in question is gone forever or gone until the local sysadmin reboots his machine. After a while, you will begin to recognize the transient hosts and may elect to ignore them. If you choose to set the user to NOMAIL, you should send a message to the user just in case the system has come back up, and you should keep some sort of record of the users you've set this way so you can follow up later with another message.

- No MX or A records for host (or "notary" format error 5.4.4)

  Similar to "no such host". This means that the Domain Name Service (DNS) can't find any routing information for *host* but has found at least one reference to it. This generally indicates a DNS configuration error and may or may not be transient.

- Transient failure: cannot deliver for n days

  A host is experiencing periodic failures, and the gateway or intermediate host has not been able to deliver the message for n days. Usually the host will attempt redelivery. Usually there is nothing wrong with the user address, so it is a list owner decision as to whether it is worth waiting out the transient failure or going ahead and setting the user to NOMAIL. Unfortunately, by the time you get this message, the failure is n days in the past, the "transient failure" is very probably over, and you are likely to receive further error messages for n more days until the intermediate host's queue is exhausted.

- Mailbox full, quota exceeded (or "notary" format error number 4.2.2)

  This usually happens on systems with tiny user mailbox space, but it can happen on any system if a user subscribes to too many lists or goes on an extended vacation without setting lists to `NOMAIL`. The best solution is to set the user to NOMAIL yourself. Variations on this message include VMS's "file extend failed writing to [disk.user]MAIL.MAI".

- Unknown mailer error x

  This is a favorite Unix sendmail configuration bounce. NOMAIL or DELETE, according to your preference. Since it is a configuration problem, it is usually transient. One system sent the following under an "unknown mailer error 1" heading:

```
binmail: /usr/spool/mail/userid: too big to accept new
messages.
        It's size is 205735 bytes which is 935 bytes over
quota.
mail: cannot open dead.letter
554 <userid@node>... unknown mailer error 1
```

  This is apparently a "mailbox full" error, as "userid's" mail spool is "over quota". It is also possible that it means your message would put the user over quota by 935 bytes. Either way, there isn't enough space in the user's mailbox to store your message (in this case, it was a daily digest). Note that "unknown mailer error x" does not always mean the user's mailbox is full – what it always means is that sendmail cannot identify the cause of the error.

- Bounced, but sent successfully

  This error comes from cc:Mail systems and is extremely misleading. It claims that the mail bounced to one address, but was sent successfully to another.

```
While talking to smtp.ccabc.com:
>> DATA
<< 554 I/O error to mailbox
554 MILLERT@smtp.ccabc.com... Service unavailable
----- Recipients of this delivery -----
Bounced, cannot deliver:
   MILLERT@smtp.ccabc.com
Sent successfully:
   <MILLERT@ABC.COM>
```

  What this means (assuming that the mail hasn't gone through a redistribution list or a mirror site) is that you have a user MILLERT@ABC.COM on your list, and the server accepted the mail for that address successfully. However, that address actually maps to a different internal address (in this case MILLERT@smtp.ccabc.com) and for whatever reason, the server can't forward the mail on. This is the equivalent of a "user unknown" error for MILLERT@ABC.COM.

- Too many hops (or "notary" format error number 5.4.6)

  Means that the message has transited through too many intermediate mail systems (1 transit = 1 hop). Most of the time this will be due to a temporary looping condition on the user's end (despite the "permanent" 5.4.6 error). For instance, the following Internet routing headers indicate a loop between three different mail machines (starting from the bottom and working back to the top):

```
Received: from un1.sample.com (root@un1.sample.com [200.9.212.3])
  by un7.sample.com (8.8.7/8.8.7) with ESMTP id RAA22765
  for <user@example.com.ar>; Wed, 4 Mar 1998 17:17:10 -0300
Received: from ul1.sample.com (root@ul1.sample.com [200.0.224.2])
```

```
  by un1.sample.com (8.8.7/8.8.7) with ESMTP id RAA27352
  for <user@example.com.ar>; Wed, 4 Mar 1998 17:16:00 -0300
Received: from un7.sample.com (un7.sample.com [200.9.212.4])
  by ul1.sample.com (8.8.8/8.8.8) with ESMTP id RAA13496
  for <user@example.com.ar>; Wed, 4 Mar 1998 17:15:40 -0300 (GMT-3)
Received: from un1.sample.com (root@un1.sample.com [200.9.212.3])
  by un7.sample.com (8.8.7/8.8.7) with ESMTP id RAA22034
  for <user@example.com.ar>; Wed, 4 Mar 1998 17:15:27 -0300
Received: from grape.EASE.LSOFT.COM (grape.ease.lsoft.com [206.241.12.34])
  by un1.sample.com (8.8.7/8.8.7) with ESMTP id RAA25235
  for <user@example.com.ar>; Wed, 4 Mar 1998 17:08:43 -0300
```

The problem here appears to be that the mailers at sample.com are MX (mail exchanger) sites for example.com.ar, but that they can't decide which one of them should hold onto the mail until it can be delivered to example.com.ar. So it looped through 7 iterations until the un7 machine finally decided that enough was enough (including the passage through LISTSERV it had taken 26 hops and un7 was set to accept a maximum of 25 hops) and generated an error.

You may occasionally see a "too many hops" message that isn't a loop. Usually the non-looping variant is due to the recipient being many hops away from the mail originator and the maximum hop count being set too low on the recipient's machine. Many older sendmail installations, for instance, will accept only 10-15 hops before they reject the message. With today's Internet a setting of 30-40 is probably much more reasonable.

A particularly annoying error you may have to deal with (unlikely these days as this kind of addressing is becoming quite obsolete) comes from Banyan networks and is of the form:

```
LLONG@StarShip@Dora:  Mailbox full
```

Obviously this is not a properly-configured address (at least, not as far as LISTSERV is concerned), and if you SCAN or QUERY the list for it, you will get a negative response. If, however, you SCAN the list for LLONG, you may find a user such as:

```
> scan test-l LLONG
Bill Smith <LLONG%StarShip%Dora@BOONDOCK.TERTIUS.COM>
SCAN: 1 match.
```

This user can now be set to `NOMAIL` and the errors will stop after the Banyan host has emptied its queue. If you do not find the user on the first `SCAN`, try using another part of the address as your search text.

Notes: A user may have his mail forwarded from the account that is actually subscribed to an account on another machine where he reads his mail. If the second machine is bouncing the mail, it may not be immediately apparent from the bounce messages that the mail is actually being forwarded. It is important to check for variants of the userid in the bounce message as it may be related to the userid that is actually subscribed to the list.

There are many forms of error messages. Many mail systems do not conform to Internet "standards" (some of them even return non-English error messages!) and LISTSERV's auto-deletion feature will not always catch their bounces.

4.7.4 Redistribution and Forwarding

Perhaps the worst type of bounce is one that comes from a user who is "hiding" behind an account that redistributes mail (a "redistribution list"), or a user whose Internet address has changed slightly but who is still subscribed to your list under his original address.

Redistribution lists typically (but not always) take some form of your list's name (such as "xxxxx-L-REDIST@foo.bar.com"), and thus their subscriptions tend to be easy to find. What is difficult is that you have no way of knowing which users (or how many users) are hidden behind this interface, nor any way of knowing what their userids are.

Forwarded accounts generally fall into one of two categories – those where the user has forwarded his own mail from one account to another rather than changing his subscription, and those where the user's system name has changed and the old address is still valid but is forwarding mail to the new address without the user being aware of it.

Let's say that suddenly you are bombarded with delivery errors for someuser@baz.net. Your immediate reaction is to set this person to NOMAIL or (in some cases) to delete him/her altogether. You therefore send `set xxxxx-L nomail for someuser@baz.net` to LISTSERV. LISTSERV responds: "No subscription for someuser@baz.net in list XXXXX-L."

In a best-case scenario, you can query the list for *@*.baz.net and find either a user like someuser@glork.baz.net (the address has changed and the local sysadmins didn't inform the user) or a redistribution-list account like xxxxx-L@baz.net. These are easily-fixed redistribution bounces. In the first case, you delete the user and let him or her resubscribe. In the second case, you can try sending a message to owner-xxxxx-l@baz.net with a cc: to postmaster@baz.net and inform them of the problem. If it persists, you could send a further message informing them that you are suspending the redistribution list's subscription until such time as they tell you the problem on their end is fixed, and simply set xxxxx-l@baz.net to NOMAIL.

The worst-case scenario is as follows: baz.net may be bouncing the mail to you, but there may not be a single subscription for baz.net in your list. Here's where you have to do some careful sleuthing. First, run a wildcard query such as `QUERY xxxxx-l FOR *@*baz* or QUERY xxxxx-l FOR *baz*@*`. The former will find users at baz.com, for instance, where baz.net is a synonym for baz.com. The latter query may seem somewhat strange, but it's possible that the mail is being routed through a gateway and the actual subscription is for xxxxx-l%baz.net@cunyvm.cuny.edu or similar.

4.7.5 "Sender:", "From:", or "Reply-To:" Fields in Body Causes Bounce

Sometimes you will receive bounces from LISTSERV with a error header like this:

```
The enclosed message, found in the VISBAS-L mailbox and shown under the spool ID
19630445 in the system log, has been identified as a possible delivery error
notice for the following reason: "Sender:", "From:" or "Reply-To:" field point-
ing to the list has been found in mail body.
```

Sometimes this is a legitimate bounce from a mail system that isn't compliant with Internet standards for mail, and the reason the "Sender:", "From:", and/or "Reply-To:" headers are significant is because if this mail were to be allowed through to the list it could very possibly start a loop with the non-compliant mail server. Normally this is a good thing; however, an unfortunate side-effect of the loop-checking code that catches this kind of bounce means that LISTSERV may treat replies to list mail from some mail clients as if they are delivery errors. LISTSERV has no way to know the difference between a bounce and a legitimate message that just happens to have unquoted included headers so it takes the conservative route and bounces it to the list owner as a "possible" delivery error. This way the list owner can (if he or she wants to) return the message to the user in question and ask them to either quote out or delete the headers from their replies.

In any case this is specifically known to be a problem with Pegasus Mail and some incarnations of the Microsoft Exchange Client, but there are probably other mail programs that do the same thing. The problem arises when the user's mail client includes the "Sender:", "From:", or "Reply-To:" fields that point back to the list itself (for instance, the above error was for VISBAS-L@PEACH.EASE.LSOFT.COM) in the quoted material and doesn't quote them correctly--that is to say, without a quoting character, or with a space between the quoting character and the included text. For instance, a reply from Pegasus with quoted material might include the following lines:

```
User's reply,...

> Date:          Tue, 31 Dec 1996 17:00:00 -0700
> Reply-to:     Visual Basic List <VISBAS-L@PEACH.EASE.LSOFT.COM>
> From:          Joe User <JOE@UNIX.FOO.COM>
> Subject:       Re: 97 Style ToolBars
> To:            VISBAS-L@PEACH.EASE.LSOFT.COM
```

The quoted lines below the user's reply would trigger LISTSERV's loop detection functions because there is a space between the ">" character and the "Reply-To:" and the "From:" headers.

The correct, netiquette-approved method of quoting these headers is to delete them entirely from the body of your message. Quoting is generally done for reasons of context and message headers are not needed for context. (Pegasus actually lets you toggle this on and off via the "Advanced options for replies" dialog. Other clients don't seem to have this function.) Note that Eudora quotes messages with no space between the ">" character and the quoted text, so this is not an issue with Eudora.

If necessary, subscribers using Pegasus can change the quoting character (at least they can in some versions of Pegasus; the author has not tested current versions) by editing their copy of PMAIL.INI and changing the value in

```
[General]
...
Commenting string                        = >
```

Normally this variable contains "> ", that is, ">" followed by a space character. If you remove the space, Pegasus quotes "properly" and this is no longer a problem. Other mail clients may or may not have similar configuration settings. As always, users should consult the documentation for their mail program before making changes to its configuration.

(Also, see Section 10.2 Loop-Checking Can Cause Occasional Problems with Quoted Replies).

4.7.6 LMail Error Codes

LMail is an L-Soft mailer product for VM mainframes. When it receives error mail from remote hosts it translates the error into a standard format recognized by LISTSERV so that LISTSERV can take action as necessary. From time to time you may see such errors in your mailbox; they look like this:

```
-------------------------------------------------------------------------
Date:     Fri, 8 Jan 2000 20:04:50 +0100
Reply-To: Postmaster@SEARN.SUNET.SE
From:     RFC822 mailer (LMail release 1.2d/1.8d) <MAILER@SEARN.EXAMPLE.SE>
Subject:  Undelivered mail
To:       ERIC@SEARN.EXAMPLE.SE
cc:       Postmaster@SEARN.SUNET.SE
X-Report-Type: Nondelivery; boundary="> Error description:"
An error was detected while processing the enclosed message. A list of the
affected recipients follows. This list is in a special format that allows
software like LISTSERV to automatically take action on incorrect addresses; you
can safely ignore the numeric codes.
--> Error description:
Error-For:  JACK@SEARN.SUNET.SE
Alias:      JACK@SEARN.BITNET
Error-Code: 3
Error-Text: No such local user.
Error-For:  JOE@SEARN.SUNET.SE
Alias:      JOE@SEARN.BITNET
Error-Code: 3
Error-Text: No such local user.
Error-End:  Two errors reported.
------------------------- Rejected message (5 lines) -------------------------
Date:         Fri, 8 Jan 1993 20:04:47 +0100
From:         Eric Thomas <ERIC@SEARN.BITNET>
To:           JACK@SEARN.BITNET, JOE@SEARN.BITNET
Testing.
```

The LMail codes stand for the following:

- 0 is used for all the weird errors that can't easily be classified, and LISTSERV takes no action on these codes by definition. This includes errors such as "invalid device name" or "device full" which have meaning only for the postmaster of the host that bounced the message.
- 1 means "don't know that/don't know how to get there" (as opposed to "can't get there right now"), which is used when the host can't be found (e.g., "host unknown").
- 2 means "configuration error". This means that LMail has detected an error in its routing tables which prevents it from delivering the mail. It does not necessarily mean that the address is bad.
- 3 is "no such local user".
- 4 is "not allowed to mail to this user".

  The difference between 3 and 4 is that a 3 indicates there is no way to successfully send mail to the user, whereas 4 indicates the user cannot receive mail from the address your message came from. LMail uses code 4 when a local LMail user directs it to reject all mail coming from mailing lists, but to let private mail through. Typically you will not see very many 4 codes.
- 5 means "mailbox full", "quota exceeded", and so on.

LISTSERV itself takes action on error codes 1, 3, and 4, and forwards anything else to the list owner.

4.8 Delivery Error Handling Features

LISTSERV supports several levels of automatic deletion based on error messages passed back to it in LMail format by certain remote systems. While auto-delete will not solve all of your bouncing mail problems, it has the potential to take care of most "permanent" errors (including "no such user" and "no such host"). However, note that auto-delete ignores "temporary" errors such as "host unreachable for 3 days", "system error", "disk quota exceeded", and so forth, such that users whose accounts generate "temporary" errors are not summarily deleted from the list.

By default, LISTSERV mailing lists generate a report which lets the list owner know what userids are causing problems, rather than deleting users at the first error LISTSERV understands. If the Delay() and Max() parameters are set to non-zero values for a list coded "`Auto-Delete= Yes`", LISTSERV will not take immediate action on mail delivery errors. You will receive an "auto-deletion monitoring report" daily to show you which subscribers are bouncing mail, what the error is, when it started, when the last error arrived, and how many errors have been received for the subscriber in total. By default, LISTSERV will wait 4 days (or for a maximum of 100 error messages per individual user) before deleting a subscriber.

If you code "`Delay(0)`", LISTSERV will not wait to take action, but will delete the subscriber at the first error LISTSERV understands. Note carefully that LISTSERV will not generate a daily error monitoring report when Delay(0) is used.

The default value is "`Auto-Delete= Yes,Semi-Auto,Delay(4),Max(100)`" for lists coded "`Validate= No`" and "`Auto-Delete= No`" for all other lists.

Under LISTSERV Lite, `Auto-Delete=` is available but deletes on the first bounce (e.g., "`Delay(0),Max(1)`") regardless of the `Delay()` and `Max()` settings.

Implementation of the "`Auto-Delete=`" keyword is discussed in detail in the List Keyword Reference document under "Error Handling Keywords."

4.8.1 Auto-Delete Considerations for Holidays

Making a big increase to the DELAY threshold to provide more leniency during a holiday may not be a good idea. While it will indeed disable the monitor for the duration of the holiday, switching back to the normal threshold when you return will cause the monitor to delete all the users that had been bouncing during the holidays. In general, you should avoid making temporary changes to the DELAY threshold, because it takes the monitor a while to adapt to the new settings.

The best way to relax the rules during a long holiday is to leave the DELAY threshold unchanged but switch the monitor to passive mode ("`Auto-Delete= Yes,Manual`"). Nobody will be deleted over the holidays, but the monitor's cycle will not be perturbed. When you return, you should wait about a week before switching back to automatic mode. This is because, after a long holiday such as Christmas, it usually takes about 2 working days for system administrators to solve all problems. In some cases, the problems will have caused bounces to remain undelivered. So, by fixing the problems, the system administrators may actually send a flood of new bounces corresponding to problems that have now been solved. Unfortunately, since the monitor only receives NON-delivery reports, it has no way to know that these problems have in fact been solved. As a rule of thumb, you will note that your daily delivery error reports are much longer than usual over the vacation. When you return, you should wait until they are back to their normal size before switching back to automatic mode.

4.9 Address Probing

This functionality is not available in LISTSERV Lite.

There are two levels of automatic address probing available in LISTSERV.

4.9.1 Active Address Probing

This functionality is not available in LISTSERV Lite.

Active address probing is available for two reasons: first, to enhance subscription renewal functionality so that no "`CONFIRM` *`listname`*" response is required from subscribers in order to stay subscribed, and second, to enhance the ability of the auto-deletion feature to handle bounces that can't be parsed into something LISTSERV can recognize.

"`Renewal= ...,Probe`" activates this enhanced bounce processing feature, whereby subscribers are probed at subscription renewal time using the `PROBE1` mail template. The "Probe" option makes subscription renewal passive rather than reactive; no "`CONFIRM` *`listname`*" response is needed from the user. In fact, the desired response from the user is to discard the message and do nothing, making the process very simple. LISTSERV also probes addresses that return mail delivery errors, and probe messages have a special signature in the return address that allows LISTSERV to uniquely identify any bouncing address, without having to understand the bounce itself.

If the probe bounces, LISTSERV first sends the PROBE2 template with a copy of the bounce, to show the user (if the account actually works in spite of the bounce) what garbage his mail system is sending people. LISTSERV then schedules a new probe for the next day, or deletes the user immediately, depending on the auto-delete policy. Every failure triggers a new daily probe until the user gets deleted or the problem gets fixed. The user can also save his subscription manually by sending a `CONFIRM` *`listname`* command (this is explained in `PROBE2`). This doesn't solve the underlying problem, so eventually the user should get tired of confirming in an emergency and notify his system administrators that the system is generating bounces saying (for instance) "Your message was registered at the MORONICUS mail gateway. Press F1 for more information" that cause the problem in the first place.

When used together with "`Auto-Delete= ...,Full-Auto`", the probe option deletes all delivery errors from bounced probes, even if LISTSERV can't understand the error. This means the list owner never ever has to see a single bounce from a probed address. The list, however, is kept clean because bad addresses are always detected. In fact, the biggest risk is that the users of the MORONICUS mail gateway will be deleted even though they do get their mail.

This being said, note carefully that all errors bounced by non-compliant mail hosts to the wrong address, and non-probe errors that are sent to the owner-listname address but are not in a format that LISTSERV can parse, will still show up in your error mailbox. If the bounce goes to the wrong address, LISTSERV never sees it and cannot probe it. If the error goes to the correct address (`owner-`*`listname`*) but isn't specific enough for LISTSERV to understand, while LISTSERV will be able to see it, it still won't be able to probe it. Finally, in some cases where the error is so vague (or constructed in a complicated manner that defies LISTSERV's attempts to parse it) the error may be passed to the LISTSERV postmaster, instead of to the list owner, for disposition, even if it was correctly returned to the owner-listname address.

Yet even with these restrictions, the author saw an error queue of 1300 errors/day shrink to under 50 errors/day by applying the ",Probe" parameter to seven high-volume lists, which in his opinion was much more acceptable.

4.9.2 Passive Address Probing

This functionality is not available in LISTSERV Lite.

In effect, passive probing is very similar to active probing, but it is not tied to subscription renewal. Passive probing is enabled by default for small lists (e.g., <1K subscribers) but not for large ones due to the fact that passive probing does cost additional resources and large lists are often used for one-shot mailings where it is simply not effective to use those resources to probe addresses that will not be used a second time.

Passive probing operates by turning a certain percentage of your regular list messages into transparent probes that look like a normal message but also double as a probe, rather than sending out the explicit PROBE1 template as in active probing. You enable (or tune) passive probing by adding a "`,Probe(xx)`" parameter to the `Auto-Delete=` keyword setting. For instance,

```
Auto-Delete= Yes,Full-Auto,Probe(30)
```

where "30" is the number of days to wait between probes for any given user (the default is Probe(30). Subscribers with working mail systems will not see any difference, subscribers with flaky mail systems will occasionally receive a message showing that their mail bounced and saying that they should report the problem to their ISP, and of course plain bad addresses will go away.

In order to disable passive probing you set the probe parameter to 0, i.e.,

```
Auto-Delete= Yes,Full-Auto,Probe(0)
```

If you have users who for whatever reason should not be probed, then you can deactivate passive probing (and any other renewal you have set for the list) with the SET userid@host NORENEW command.

4.10 Subscription Confirmation

For lists coded "`Subscription= Open`", you can require confirmation on all new subscription requests, thus ensuring that LISTSERV has a clear mailing path back to the subscriber. In the past, a user could send a subscription for an open subscription list to LISTSERV, which upon acceptance would immediately start sending the user list mail. If the user was located behind a "broken" or one-way gateway, this produced immediate bounced mail until the list owner noticed and deleted the subscription. Note that requiring confirmation at the time of subscription does not guarantee that the clear mailing path will continue to exist permanently.

"`Subscription= Open,Confirm`" causes LISTSERV to send a Command Confirmation Request to the potential subscriber before actually adding the user to the list. The subscriber is requested to reply to the request by sending a validation "cookie" back to LISTSERV (this "cookie" being the hexidecimal number pulled from the subject line).

The Command Confirmation Request, while straightforward, has the potential to cause confusion if users do not read carefully the instructions that make up the request. LISTSERV expects confirmation codes to be sent in a specific way because some mail gateways add lines to the header of the message that LISTSERV doesn't understand. If a user forwards the request back to LISTSERV, or creates a new mail message to send the 'cookie' back, it usually will not work correctly. The sequence should thus be as follows:

1. SEND the subscription request to LISTSERV.
2. REPLY to the confirmation request ('ok')
3. SEND the confirmation code (if necessary) ('ok 23CBD8', for example)
4. Send mail to the list owner (not the list) if the subscription request fails after step 3.

Note: If a list owner adds a user manually, the confirmation process is bypassed.

4.11 Subscription Renewal

You can code subscription renewal into your lists. This is one method to keep lists "pruned down" and avoid having large lists that are actually distributing mail to only a fraction of the users. For instance, you may have a number of subscriptions set to NOMAIL for one reason or another. NOMAIL user(a) may have forgotten that he has a subscription; user(b) may have set NOMAIL instead of unsubscribing; user(c) may no longer exist because she graduated or no longer works for the service provider; you may have set user(d) to NOMAIL because of recurrent mail delivery errors. Requiring a periodic confirmation of subscriptions is therefore a reasonable course of action for large, non-private lists.

Subscription renewal is disabled by default. If you do not want subscription renewal, or if you wish to turn it off, simply do not include a "Renewal=" keyword in your list header.

To add subscription renewal, you add the following keyword to the header of your list:

```
* Renewal= interval
```

– or –

```
* Renewal= interval,Delay(number)
```

– or –

```
* Renewal= interval,Delay(number),Probe
```

where interval is a period of time such as Weekly, Yearly, 6-monthly, or something similar, and Delay(number) is an integer corresponding to how many days LISTSERV will wait for the renewal confirmation to arrive. (See "Renewal=" in the List Keyword Reference document for more information on renewal and delay periods; see Section 4.9 Address Probing for more information on the "Probe" parameter. You can have multiple interval parameters; again, see the entry for "Renewal=" in the List Keyword Reference document for details).

The confirmation request mailing asks the subscriber to send the command CONFIRM listname back to LISTSERV. If the subscriber does not do so within a certain length of time, LISTSERV automatically deletes the subscription. The default delay time is 7 days. If you wish to use the default delay time, it is not necessary to code ",Delay(7)" into your Renewal parameters.

Note: You may wish to increase the delay time to accommodate users whose subscriptions expire over holidays (such as the Christmas/New Year's week) in order to avoid accidental deletions. Also, be aware that confused subscribers can and will send the CONFIRM command back to the list, rather than to LISTSERV. LISTSERV's default filter will catch these commands and forward them to the userid(s) defined by the "Errors-To=" keyword.

It is possible to waive subscription renewal for certain users (such as list owners, editors, redistribution lists, etc.). In order to do this, simply issue the command

[QUIET] SET listname NORENEW FOR net-address

to LISTSERV. It is most advisable to do this in the case of redistribution lists, as they broadcast the renewal notice to their users, who a) cannot renew the subscription and b) become very confused when they see the notice, often sending "what does this mean?" mail to the list.

You can also issue the CONFIRM command for a subscriber:

[QUIET] CONFIRM listname FOR net-address

Note: "Active" users of the list (that is, people who post regularly to the list) will never be required to renew their subscriptions, nor (if subscription "probing" is enabled) will they ever be sent the passive subscription probe. LISTSERV presumes that such users have valid addresses and does not require a renewal confirmation from them.

4.12 Using the SERVE Command When a User is "Served Out"

If a user sends more than 50 consecutive invalid commands to LISTSERV, LISTSERV automatically serves that user off so that further commands from that user will be ignored. Should a user become served off in this fashion, it is possible for the list owner or any other user to issue a SERVE `net-address` command to restore that user's access. As with all other LISTSERV commands, the SERVE command is sent to LISTSERV.

While served off, the user will be unable to set personal options and will be unable to subscribe or unsubscribe to lists on that server. Note that a user will likely be served off of one particular LISTSERV site but not others, and also that the user may not even realize that he has been served off (in spite of the fact that LISTSERV sends notification to the user to that effect).

Note: The SERVE command will not restore service to users who have been manually served off by the LISTSERV maintainer.

Section 5 Setting Subscription Options for Subscribers

5.1 Reviewing Current Subscription Options with QUERY

The syntax is similar to the subscriber's method of reviewing his options, except that the list owner must specify for whom the options are being checked.

```
Query listname FOR userid@host
```

It is possible to use wildcards in the subscriber address. For instance,

```
Q LSTOWN-L FOR J*@UBVM*
```

will return option listings for subscribers such as JIMJ@UBVM, JOHN@UBVMS.CC.BUFFALO.EDU, etc. This can be handy if you are searching the list for someone whose subscription address differs from the address you are given in an error report (see the examples, above, in "Dealing with bounced mail").

Using the `WITH` qualifier, you can also query a list for users who have a specific option set. For instance, you might want to know which users are set to `NOMAIL`. Send the command

```
Q listname WITH NOMAIL FOR *@*
```

and LISTSERV will return a list of those users. It is also possible to query a list for multiple options:

```
Q listname with DIGEST CONCEAL FOR *@*
```

will return a list of those subscribers who have set their subscription to `DIGEST` and also to `CONCEAL`.

You can also query users by the list topics they are subscribed to. For instance:

```
Q listname WITH TOPICS: ADMIN FORUM FOR *@*
```

shows all members subscribed to both the ADMIN and FORUM topics.

```
Q listname WITH TOPICS: -ADMIN FOR *@*
```

shows all members who are not subscribed to the ADMIN topic.

```
Q listname WITH TOPICS: ADMIN -TEST FOR *@*
```

shows all members who are subscribed to the `ADMIN` topic but not to the `TEST` topic.

5.2 Setting Personal Subscription Options for Subscribers

Again, the syntax is similar to the subscriber's method.

```
SET listname option FOR userid@host
```

– or –

```
QUIET SET listname option FOR userid@host
```

5.3 Subscription Options

5.3.1 Mail/NOMail

Setting this option to `Mail` indicates that the subscriber will receive mail from the list. `NOMail` is the complementary command that stops mail but leaves the user subscribed to the list. (`NOMail` is often a good compromise for users who are leaving the office for vacation or on extended business trips, and who don't want a full mailbox on their return.) The format of the messages received is controlled by the `DIGEST/INDEX/NODIGEST/NOINDEX` options (see the following sections).

5.3.2 DIGest/NODIGest

Causes the subscriber to receive one posting per digest cycle (typically daily) rather than individual messages as they are processed by LISTSERV.

The `MAIL/NOMAIL` option is isolated from `DIGEST/INDEX`. The `MAIL/NOMAIL` option controls whether messages should be delivered, and the `DIGEST/INDEX/NODIGEST/NOINDEX` option controls the format in which messages should be delivered. Thus, switching to `NOMAIL` and back to `MAIL` now preserves the digest/index/normal delivery setting. To provide as much compatibility with the old syntax as possible, the four options operate as follows:

- `DIGEST` – Enable digest delivery mode (which negates `INDEX`), enable mail delivery.
- `INDEX` – Enable index delivery mode (which negates `DIGEST`), enable mail delivery.
- `NOMAIL` – Disable mail delivery.
- `MAIL` – Restore mail delivery. Note that If mail delivery was already enabled, the `MAIL` option negates `INDEX/DIGEST`. Thus, a user going from `NOMAIL` to `MAIL` will keep his previous delivery options, whereas a user going from `DIGEST` or `INDEX` to `MAIL` will in fact deactivate index/digest mode.

To revert from digest/index subscription mode to normal delivery, you can use either the `MAIL` option as before, or the `NODIGEST/NOINDEX` option.

The command `SET` *`listname`* `MAIL` sent by a user who is set to `DIGEST` but not also set to NOMAIL will cause the user to be set to `NODIGEST` (the behavior is identical for users set to `INDEX` but not to `NOMAIL`). `SET` *`listname`* `MAIL` sent by users set to `DIGEST/NOMAIL` or `INDEX/NOMAIL` will simply remove the `NOMAIL` setting and leave the user set to `DIGEST` or `INDEX` as the case may be.

Note: In extreme cases, subscribers using the `DIGEST` option may receive more than one digest per cycle if the digest limit is reached before the end of the cycle.

5.3.3 MIME/NOMIME

Toggles MIME functions on and off. Currently this is only useful if the user has a mail client that supports MIME digests. Users who send their `SUBSCRIBE` command using a MIME-compliant agent will have this option set automatically unless "`Default-Options= NOMIME`" is specified for the list.

In future versions, this toggle may control other MIME functions.

5.3.4 INDex/NOINDex

Causes the subscriber to receive one posting per digest cycle containing only an index of subject topics for all messages during that cycle. See the section on `DIGEST` (above) for further information.

5.3.5 ACK/NOACK/MSGack

These three command words control the level of acknowledgment the subscriber receives when posting to the list. `ACK` causes LISTSERV to send a short confirmation message to the subscriber when the post has been received and distributed. `NOACK` disables the confirmation feature for the subscriber (although BITNET subscribers will receive a short interactive message on their terminal). For BITNET subscribers, `MSGack` provides the same information as `ACK` via interactive messages.

5.3.6 Options for Mail Headers of Incoming Postings

By specifying one of the following command words, the subscriber can control the amount of mail header information prepended to list mail. The syntax is `SET` *`listname headertype`*, where *`headertype`* is one of the following:

- `FULLhdr` – "Full" mail headers (default) (formerly FULLBSMTP)
- `SHORThdr` – Short headers (formerly SHORTBSMTP)
- `IETFhdr` – Internet-style headers
- `DUALhdr` – Dual headers, useful with PC or Mac mail programs
- `FULL822` – "Full" RFC822 mail headers
- `SHORT822` – Short RFC822 mail headers
- `SUBJecthdr` – "Full" RFC822 mail headers (like the default), except that LISTSERV adds the list's default subject tag to the subject line of mail coming from the list. To turn this off, simply set another mail header option.

Note: Do not use `FULL822` or `SHORT822` unless debugging specific problems or unless directed by L-Soft. Use of these options can seriously slow performance as they force LISTSERV to generate a separate "envelope" for each user so set. `FULL822` and `SHORT822` are obsolete but remain available for compatibility with certain older BITNET mailers still in use.

Quite a few non-technical users are relying on non-RFC822 user interfaces for reading their mail. Quite often these user interfaces are user-friendly, quality implementations of a proprietary mail protocol which the users are proficient with, but which happens not to lend itself to bidirectional mapping to RFC822. The users may have a good reason for using this particular program, and they complain that it is not always clear what list the postings come from, or who posted them. Other users have very primitive mail programs which do not preserve the original RFC822 header and may not even have a "message subject" concept. The user knows which list the message came from, but not who posted it, making private replies impossible.

The `DUALHDR` (minimum abbreviation: `DUAL`) header option is provided to help solve this problem. Dual headers are regular short (`SHORThdr`) headers followed by a second header inside the message body. This second header shows what list the message is coming from ('Sender:'), the name and address of the person who posted it ('Poster:'), the poster's organization, if present, and the message subject. The date is not shown because even the most primitive mail programs appear to supply a usable message date.

The `SUBJECTHDR` (minimum abbreviation: `SUBJ`) header option is provided for users who want to see a "tag" in the subject line of their incoming list mail that indicates where the mail is coming from (e.g., to activate a filter in their mail program to drop the message into a specified notebook). If you have `SHORT` headers (or any other header option) set, setting your option to `SUBJecthdr` will automatically change you to `FULLHdr`, as subject tags require full headers. Also, subject tags are not generated for messages sent without a RFC822 "Subject:" header.

Generally, users will be well-served by the `FULL` header option, which is the default.

Documented Restriction: The use of the `SHORTHDR` or `DUALHDR` options will break messages that depend on MIME encoding, because these options strip the RFC822 headers that identify the message as a MIME message. `SHORTHDR` and `DUALHDR` were designed for the non-MIME mail clients which prevailed in LISTSERV's early history. As most mail clients today support MIME, the use of these options is now deprecated.

5.3.7 Putting the List Name into the Subject: Field

To do this, use the `SUBJecthdr` personal option as explained in the previous section. To set this option by default for new subscribers, include it in the `Default-Options=` keyword setting for your list (see Section 5.4 Setting Original Default Options with the Default-Options= Keyword). To set it for existing subscribers, use the `SET` command.

5.3.8 CONCEAL/NOCONCEAL

Occasionally, a subscriber may not want his presence to be known to someone else making a casual `REView` of the list. Subscribers may choose to "hide" their subscription from the `REView` command by using the `CONCEAL` command. Conversely, a subscriber may choose to remove this restriction by issuing the `NOCONCEAL` command.

Note: The list owner can always obtain a list of all subscribers, both concealed and unconcealed, by issuing the `GET listname (NOLock)` command, or by issuing a `QUERY` *`listname`* `WITH CONCEAL FOR *@*` command.

5.3.9 REPro/NOREPro

This option controls whether or not the subscriber will get a copy of his or her own posts back from the list after they are processed. Generally, if a subscriber's mail program is configured to file copies of the subscriber's outgoing mail, or if the subscriber has one of the acknowledgment options (`ACK/MSGack`) enabled, this option should be set to `NOREPro`. If, on the other hand, the subscriber is set to `NOACK` and doesn't keep a copy of outgoing mail, this option should probably be set to `REPro`.

5.3.10 TOPICS

Topics are not available in LISTSERV Lite.

If list topics are enabled, this option allows the subscriber to specify which topics he or she will receive. The syntax of a SET TOPICS statement is significantly different from that of the other options. See Section 6.7 Using List Topics for more information on this syntax.

5.3.11 POST/NOPOST

This option may be set only by list owners or the LISTSERV maintainer. It is not available in LISTSERV Lite.

A subscriber set to `NOPOST` may not post to the list. `NOPOST` gives the individual list owner the ability to serve out abusive or obnoxious posters without having to add such users to the list's "`Filter=`" setting. Subscribers set to `NOPOST` will still receive list mail – they just won't be able to post mail to the list.

The list owner or LISTSERV maintainer may issue the

```
SET listname POST FOR userid@host
```

command to reverse a previously-set `NOPOST`.

Note: For peered lists, `NOPOST` must be set globally or a user can bypass the setting by simply posting to another peer. Thus, you must add the user manually to the other peers and then set the user to `NOMAIL` as well as `NOPOST` on the peers.

Setting `NOPOST` for a user cancels any previous `EDITOR` or `REVIEW` setting for that user.

Note: List editors who are set to `NOPOST` will be able to approve messages but will then be told they cannot post to the list. The `NOPOST` subscriber option does override any `Editor=` or `Moderator=` definition in the list header, so be sure that your editors and moderators are set to `POST`.

5.3.12 EDITOR/NOEDITOR

This option may be set only by list owners or the LISTSERV maintainer, and is effective only on moderated lists. It is not available in LISTSERV Lite.

A subscriber set to `EDITOR` on an edited/moderated list may post directly to the list without a moderator's intervention. It is virtually identical to adding the subscriber's address to the "`Editor=`" keyword, but easier to manage. The only difference between the `EDITOR` option and the "`Editor=`" keyword, other than not being visible in the list header, is that the "`Editor=`" keyword also defines a (seldom used) access level class that can then be used in keywords such as "`Review=`". Thus, one could have a list with "`Review= Editor`", indicating that only the users listed in the "`Editor=`" keyword are allowed to review the list. The EDITOR option does not confer this privilege.

Note: The `EDITOR` option is only meaningful on moderated lists.

The list owner or LISTSERV maintainer may issue the

```
SET listname NOEDITOR FOR userid@host
```

command to reverse a previously-set `EDITOR`.

Setting `EDITOR` for a user cancels any previous NOPOST or REVIEW setting for that user.

5.3.13 REVIEW/NOREVIEW

This option may be set only by list owners or the LISTSERV maintainer. It is not available in LISTSERV Lite.

When a subscriber is set to `REVIEW`, all postings from that subscriber are forwarded to the list editor or list owner for approval. Approval for these postings is always via the OK mechanism – there is no need to forward the posting to the list, simply reply to the approval confirmation with "OK".

Note that if a list is unmoderated, it is still possible to direct `REVIEW` postings to a specific person by adding an "`Editor=`" or "`Moderator=`" keyword to the list header.

The list owner or LISTSERV maintainer may issue the

```
SET listname NOREVIEW FOR userid@host
```

command to reverse a previously-set `REVIEW`.

Setting `REVIEW` for a user cancels any previous `NOPOST` or `EDITOR` setting for that user.

5.3.14 RENEW/NORENEW

This option may be set only by list owners or the LISTSERV maintainer.

Enables or disables subscription renewal confirmation on an individual subscriber basis. Setting a subscription to `NORENEW` is particularly useful for exempting list owners, redistribution lists, and other subscriptions which should not or must not receive the confirmation request message from the renewal process.

The list owner or LISTSERV maintainer may issue the

```
SET listname RENEW FOR userid@host
```

command to reverse a previously-set `NORENEW`.

5.4 Setting Original Default Options with the Default-Options= Keyword

The list owner may specify original defaults for many subscriber options by using the "`Default-Options=`" keyword. This keyword takes regular `SET` options as its parameters. Examples include:

```
* Default-Options= DIGEST,NOREPRO,NOACK
* Default-Options= REPRO,NONE
```

You may have more than one "`Default-Options=`" line in your header, as needed.

Notes: Any default topics are set with the "Default-Topics=" keyword. See the List Keyword Reference document for details on this keyword.

Your existing subscribers are not affected by any change to the `Default-Options=` keyword. This keyword sets initial options only for people who subscribe after it is defined. If you want to update your existing subscribers to the `Default-Options` settings, you must use the `SET` command with a wildcard (i.e., `FOR *@*`) to do so.

Section 6 Moderating and Editing Lists

Much of this section is subjective, based on personal experiences during nearly two decades of list ownership, and may not necessarily match your own philosophy of "the way things ought to be." The following sections are offered as one way to run a list, and the author does not mean to assert that the one way offered is the only way. As we seem to say so often, "your mileage may vary."

6.1 List Charters, Welcome Files, and Administrative Updates

One of the most important things you can do as a list owner is make it clear from the outset what policies are in place and will be enforced if it becomes necessary. Due to a potential for controversy, for instance, some lists may require a formal "list charter" by which all subscribers must agree to abide before they are allowed to subscribe. Other lists may be able to get by with a simple welcome file (see below) that spells out basic netiquette, polices on "flaming" and commercial posts, and anything else that seems appropriate (such as how to get in touch with the list owner in an emergency, where the list archives are located, etc.).

It is particularly important on open subscription lists that you make a concerted effort to remind your subscribers on a regular basis of the policies you have set for your list, as well as any other information they need in order to make best use of your list. If you have a great deal of subscriber turnover, it may be necessary to do this every few weeks. You may decide to put together a quarterly or semi-yearly post for more stable lists. Ensure that the subject line is indicative of what the administrative posting is so that there is no question as to whether or not you posted it (even if subscribers don't read it). (Note that you can use the PROBE1 mail template form and automatic address probing to do this.)

6.2 The Role of the List Owner as Moderator

By default, the list owner becomes a moderator of sorts, even if the list in question is neither edited nor officially moderated. This means that, as a list owner, you must be prepared to maintain order if it becomes necessary. At the same time, you must moderate yourself so that you do not alienate users and cause your list and/or host institution to suffer as a result. Thankfully, mailing lists have generally enjoyed relative peace and quiet over the years in comparison to newsgroups, but mailing lists have unique problems of their own.

Lists dedicated to controversial subjects are more likely to become arenas for "flame wars" between subscribers with hard-held and differing opinions than those dedicated to the discussion of popular software packages, but this does not mean that the latter are immune any more than it means that the former are constantly plagued by flames. The example set by you as list owner and as a participating subscriber to the list is perhaps the most important factor in whether or not your list becomes a site known for strife and controversy. In other words, if you appear not to care about whether or not discussion is on topic and/or civilized, no one else will, either. Yet if you become a policeman – the other end of the spectrum – no one will want to subscribe or participate for fear of your wrath. Either way, your list is unlikely to last very long.

The middle ground is, as in most things, the place to be when administering a list. Some call this "firm but fair," letting things go pretty much as they will but stepping in with a wry or gently chiding remark from time to time when exchanges get heated. And they will! Software discussion lists are particularly bad about this when new subscribers ask "frequently-asked questions" (FAQs) and veteran subscribers respond in exasperated fashion with "RTFM!" (Read The Fine Manual) and similar nasty retorts. Good list owner practice at this point is likely to be a good-natured reminder from you that flames belong in private mail, pointing out that new subscribers have no way of knowing that the particular questions they ask have been asked (and answered!) “n” random times before, and possibly adding a link to the list's archives (if they are available on the web) or instruction on how to use the SEARCH command or the web-based archive search feature to look for answers before asking.

Finally, if your mailing list has an international audience, you must be careful to account for language problems and cultural differences. You will need to decide which languages are allowed or not allowed on the list; this should be mentioned shortly in the list abstract or welcome message. Unless the list is specific to one country or is explicitly for discussion in a specific language, the official language will probably be English. As your list grows, some subscribers may object to this decision, arguing that people who have trouble expressing themselves in English should be allowed to use their own language, with the understanding that many people will be unable to understand what they are saying. As the list owner, it will be your call. Usually, the best compromise is to start a separate list for discussions in the new language. However, you must be careful in wording your decision. In multi-lingual cultures, it is usually considered a courtesy to use the other person’s language. It is certainly considered rude for people to demand that everyone else should speak their language. Thus, if your native language is English, you will be in a delicate position. To avoid a flame war, you will want to make sure that your decision does not come out as a unilateral demand. Politely suggesting a separate list, and tolerating an occasional non-English posting when the poster genuinely cannot speak English, is often the best course of action.

Another possible source of flame wars is unintended rudeness. It is easy to forget that non native speakers are making an effort every time they post something to the list. People will make mistakes, sometimes appearing rude when they did not mean to, simply because they used the wrong word. Another cause of apparent rudeness is cultural difference. Things which are perfectly normal in one culture can be insulting in another. For instance, ad hominem attacks are perfectly acceptable in some countries. Conversely, referring to other people by their first name ("As Peter said in his last message,...") can be downright insulting in some cultures, where anything short of the full title is at best condescending. But, of course, in other countries the use of the full title is considered sarcastic... There is no middle ground here, because there are too many conflicting cultures and too many languages. The only way to successful cross-cultural communication is through the tolerance of other people’s cultural habits, in return for their tolerance of yours.

6.3 The Role of the List Owner as Editor

Edited lists are generally used for the purpose of "full moderation" or for refereed electronic journals or the like, for which random postings from subscribers and/or non-subscribers may not be welcome for general distribution. This places the list owner and any editors in the position of being full-time monitors of what is and is not allowed to go through to the list.

A word of warning to potential list editors: Rules on the Internet are not set in stone. Some people will insist on their right to post without what they will term "censorship" by the list editor. Some will become upset to the point of threatening to report you to your local computing center administrators for abridging their freedom of speech, or (in the U.S.) even threatening to sue you/your institution for an abridgment of their First Amendment rights. It is therefore important to you that you keep a "paper trail" of such complaints in the event that threats become reality and you are asked about them. This common practice in the business world should be common practice in list ownership as well.

Freedom of speech and copyright issues on the Internet have not yet been tested in the courts as of this writing. These are both areas in which list editors and list owners must tread carefully. Always document any problems you may have in these areas.

6.4 Setting Up an Edited List

The "Moderator=" keyword and moderation "load-sharing" are not available in LISTSERV Lite.

Note: L-Soft currently recommends that edited lists be coded with the "`,Confirm`" parameter to the "`Send=`" keyword, in other words:

```
* Send= Editor,Confirm
```

– or –

```
* Send= Editor,Hold,Confirm
```

This will help prevent malicious users from forging mail from an editor address in order to get around your moderation settings, by telling LISTSERV to require an "OK" confirmation whenever it receives a posting from an editor address. The "OK" request goes to the editor address, so the forger is stymied.

Some vacation programs and broken mailers have recently been "reflecting" mail back to lists in such a way that the mail appears to be coming from the editor's address (and the mail therefore gets through). Setting the "`,Confirm`" option will stop this phenomenon as well.

When confirmation is required for Editor postings, please note that the confirmation request always goes to the Editor who posted, even if you have moderation "load-sharing" configured as noted below. Moderation "load-sharing" applies to postings from general users only.

Should you decide that an edited list is the way to go for your particular situation, you need only add the following lines to your list header file:

```
* Send= Editor
* Editor= userid@some.host.edu
```

where "userid@some.host.edu" should be replaced with the network address of the person who will be handling submissions to your list.

There can be multiple editors as well (and multiple Editor= lines, if desirable), and they do not have to be list owners:

```
* Send= Editor
* Editor= alex@reges.org,joe@foo.bar.edu
* Editor= tony@tiger.com
```

Normally, LISTSERV forwards submissions only to the first editor defined by the "Editor=" keyword. In the case above, all submissions would go to the primary list owner.

Note: The first editor CANNOT be an access-level; e.g., you cannot use the notation "`Editor= Owner`" to define the first editor. LISTSERV requires that the primary editor of a list must be the e-mail address of a real person.

This does not apply to second and subsequent editors. For instance, in order to allow subscribers to post directly but have non-subscriber posts sent to an editor for approval, you can code something like:

```
* Send= Editor
* Editor= alex@reges.org,(MYLIST-L)
```

On a high-volume list, LISTSERV allows you to share the editing load via the "`Moderator=`" keyword. By default, this keyword is set to the same value as the first editor defined by "`Editor=`". When you define more network addresses with the "`Moderator=`" keyword, LISTSERV sends submissions to each moderator in sequence. The difference between the "`Editor=`" and "`Moderator=`" keywords lies in the fact that while any editor can post directly to the list, only moderators receive the forwarded submissions from non-editors.

Here is an example of a list with both Editor= and Moderator= keywords defined:

```
* Send= Editor
* Editor= joe@foo.bar.edu,tony@tiger.com,kent@net.police.net
* Moderator= kent@net.police.net,joe@foo.bar.edu
```

This list will "load-share" the editing duties between Kent and Joe. Tony is able to post directly to the list, but will not receive forwarded subscriber posts for editing.

Note: Whereas an Editor is not required to be a Moderator, a Moderator should always be listed as an Editor. LISTSERV currently compares the contents of the "`Editor=`" and "`Moderator=`" keywords and consolidates the two sets of parameters if necessary, but coding lists this way is not considered good practice and the "compare/consolidate" feature may be removed in a future upgrade.

If the parameter "`All`" is coded before any moderator addresses, LISTSERV will send copies of all postings to all moderators, any of whom may approve the message. An example of this would be

```
* Moderator= All,kent@net.police.net,joe@foo.bar.edu
```

Assuming "`Send= Editor, Hold`", once a message is approved by one of the moderators, any other moderator attempting to approve the same message will be told that an identical message has already been posted to the list.

If "`Send= Editor`" (e.g., without "`Hold`"), then if a note is appended or prepended to the edited post, or if the body of the post itself is edited (that is to say, if the body of the approved message is changed), duplicates are possible. Thus, it is important that the moderators of any list set up this way pay close attention to whether or not the posting has already been approved by another moderator.

6.5 Submitting Subscriber Contributions to an Edited List

By default, LISTSERV forwards subscriber contributions to the Moderator/Editor with the following paragraph prepended to the message body:

Figure 6-1 Example of the "Editor-Header" Prepended By Default

```
This message was originally submitted by JOE@FOO.BAR.COM to the
ACCESS-L list at PEACH.EASE.LSOFT.COM. If you simply forward it
back to the list, using a mail command that generates "Resent-
" fields (ask your local user support or consult the
documentation of your mail program if in doubt), it will be
distributed and the explanations you   are now reading will be
removed automatically. If on the other hand you edit the
contributions you receive into a digest, you will have to remove
this paragraph manually. Finally, you should be able to contact
the author of this message by using the normal "reply" function
of your mail program.
------------ Message requiring your approval (25 lines) ------
------ [message body]
```

If you leave this paragraph prepended to the message, LISTSERV will strip it off when it processes the message and to all intents and purposes the message will appear to have come directly from the original sender. Warning: If your mail program or client does not generate "Resent-" fields, the forwarded postings will appear to be coming from you rather than from the original sender. See Section 6.6 Message Approval with Send= Editor,Hold for an alternative if your mail program does not generate these fields.

Note: If you leave the editor-header paragraph on the message, make sure that your mail client or mail server does not insert quoting characters (e.g., ">") at the beginning of all of the lines in the message when you use the forwarding function of your mail program. If this happens then the editor-header will not be stripped from the message.

When you are ready to edit and/or submit the contribution to the list, simply use the "Forward" function of your mail client. You can make any changes you feel are appropriate to the message body, but be sure to read Sections 6.2 The Role of the List Owner as Moderator and 6.3 The Role of the List Owner as Editor before deciding.

6.6 Message Approval with Send= Editor,Hold

LISTSERV includes an optional mechanism allowing you to simply "ok" messages which are then posted with all the correct headers. This option is targeted mainly at list moderators who just approve/reject messages, as opposed to people who actually edit the content of messages. The option is also a good choice if you have a mail client that does not insert "`Resent-`" header lines into forwarded mail.

To activate this feature, code your list "`Send= Editor,Hold`" and be sure that you have defined at least one editor who will be in charge of approving the messages. A copy of the message on "hold" is sent to the editor with minimal instructions (in order to avoid adding a long message before the text needing approval each time).

To approve a message forwarded to you with "`Send= Editor,Hold`", simply reply to the approval request and type "OK" as the body of your reply. LISTSERV will normally pick up the confirmation request number from the subject line. If there is a problem, LISTSERV may ask you to resend the approval confirmation along with the number. For instance,

```
OK 6A943D3C
```

If the message has been in the spool longer than the time-out period (LISTSERV holds these jobs for a minimum of 7 days), you will receive notification that the confirmation number does not match any queued job. If you need to increase the time-out period, you can set a value for the "Confirm-Delay=" list header keyword that is greater than 168h, but please read the section on "Confirm-Delay=" in the List Keyword Reference document before doing so.

If you do not want the message to be forwarded on to the list, you need not do anything. The message will expire automatically at the end of the time-out period and will be deleted from the queue.

6.7 Using List Topics

List topics are not available in LISTSERV Lite.

List topics provide powerful "sub-list" capabilities to a list. When properly set up and used, topics give subscribers the ability to receive list postings in a selective manner, based on the beginning of the "Subject:" line of the mail header. It is important to note the following points about topics:

- Topics are best employed on moderated lists. This makes it possible to review the "Subject:" header line to make sure that it conforms to one or more of the topics defined for the list before you forward the post to the list. Not only does this help catch simple errors (such as misspellings of the topic), but it also allows the moderator to add a topic into the subject line if one is not already there.
- If you employ topics on unmoderated lists, your subscribers must be well-educated in their use. Otherwise, there is no point in using them. Messages that do not conform to a specified topic are lumped into the reserved topic "Other" and are distributed only to subscribers who have explicitly defined "Other" as a topic they wish to receive. Therefore, some subscribers will receive the message and some won't, and it is problematic as to whether the message will actually reach the entire audience for which it is intended.
- It is important to note that topics are active only when the subscriber's subscription is set to `MAIL`. All messages posted to the list, regardless of topic, are included in the digest and/or index for the list (if available) because the same digest/index is prepared and sent to all the digest/index subscribers. Similarly, all messages posted to the list are archived in the list's notebook logs (if available), making it possible for subscribers to retrieve postings in topics they are not set to receive normally.

The basic keyword syntax for defining list topics in the list header file is:

```
* Topics= topic1,topic2,...topic21
```

And the basic syntax used to set topics for users once they have been defined is:

```
SET listname TOPICS: xxx yyy zzz for userid@host
```

where *xxx*, *yyy*, and *zzz* can be:

- A list of all the topics the subscriber wishes to receive. In that case these topics replace any other topics the subscriber may have subscribed to before. For instance, after '`SET XYZ-L TOPICS: NEWS BENCH`', the subscriber will receive news and benchmarks, and nothing else.
- Updates to the list of topics the subscriber currently receives. A plus sign indicates a topic that should be added, a minus sign requests the removal of a topic. For instance, "`SET XYZ-L TOPICS: +NEWS -BENCH`" adds news and removes benchmarks. If a topic name is given without a + or - sign, + is assumed; "`SET XYZ-L TOPICS: +NEWS BENCH`" adds news and benchmarks. The first topic name must have the plus sign to show that this is an addition, and not a replacement.
- A combination of the above, mostly useful to enable all but a few topics: "`SET XYZ-L TOPICS: ALL -MEETINGS`".

The colon after the keyword `TOPICS:` is optional, and `TOPICS=` is also accepted. The subscriber should not forget to include the special `OTHER` topic if you want to receive general discussions which were not labeled properly. On the other hand, if the subscriber only wants to receive properly labeled messages it should not be included. `ALL` does include `OTHER`.

With the "`Default-Topics=`" keyword, you can also set default topics for users that will be effective as soon as they subscribe to the list. For instance,

```
* Default-Topics= NEWS,BENCH,OTHER
```

would set the new user to receive topics NEWS, BENCHmarks, and any messages that are incorrectly labeled.

You may get a listing of topics with the number of subscribers who have them set by issuing the command

```
REVIEW listname Short TOPics
```

(if you do not specify Short then the topic listing follows the list of subscribers in the review output). The following is a sample output (assuming you actually have topics enabled; if topics are not enabled then the `TOPics` option is ignored):

```
*   Topic                        Subscribers
*   -----                        -----------
*   Apps                               1,411
*   Backup                             1,330
*   Beta                                 951
*   Bugs                               1,416
*   Comm                               1,395
*   Desktop                            1,407
*   Hardware                           1,401
*   Install                            1,373
*   Internet                     1,002
*   Network                      1,399
*   Wish                         1,336
*
*   "Other" topic                1,294
*   Digest/index subscribers     1,384
```

See the List Keyword Reference document under the Topics= keyword for more information on setting up and using list topics.

6.8 The <listname> WELCOME and <listname> FAREWELL files

When a user subscribes and signs off of a list, LISTSERV looks for list owner-supplied files called *listname*.WELCOME and *listname*.FAREWELL, respectively. If found, it sends the user a copy of the appropriate file in addition to its own administrative message. The WELCOME and FAREWELL files allow the list owner to send a more personal message to the user that can help set the tone for how the list is used. The WELCOME file may contain information about the list charter and netiquette rules, or be simply a message welcoming the user to the list. The FAREWELL file can be used to gather feedback about how the list is serving users.

6.8.1 Creating and Storing the *listname* WELCOME and FAREWELL Files

The procedure differs slightly on VM systems, but the following will work for unix, VMS and Windows systems:

1. Create the file. If you place a "Subject:" line at the top of the document, i.e., as the first line, LISTSERV will pick that line up and use it as the RFC822 "Subject:" header line. Otherwise, LISTSERV places a generic subject line in the mail message.
2. If the file contains special characters (i.e., non-7-bit ASCII characters) and you want to specify a character set for LISTSERV to include in the headers of the message, place a line such as:

   Character-Set: ISO-8859-7

   at the top of the message (or directly following the "Subject:" line if one is configured). The value "ISO-8859-7" is used here as an example only and should be replaced with the appropriate character set descriptor. If the file does not contain any non-7-bit ASCII characters, this line will be ignored.
3. Be sure that you have defined a "personal password" to LISTSERV with the PW ADD command before you PUT the welcome file. If you have done this but can't remember the password, send LISTSERV a PW RESET command. You will then be able to add a new password with the PW ADD command.
4. Send the file to LISTSERV with a PUT listname WELCOME PW=XXXXXXXX command at the top of the file, just as if you were putting the list itself. Replace XXXXXXXX with your personal password.

The variation for VM systems is that the LISTSERV maintainer will have to create a fileid for the file before you can PUT it on the server. Contact the LISTSERV maintainer before trying to store your WELCOME and/or FAREWELL files.

Here is the format of a very simple WELCOME file. (Note that the FAREWELL file is created and stored in an identical manner.)

Figure 6-2 Sample WELCOME File

```
PUT SONGTALK WELCOME PW=XXXXXXXX
Subject: Welcome to Songtalk!
Welcome to Songtalk, the list for Songwriters talking about
their work.
Your list owner is Susan Lowell (susan@example.com).
```

6.8.2 Using the *listname* WELCOME File as a Moderation Tool

The WELCOME file should contain information geared toward orienting the new subscriber to several areas. The outline of a suggested WELCOME file follows:

- The revision date for the WELCOME file.
- A heading including the short and long names of the list, along with the name and network address of the primary list owner (or the list owner who handles subscription issues/problems).
- Any warnings about the list that you want people to see immediately. These might include
    - a notice regarding the volume of mail subscribers can expect from the list
    - any newsgroups that echo the list
    - ftp sites for the list
    - where to send LISTSERV commands
    - where to find more in-depth information about the list (if you do a quarterly administrative posting or have a FAQ, where can it be found?)
- A short abstract of what the list is all about. This might be a duplicate of the description you send to NEW-LIST.
- The author includes the following paragraph at this point:

```
Users new to the use of L-Soft's LISTSERV are encouraged to
read the online files LISTSERV REFCARD and LISTSERV GENINTRO,
which can be obtained by sending the following commands in the
body of a mail message to LISTSERV@LISTSERV.NET:
INFO REFCARD
INFO GENINTRO
```

- Any guidelines for use of the list, including the list charter if you have one.
- Information about the notebook archives and how to retrieve them.
- Other list-specific information that might be important to new users.

Naturally, list owners should write WELCOME files based on their own experience of what is needed. A WELCOME file should not be static – review it once in a while to ensure that it continues to meet the needs of new subscribers.

6.8.3 Using the *listname* FAREWELL File as a Feedback Tool

The following FAREWELL file was anciently used on the ACCESS-L list on PEACH.EASE.LSOFT.COM, and was intended as a tool to get feedback from users. When it was in use ACCESS-L's list owner typically received 3-5 responses to this message each week.

Figure 6-3 FAREWELL File Used as a Feedback Tool

```
Subject: Your ACCESS-L Signoff Request
I'm sorry to see that you're leaving ACCESS-L.  If there is
anything you believe ACCESS-L should have offered but didn't,
or there are any other suggestions you may have for the list,
please feel free to write directly to me.
Sincerely,
Nathan Brindle <nathan@indycms.iupui.edu>
ACCESS-L List Owner
```

6.8.4 The Alternative to Using WELCOME and FAREWELL Files

It is possible to modify LISTSERV's default mail template so that only one message is sent to users when they subscribe and unsubscribe, rather than an administrative message from LISTSERV and a WELCOME or FAREWELL file from the list owner. See Section 9 Creating and Editing Mail and Web Templates for the details on modifying the default mail templates.

However, it is likely that the average list owner will prefer to use the WELCOME and FAREWELL files over changing the more-complicated templates. Thus both avenues are provided, and may be used depending on the list owner's level of comfort.

6.9 Social Conventions ("Netiquette")

Like so many other things, network users tend to expend a great deal of virtual gunpowder about the subject of etiquette on the network (otherwise known as netiquette). Part of the culture of the network is built on the fact that an individual user can put forward any face he or she cares to present. Thus, over time, the network has evolved various sets of rules that attempt to govern conduct. To avoid taking up a great deal of space arguing the merits of differing systems of netiquette, the following general pointers that should be accepted by most users are offered for the convenience of the list owner.

6.9.1 Recognizing and Accepting Cultural and Linguistic Differences

The Internet is international, and while English is generally accepted as the common language of the network, list owners and list subscribers cannot afford to take the position that everyone on the Internet understands English well. In a medium that is invariably connected to language, special understanding is required to deal with questions or statements from people for whom English is not the primary tongue. Often today (at least in the US) a person's first sustained interaction with others on an international basis is via the Internet. It is imperative that this interaction be on the highest level of cordiality and respect from the outset in order for all concerned to benefit.

Additionally, care should be taken when using local idiom and slang. A common word or phrase used by Americans in everyday speech, for instance, might be taken as profanity or insult by those in other English-speaking countries, and may not be understood at all by non-native speakers of English. When a list has a high international readership, it is probably best to avoid non-standard English so as to provide the clearest and least-objectionable exchange of ideas.

6.9.2 Private Mail Should Dictate Private Responses

If someone on a mailing list has sent a private message to you (i.e., not to the list at large) and you have lost that person's address but want to respond, do not post private mail to the list. The REVIEW command will give you a copy of the list membership that you can search for the person's address. If this approach does not work, contact the local postmaster or the list owner for help.

6.9.3 Flaming is (Usually) Inappropriate

Flames (insults) belong in private mail, if they belong in mail at all. Discussions will often result in disagreements. Rebuttals to another person's opinions or beliefs should always be made in a rational, logical and mature manner, whether they are made publicly or privately. What is a flame can range from the obvious (ranting and raving, abusive comments, etc.) to the not-so-obvious (comments about how many "newbies" seem to be on the list these days, "RTFM!" exhortations, etc.).

6.9.4 Foul Language

Subscribers should refrain from abusive or derogatory language that might be considered questionable by even the most liberal and open-minded of networkers. If you wouldn't say it in front of your mother, don't say it in electronic mail.

6.9.5 Unsolicited Advertising and Chain Letters

Most of these are contrary to appropriate use policies governing the use of the poster's Internet access provider. Not only that, they are annoying and (in the case of chain letters) often illegal. See Section 6.10 on the subject of "spamming" for more details.

6.9.6 Other Disruptive or Abusive Behavior

Self-explanatory. It is rarely possible to catalog all forms of anti-social network behavior. Be sure that you as a list owner cover as many bases as you think necessary when promulgating a code of netiquette for your list. Then, be sure to adhere to it yourself.

6.10 Spamming: “Don't Feed the Trolls”

"Spamming" is a network term invented to describe the act of cross-posting the same message to as many newsgroups and/or mailing lists as possible, whether or not the message is germane to the stated topic of the newsgroups or mailing lists that are being targeted. A "spam" is defined therefore as either (1) a specific act of spamming, such as the original so-called "Green Card Spam", or (2) the message that actually comes to your list as a result of someone initiating a specific act of spamming ("The message you just saw was a spam, and it should be ignored"). Spams are fairly easy to recognize at a quick glance; they often have "To:" fields directed to large numbers of lists, usually in alphabetical order.

If a spam gets through to your list, it will probably engender sarcastic replies (often with the spam quoted in its entirety) – and if your list is coded "Reply-To= List", they will likely come back to the list. It is therefore imperative that you make subscribers aware that when a spam occurs:

- The person responsible for the spam is probably not subscribed to the list, and any response back to the list will not reach that person.
- An appropriate response to a spam is to forward a single copy of the spam to the person in charge of the site from which the spam originated ("POSTMASTER", "ROOT", etc.) pointing out that the spammer is probably violating his site's appropriate use policies.
- It is inappropriate to attempt to flood the spammer's mailbox with network mail in response. This is probably in violation of your network's appropriate use policies, and it just wastes bandwidth.

Perhaps the best policy an individual subscriber can adopt toward spammers is simply to ignore them and allow list owners and newsgroup moderators to take care of the problem. If this does not work and subscribers send their complaints to the list anyway, it might be a good idea to moderate the list for a few days until the furor dies down.

LISTSERV attempts to detect "spams" using a variety of proprietary methods. When LISTSERV decides that a message is a spam, it locks out the user for 48 hours, worldwide in the case of registered LISTSERV networked servers. While locked the user is still able to use LISTSERV normally and to post to mailing lists, but all messages will be forwarded to the list owners for human verification. The user is informed that this has happened but is not informed of which lists caught the message and which didn't, denying him any idea how successful he has been.

L-Soft will not document how LISTSERV decides a message is a spam because the point has been reached where a number of authors are writing and selling books detailing how to avoid such precautions. If L-Soft were to document its methods, the next editions of these books would simply include updated instructions on how to bypass them.

If you are interested in a discussion of the phenomenon of SPAM, you can join the SPAM-L mailing list on LISTSERV@PEACH.EASE.LSOFT.COM.

6.11 Considerations for Appropriate Use Policies

As a list owner, it is important that you take into consideration any appropriate use policies that might apply to your list. For instance, if your list is hosted by an educational site that has a policy restricting mail with commercial content from being sent out by its users, your list will technically be in violation of that policy if it distributes mail from users advertising commercial services. You would be well advised to request a copy of the appropriate use policy (if any) from your host site and make sure that your subscribers are aware of it by including pertinent sections in your WELCOME file and/or your administrative postings.

Host sites are not the only entities that might have appropriate use policies. The network your host is a part of may have such policies as well.

Section 7 List Archives

The list archive consists of all of the notebook logs for your list. (If your list is coded "`Notebook= No`", then it does not have a list archive, of course.) Users can find out what notebook logs are available for a specific list by sending the command `INDex` *`listname`* to the appropriate LISTSERV host.

7.1 Setting Up and Managing Archive Notebooks

If your list is coded "`Notebook= No`", you should consult your LISTSERV maintainer before changing the keyword to create list archive notebooks. The LISTSERV maintainer will have to tell you where the notebook should be kept (the second parameter in the "`Notebook=`" keyword). Also, depending on local policies, you may or may not be allowed to archive your list, or keep more than a few months' or weeks' worth of archives available at a given time.

7.1.1 Indexing Available Archive Notebooks

To find out what archive notebooks are available for your list, simply send the `INDex` *`listname`* command to LISTSERV.

7.1.2 Deleting Existing Archive Notebooks

To delete an existing archive notebook, simply execute a PUT operation for the notebook in question without sending any other text along with the PUT command line. For instance, send an email with the following text as the only content in the body of the message:

```
PUT MYLIST LOG9607 PW=mypersonalpw
```

This command without any other additional text would delete MYLIST LOG9607 from the server.

Two important issues:

- This command MUST be issued by e-mail. It cannot be issued via the "Execute a LISTSERV command" facility of the web management interface.
- You MUST turn off your signature file (if one is enabled in your mail client) in order to successfully delete files. If you do not, LISTSERV will store your signature file in place of the file you are trying to delete instead of deleting the file.

7.2 Database Functions

This information is generally obsolete other than for VM servers, and has been moved to the Advanced Topics Manual for LISTSERV.

Section 8 File Archives

There are three file server systems currently in use by various versions of LISTSERV:

- The VM (mainframe) version of LISTSERV continues to support the "traditional" file server system. While it is very powerful, this file server system dates back to 1986 and suffers from a few annoying limitations. In addition, it is written in a non portable language. This will be replaced eventually with the "new" file server system, currently under development.
- The non-VM versions of LISTSERV 1.8d enhanced further the new file server system introduced in non-VM 1.8c, which included most of the functionality of the "traditional" file system. Notably, GIVE and file "packages" became available. Most end user commands continue to work as before. However, there is no guarantee that the internal data files manipulated by the file server functions will remain as before. Note that SITE.CATALOG files from versions 1.8a through 1.8c are still supported and will not need to be changed in order to work with 1.8d and later.
- The non-VM versions of LISTSERV 1.8a and 1.8b supported a "temporary" file server system, to provide an interim solution while the new system was being developed. This temporary system supports only a subset of the functions of the traditional system. This system is no longer supported by L-Soft as it has been superseded by the new non-VM file server referenced above.

In general, the three systems are compatible, with the understanding that the temporary system does not include all the possible options. However, the mechanism for registering files (defining them to the file server system) is different.

Since the first and third systems will eventually be replaced by the second system, rather than providing an exhaustive section detailing all filelist aspects from the management side, we have provided only a basic overview of the two systems currently in the field with 15.5, with pointers to where further information may be obtained.

8.1 What is the File Archive?

The file archive consists of all files other than notebook logs that have been stored on the LISTSERV host for your list. Users can find out what files are available for a specific list by sending the command `INDex` *`listname`* to the appropriate LISTSERV host.

8.2 Starting a File Archive for your List

8.2.1 On VM Systems ONLY

With the traditional system (running on the VM servers), the LISTSERV maintainer creates files called "`xxxx FILELIST`", which contain definitions for all the files belonging to a particular archive. These FILELIST files must be created by the LISTSERV maintainer at the site before they can be edited by the list owner.[1]

8.2.2 On Workstation and PC Systems

The LISTSERV maintainer creates a definition for your *`listname`*`.CATALOG` in a system-global file called `SITE.CATALOG`. The list owner then follows the instructions in Section 8.4 The listname.CATALOG System on non-VM Systems to register files and store them on the server.

Note: The instructions in Section 8.3 Filelist Maintenance (VM Systems Only) and the instructions in Section 8.4 The listname.CATALOG System on non-VM Systems are not interchangeable. If you are not sure which system your list is running on, then you can send the command `RELEASE` to the server to find out.

8.3 Filelist Maintenance (VM Systems Only)

If your list is running on LISTSERV under unix, Windows, or VMS, please skip this section as it does not pertain in any way to your implementation of LISTSERV.

Maintaining the filelist for your archive is not difficult. It requires only that you have a working knowledge of VM XEDIT (or your local system's editor) and understand how to send files via email.

8.3.1 Retrieving the Filelist

To retrieve your filelist in an editable format, send the command

```
GET listname FILELIST PW=XXXXXXXX (CTL
```

to the LISTSERV host where the filelist is stored. The `(CTL` switch causes LISTSERV to lock the filelist until you store it again or explicitly unlock it with an `UNLOCK` *`listname`* `FILELIST` command. (If you don't want to lock the filelist, use `(CTL NOLOCK` instead.) If your mail account is not located on the same host as LISTSERV, you will need to provide your personal password (same as your password for getting and putting your lists).

A filelist retrieved with the `(CTL` option does not look like the filelist you get with an `INDEX` command. A sample `(CTL` option filelist appears below:

1. If you are interested in the mechanics of starting a VM-type filelist, the best reference is "Setting Up the LISTSERV File Server--A Beginner's Guide" by Ben Chi (bec@albany.edu). This publication is available from LISTSERV@ALBANY.EDU as FSV GUIDE.

Figure 8-1 Sample Filelist Retrieved with (CTL Option

```
*  Files associated with MYLIST and available to subscribers:
*                          rec                last - change
* filename filetype   GET PUT -fm lrecl nrecs   date     time    Remarks
* -------- --------   --- --- --- ----- ----- -------- -------- --------
  MYLIST   POLICY    ALL OWN V      79   45 94/03/16 12:04:23 Mission Statement
  MYLIST   BOOKLIST   ALL OWN V     79   177 94/04/19 16:24:57 Books of interest
  MYLIST   QUARTER    ALL OWN V    73   113 95/03/11 08:57:04 Quarterly posting

*  Listowner's files (not public)
  MYLIST   FAREWELL   OWN OWN V      78      9 95/03/11 08:53:41 Goodbye memo
  MYLIST   WELCOME    OWN OWN V      73    105 95/03/11 09:14:38 Hello memo
```

Note: The filelist does not include the comment lines you would normally see at the top of an INDEX filelist; nor does it include any notebook archives. LISTSERV creates these lines dynamically at the time the `INDEX` command is received from a user. If the filelist you have retrieved has any of this kind of material in it, either (a) you have not retrieved the filelist correctly, or (b) you or someone else has stored the filelist previously with this material included. If you did a `GET` with `(CTL`, you should be able to remove these extraneous lines by simply deleting them.

If you do an `INDEX` of your archive and it has (for instance) two sets of comment lines or duplicate notebook archive listings, then you should `GET` the filelist with `(CTL` and edit out the offending lines. While the extra lines will not affect the operation of the file server, they are a source of potential confusion for your users.

8.3.2 Adding File Descriptors to the Filelist

"Adding a file to a filelist" is not exactly accurate terminology, although it is a widely-used phrase. Adding files to file archives is a two-step process. First, add a file descriptor to the appropriate filelist and store the filelist on the server. Second, store the file itself on the server.

To add a file descriptor, start a line with a space and then type in your file's name, access codes, five dots (periods) and a short description, each separated by a space. For example:

```
MYLIST FAQ ALL OWN . . . . . Frequently-Asked Questions for
MYLIST
```

Note: The line must begin with a space. Also, you must place five dots separated by spaces between the PUT file access code (here it is `OWN`) and the short description. These dots are place holders for the record format (recfm), longest record length (lrecl), number of records (nrecs), and the date and time of the last update. If these dots are not present, LISTSERV will return an error message when you try to store the filelist.

You will note that the line you have just added does not look like the other lines in the filelist. Ignore the "pretty" formatting. LISTSERV will reformat the information for you. After adding the line, your filelist should look like this:

Figure 8-2 Adding a File Descriptor to the Filelist

```
*  Files associated with MYLIST and available to subscribers:
*                              rec                 last - change
* filename filetype   GET PUT -fm lrecl nrecs   date     time   Remarks
* -------- --------   --- --- --- ----- ----- -------- -------- --------
  MYLIST   POLICY     ALL OWN V      79    45 94/03/16 12:04:23 Mission Statement
  MYLIST   BOOKLIST   ALL OWN V      79   177 94/04/19 16:24:57 Books of interest
  MYLIST   QUARTER    ALL OWN V      73   113 95/03/11 08:57:04 Quarterly posting
  MYLIST FAQ ALL OWN . . . . . . Frequently-Asked Questions for MYLIST
*  Listowner's files (not public)
  MYLIST   FAREWELL   OWN OWN V      78     9 95/03/11 08:53:41 Goodbye memo
  MYLIST   WELCOME    OWN OWN V      73   105 95/03/11 09:14:38 Hello memo
```

Note: You can add comment lines to the filelist by placing an asterisk in the left-most column instead of a space. Comment lines can act as indexes, descriptions, or pointers to other resources.

Once you are finished adding file descriptors, save the filelist to disk.

8.3.3 File Access Codes (FAC) for User Access

FACs define which users have access to files in the file archive. The FAC for `GET` indicates who may retrieve the files, and the FAC for `PUT` indicates who may store the files on the server.

Note: Some special FACs exist for "superusers" such as the LISTSERV maintainer(s) and the LISTSERV Master Coordinator, who may `GET` and `PUT` any file regardless of its GET/PUT permissions.

The basic FAC codes that are always available for the VM server are:

- `ALL` – Universal access.
- `PRV` – Only members of the associated mailing list have access.
- `OWN` – Only the owners of the associated mailing list have access.

Notes: The FAC codes `PRV` and `OWN` work only on the VM filelist system. They do not work on the non-VM catalog system. See Section 8.4 The listname.CATALOG System on non-VM Systems if you are configuring the non-VM systems.

This assumes the name of the filelist is identical to the name of the associated mailing list – for instance, MYLIST@FOO.BAR.EDU would have a MYLIST LIST file and a MYLIST FILELIST file. Ask your LISTSERV maintainer for assistance if this is not the case or if you need special FACs added for special user access to files.

8.3.4 Deleting File Descriptors from the Filelist

Note: Before you delete file descriptors from the filelist, you should delete the files themselves from LISTSERV's archive disk. See Section 8.6 Deleting Files from the Host Machine for instructions.

If this step is not followed, LISTSERV may not be able to find the file you want to delete after you edit the filelist and store it.

8.3.5 Storing the Filelist

1. Create a mail message to LISTSERV at the appropriate host. (Sending a filelist to LISTSERV@LISTSERV.NET will not work. The filelist must be sent to the host it resides on.)
2. Include the filelist file as plain text in the body of the mail message. Do not attach it with MIME or another encoding scheme, as LISTSERV does not translate encoded messages.
3. Make sure that your mail client does not automatically add a signature file to the bottom of your mail. If it does, your signature file will be treated as part of the filelist and will be stored along with it.
4. At the top of the filelist, add a single line as follows:

   ```
   PUT filename FILELIST PW=XXXXXXXX
   ```

   where XXXXXXXX is your personal password for LISTSERV on that host. Note that this is similar to the `PUT` command used when storing the list file.
5. Send the filelist to LISTSERV.

Once LISTSERV acknowledges the receipt and storage of the filelist, you can send the files that correspond to the file descriptors in your filelist. See Section 8.5 Storing Files on the Host Machine for instructions.

8.4 The listname.CATALOG System on non-VM Systems

List-level file catalogs are not available in LISTSERV LITE; you must register files in the SITE.CATALOG file per the instructions in the installation guide.

LISTSERV running on non-VM systems has a file archive registration system similar to (but differing in important respects from) the old VM FILELIST system.

This "sub-catalog" enhancement allows the LISTSERV administrator to delegate file management authority in a controlled and secure manner. Multiple list owners can be given the authority to maintain their own sub-catalog in a predefined directory.

From a list owner's point of view, the procedure works as follows:

1. Ask the LISTSERV administrator to create the sub-catalog for your list. You will need to provide the email addresses of the person(s) who will be in charge of managing it ("catalog owners").
2. The catalog owners use the `GET` and `PUT` commands to update their catalog and register new files in their directory. Each file has the usual `GET` and `PUT` file access codes, allowing the catalog owners to further delegate the management of individual files to third parties ("file owners").
3. The file owners manage the files in question using the `GET` and `PUT` commands. Authorized users can retrieve the files using the `GET` command.

If your list is being migrated from VM to one of the non-VM versions of LISTSERV, please note that it is not necessary to create entries in your sub-catalog for WELCOME, FAREWELL, and MAILTPL files. If entries for these files are not created, they simply do not appear in the output of an `INDEX` command. However, if desired, you can force them to appear by defining them in your sub-catalog.

8.4.1 Updating the Sub-Catalog

Once the sub-catalog is created, the catalog owner(s) can register new files using the following procedure (in this example, it will be assumed that the sub-catalog is called `MY.CATALOG`):

1. Send a `GET MY.CATALOG` command to LISTSERV (or, if the catalog is brand new, start from an empty file).
2. Register new file(s) in the catalog (see below).
3. Use the `PUT MY.CATALOG PW=XXXXX` command to store the updated catalog.

Alternatively, if the catalog owner has an account on the LISTSERV host system and write access to the directory associated with the sub-catalog, the file can be edited directly. Note however that, in that case, the LISTSERV-ISP quota system will be inoperative as it has no control over disk accesses which do not go through LISTSERV itself.

The format of sub-catalogs is similar to that of `SITE.CATALOG`:

```
MY.FILE      my.file                  ALL JOE@XYZ.COM
(1)            (2)                          (3) (4)
```

Notes: (1) This defines the name of the file as seen by LISTSERV users. That is, the command to retrieve the file will be `GET MY.FILE`.

(2) This defines the name of the actual disk file where the contents of MY.FILE will be stored. Normally, you should specify the same as (1), or just an equal sign (LISTSERV will then substitute the name you provided for (1)). However, in some cases you may want to make a particular file available under multiple names. This can be done by registering multiple files (i.e. multiple values for (1)), and using the same (2) value every time.

(3) This file access code determines who can order the file through a GET command. The following file access codes are available:

`ALL` – universal access.
`PRIVATE(xxx)` – Only members of the xxx list have access.
`OWNER(xxx)` – Only the owners of the xxx list have access.
`SERVICE(xxx)` – Only users in the service area of the xxx list have access.
`NOTEBOOK(xxx)` – Same access as the archives of the xxx list.
`user@host` – The user in question is granted access.

Except for `ALL`, which must occur on its own, multiple file access code entries can be specified, separated by a comma with no intervening space. For instance:

```
MY.FILE C:\FILES\XYZ\MY.FILE JOE@XYZ.EDU,JACK@XYZ.EDU,PRIVATE(XYZ-L) CTL
```

defines a file that Joe, Jack and the subscribers of the XYZ-L list can order via the `GET` command, but that only the LISTSERV administrator can update.

(4) This file access code determines who can update the file with the PUT command. See note (3), above, for more information on FAC codes.

(2) defaults to the value of (1), and (3) and (4) default to the GET and PUT access codes of the sub-catalog itself, respectively. So, in most cases a sub-catalog entry will be as simple as:

```
MY.FILE
```

Additionally, comment lines (starting with an asterisk) or blank lines can be interspersed with file definitions. These comments will be echoed when the sub-catalog is indexed (see below), in sequence with the file definitions. For instance, your catalog could read:

```
*
* Files for the XYZ sub-project
*
XYZ.AGENDA
XYZ.BUDGET
XYZ.PROPOSAL-1
XYZ.PROPOSAL-2
```

8.4.2 Indexing the Sub-Catalog

If MY.CATALOG is defined as:

```
MY.CATALOG     /home/lists/xyz/my.catalog   xxx JOE@XYZ.COM
```

then any user who matches the 'xxx' file access code is authorized to issue an `INDEX MY` command to get a formatted version of the catalog. For compatibility with older versions of LISTSERV, `GET MY.FILELIST` will produce the same results. If there is a mailing list called MY, a list of the archive files will be appended automatically.

8.5 Storing Files on the Host Machine

To store a file on any LISTSERV host, first ensure that it has been registered with an entry in a filelist or catalog. Then follow these instructions:

- Be sure that you have defined a "personal password" to LISTSERV with the `PW ADD` command before you `PUT` the new or edited file. If you have done this but can't remember the password, send a `PW RESET` command to LISTSERV, then a new `PW ADD` command.
- Edit your file and save it. Add a single line at the top of the file as follows (square brackets indicate optional parameters):

```
PUT filename extension [filelist|catalogname] PW=XXXXXXXX
```

(This line will not appear to people who GET the file from LISTSERV.) Replace XXXXXXXX with your personal password. If you specify the filelist or catalog name, do not put the square brackets around the name.

There are a couple of issues that need to be noted here:

- If the file you are going to store is registered in the sitewide catalog or filelist, do not specify the name of the catalog or filelist.
- If the file you are going to store is registered in a sub-catalog or filelist other than the sitewide one, you may have to specify the name of the sub-catalog or filelist in order to be able to store the file. This is because it is entirely possible that two lower-level filelists or catalogs may have files registered with the same name (for instance, README TXT). If LISTSERV has two sub-catalogs registered (for instance, MYLIST CATALOG and HISLIST CATALOG) that both have a file called README TXT registered, then a PUT README TXT command will tell LISTSERV to try and store the file in the first catalog it comes to in the hierarchy. If MYLIST CATALOG is registered before HISLIST CATALOG in SITE CATALOG, LISTSERV will try to store the file as if it belonged to MYLIST (which we assume is what you want). However, if HISLIST CATALOG is registered before MYLIST CATALOG (and many sites like to keep things in alphabetical order, so this is a most likely scenario), LISTSERV will try to store the file as if it belonged to HISLIST, and you will get an error stating that you aren't allowed to store the file.

- Be sure that the file has been registered with an entry in a filelist or the site catalog.
- Send the mail message to LISTSERV.

8.6 Deleting Files from the Host Machine

To delete a registered file on any LISTSERV host:

1. Be sure that you have defined a "personal password" to LISTSERV with the PW ADD command before you PUT the delete job. If you have done this but can't remember the password, send a PW RESET command to LISTSERV, then a new PW ADD command.
2. Create a new mail message addressed to LISTSERV. Add a single line at the top of the message as follows:

   ```
   PUT filename extension [filelist|catalogname] PW=XXXXXXXX
   ```

   (Replace XXXXXXXX with your personal password.) The same issues noted in Section 8.5 Storing Files on the Host Machine regarding the filelist/catalog name are operative here.
3. Send the mail message to LISTSERV.
4. LISTSERV will tell you that the file has been successfully deleted.

5. For VM Systems ONLY: `GET` the *`listname`* `FILELIST` for your list and delete the line for the file you've just deleted. `PUT` the *`listname`* `FILELIST` back on the server.
6. For Workstation and PC Systems ONLY: Get the *`listname`*`.CATALOG` for your list and delete the line for the file you've just deleted. `PUT` the *`listname`*`.CATALOG` back on the server. (This is not necessarily required since under non-VM, if the physical file does not exist, LISTSERV will not include it in the output of an `INDEX` command. This is primarily a housekeeping measure.)

Note: Number 5 and number 6 are not necessary when you are deleting notebook archives. LISTSERV generates the notebook archives index "on the fly" when needed.

8.7 Automatic File Distribution (AFD) and File Update Information (FUI)

If your list is running on LISTSERV under unix, Windows, or VMS, please skip the rest of this section as it does not currently pertain in any way to your implementation of LISTSERV.

AFD and FUI have not yet been ported to the workstation and PC environments. However, this feature is supported on VM and will be supported in the near future on the other platforms.

These two features are similar in their command syntax, but do different things. AFD provides a method whereby users may subscribe to specific files, which will be sent to them any time the files are updated. For instance, if you have a FAQ file that is updated monthly, a user could send an AFD subscription to that FAQ file and LISTSERV would send it to the user every time you updated and stored the FAQ.

FUI, on the other hand, is a method whereby a user subscribes to a file but receives only a notification that the file has been updated. The user can then `GET` the file at his own discretion.

AFD and FUI can be password-protected to protect users from network hackers who might forge mail from the user subscribing him to large or frequently-updated files. If a password is not provided in an `AFD` or `FUI ADD` command, LISTSERV warns the user that it would be a good idea to password protect the subscription.

8.8 File "Packages"

You can define a group of files as a "package" that can be retrieved by users with a single `GET` command. First, ensure that all the files in the package are defined in the appropriate filelist and stored on the server as detailed above.

Next, create a file descriptor in the appropriate filelist or catalog for a file called *`filename`* `$PACKAGE` (or `filename.$PACKAGE` for non-VM), where filename is the name you have chosen for the group of files. Be sure that the filetype or extension is `$PACKAGE`, with a leading $ sign, and store your filelist.

Now create the actual filename `$PACKAGE` file. At the top of the file you can insert comment lines beginning with asterisks, e.g.:

```
* MYLIST $PACKAGE
* Packing list for MYLIST PACKAGE
```

```
*
* You can make other comments here, such as
* the contact email address.
*
* filename filetype filelist
*==========================
```

Following these comment lines, you insert lines for each of the files contained in the package. There are two ways to format entries in your $PACKAGE file:

- A "compatibility" mode that works on all platforms, and which is identical to the original method used on VM (and which VM servers still must use). In the compatibility mode the basic format for the entries is

  ```
  filename filetype filelist <optional_comments>
  ```

  for example,

  ```
  MYLIST   $PACKAGE MYLIST The packing list
  INTEREST FILE     MYLIST Interest groups
  NETIQUET FILE     MYLIST How to behave
  ANOTHER  FILE     MYLIST No comment
  ```

- In the second (new) mode for non-VM servers only, the entries are formatted like this:

  ```
  filename.extension <optional_comments>
  ```

  for example,

  ```
  MYLIST.$PACKAGE The packing list
  INTEREST.FILE   Interest groups
  NETIQUET.FILE   How to behave
  ANOTHER.FILE    No comment
  ```

Note: Anything that is not the name of a file in the package must be commented out with an asterisk in the leftmost column of the line. It is possible to create a package file without any comment lines at all, but this is not preferable in practice. Often users will get the package file itself just to see what is in it. You should include a reference to the package file itself so that the user will get a copy of the "packing list" to check against the files he receives from LISTSERV.

The final step is to send the package file to LISTSERV like any other file.

Now users can do one of two things:

1. They may get the entire package of files sent to them by sending LISTSERV the command `GET` *`filename`* `PACKAGE` (without the $ sign); or
2. They may request that LISTSERV send only the package file itself by sending LISTSERV the command GET *filename* $PACKAGE (with the $ sign).

Packages may be subscribed to with the AFD and FUI commands (VM only).

8.9 Where to Find More information on File Archives

LISTSERV maintainers can also find more information in the Site Manager's Operations Manual for LISTSERV.

Section 9 Creating and Editing Mail and Web Templates

Significant changes were made both to the mail template processor and to the default mail templates themselves for the version 14.3 release and following. In the main, these changes allow an unprecedented level of control over what were previously hard-coded, non-optional internal messages sent by LISTSERV in response to various commands.

9.1 Using LISTSERV Templates

Templates are used to generate some of the mail LISTSERV sends to users in response to commands it receives. Among these are the "You are now subscribed..." message, the message sent to users when LISTSERV cannot find a subscription for them in a specified list, and others. Note that certain administrative mail (for instance, the response to the STATS and RELEASE commands) is hard-coded into LISTSERV and cannot be changed.

Other templates are used to generate the HTML code used by the web archive and administration interfaces.

A word about nomenclature: When we talk about "templates" we are talking about "files that contain one or more template forms", in other words, files like DEFAULT MAILTPL or DEFAULT WWWTPL. A "template form" is an individual section of a template which begins with a title line (three ">" symbols followed by a space, the name of the template form, and (optionally) a short description of the template, which for some template forms is also used as the subject of the mail LISTSERV constructs with the template form), followed by one or more lines of copy and/or imbedded commands, and ends at the next title line or the end of the file, whichever is reached first. A template may contain one or more template forms.

9.2 Getting Copies of the Default Template Files

LISTSERV stores its default mail template information in a file called DEFAULT MAILTPL, which can be requested by list owners and LISTSERV maintainers from LISTSERV with the `GET` command, just like any other file. The LISTSERV maintainer will find this file in LISTSERV's "A" directory (usually `~listserv/home/default.mailtpl` on unix, `LISTSERV\MAIN\DEFAULT.MAILTPL` on Windows systems, and `LISTSERV_ROOT:[MAIN]DEFAULT.MAILTPL` under VMS).

Note: DEFAULT MAILTPL contains the (obsolete) static web interface template forms.

LISTSERV stores its default dynamic web interface template forms in a file called DEFAULT WWWTPL, which can be retrieved in a manner identical to that for DEFAULT MAILTPL.

Note: It is considered unwise (and it is not supported) to modify the contents of DEFAULT MAILTPL or DEFAULT WWWTPL themselves, as these files will be overwritten by upgrades. It is possible to make sitewide changes that will not be overwritten without disturbing either of these files.

All template forms may be customized using the built-in tools found in the web administration interface described in Section 11 Using the Web Administration Interface. Edited template forms are placed in site-level or list-level template files that will not be overwritten by software upgrades.

9.3 Types of Templates

There are three different types of templates – Mail Templates, Message Templates, and Message Fragments.

9.3.1 Mail Templates

A mail template is a complete mail message. All commands are available, substitutions that make sense in the context of the specific message are available, the message may be formatted, and while other templates may be imbedded with the .IM command, the message is in and of itself ready for LISTSERV to send.

9.3.2 Message Templates

The next level down is a message template, i.e. a template that by default does not send any mail but supplies text that will ultimately be shown to the user - not always by e-mail, it could be over the web interface for instance.

Typically, message templates that are sent by mail will be "bundled" into a single message. However, a given message template can be forced to send an individual unbundled mail by using the new .SM command.

In a message template, you have the following restrictions:

- The commands .TO/.CC/.RE/.CS are not allowed unless you use .SM.
- Normally there will be limited access to formatting unless stated otherwise in the template. By "limited" is meant that you will, at a mininum, have the capability to break the text into separate paragraphs and to use .FO ON/OFF, although leading, trailing and duplicate blank lines will be removed.
- Unless stated otherwise, .QQ will suppress the message. Note that this does not mean that other related messages are also suppressed, especially if they have already been sent. .QQ only suppresses the template you are currently reading.

9.3.3 Message Fragments

The lowest level is a message fragment. It could be a list of months in French, or a common sequence of words that is put in a template not just to make other templates more readable, but to improve consistency (see &MSGREF). This fragment is used in another messages and is not itself a message, hence the following restrictions:

- .SM is not supported in message fragments (and thus other commands related to sending mail, for instance, .TO/.CC, etc. are not supported, either). If .SM is specified in a message fragment, an error similar to the following is raised in the web interface:

  >>> Mail template "MSG_SUBSCRIBE_FRAGMENT_OPTCHANGED1" does not support .SM

and no email is actually sent. In the example case, .SM would have to be specified in the message template MSG_SUBSCRIBE_SUCCESS in order for it to succeed.

- .SJ is ignored in message fragments The .SJ command should be issued in the template that sends the actual message, not in the fragment.
- Formatting (.FO ON/OFF) is not allowed. Everything will be internally merged into a single line (this is similar to what was previously called a "linear" template).
- .QQ is not supported in a message fragment.

9.4 Naming Conventions for Message Templates and Fragments

The following naming convention for message templates and message fragments has been introduced:

```
MSG_command_action_name
```

- 'command' is the name of the command. For instance, the name of a template that controls list postings starts with "MSG_POSTING_".
- 'action' is some kind of general action or category of action or the like. Every template with the same command and action SHOULD have the same calling conventions, in terms of what is allowed or not allowed, how the results are used, what global variables are available. Of course, each individual template may also have one or more variables that are specific to it. For instance, when a virus is detected, you will have the name of the virus, which is not available when "Sizelim=" is exceeded. If 'action' is something_FRAGMENT, the message is a fragment.
- 'name' is a unique identifier.

9.5 Mail Template Format and Embedded Formatting Commands

9.5.1 Mail Template Format

Each individual template form starts with a form name and subject line, such as:

```
>>> EXAMPLE1 This is the subject line
```

The following instructions are reminders for the form name and subject line:

- The template form starts with the line containing the form name and subject, and ends with the next line starting with '>>>', or at the end of the file.
- The subject line may contain substitutions (such as "&LISTNAME: &WHOM requested to join").
- Ensure that there is a blank space (ASCII 0x20) between ‘>>>‘ and the name of the form, or LISTSERV will not recognize the form.
- The names of the template forms must be typed in UPPER CASE.

A template form contains text and, optionally, formatting/editing commands, which start with a period in column 1. All other lines are treated as normal text: sequences starting with an & sign are substituted, then lines are joined together to form a paragraph, which is finally formatted like with any non-WYSIWYG text processor. You can suspend formatting with `.FO OFF` and resume it with `.FO ON`; when formatting is suspended, LISTSERV no longer joins lines to form a paragraph, but simply writes one line of text to the message for each line read from the template form. This makes it possible to include tables or a text-mode logo, but can create seriously imbalanced text if substitutions are used. For instance, a typical `&WHOM` substitution can range from a dozen characters to 60 or more, even though it only takes up 5 characters on your screen when you enter it.

9.5.2 Common Variable Substitutions

The following substitutions are always available:

- `&DATE` – Long-style date (04 Jan 1998)
- `&TIME` – hh:mm:ss
- `&WEEKDAY` – Three-letter day of the week, in English
- `&MYNAMES` – The substitution you will use most of the time when you need to refer to LISTSERV. For Internet-only or BITNET-only servers, this will display LISTSERV's only e-mail address. For servers with both Internet and BITNET connectivity, it will say "LISTSERV@hostname (or LISTSERV@nodeid.BITNET)".
- `&MYSELF` – LISTSERV's address, in the form LISTSERV@XYZ.EDU or, if no Internet hostname is available, LISTSERV@XYZVM1.BITNET.
- `&MYNODE` – LISTSERV's BITNET nodeid, without the '.BITNET', or its Internet hostname if no NJE address is available.
- `&MYHOST` – LISTSERV's Internet hostname or, if none is available, its NJE address (with '.BITNET').
- `&MBX(addr)` – Looks up the specified address in LISTSERV's signup file and displays "name <addr>" if a name is available, or just the original address otherwise. This is typically used to give the name of the command originator or target, along with his e-mail address: &MBX(&WHOM) or &MBX(&INVOKER). Please note however that &WHOM and &INVOKER are not always available in every template.

  The "addr" parameter is always required; &MBX by itself is syntactically invalid.
- `&RELEASE` – LISTSERV's release number (e.g., "15.5").
- `&OSTYPE` – The operating system under which LISTSERV is running.
- `&OSNAME` – The full operating system name including the version number, e.g., "VM/ESA 1.2.3", "Windows NT 4.0", "Linux 2.0.27", "SunOS 5.4", etc.
- `&HARDWARE` – The type of machine LISTSERV is running on, e.g., "Pentium (512M)".

The following substitutions are also available for templates related to mailing lists:

- `&LISTNAME` – Either the short or long name of the list based on the value of "List-Address=" and/or its system default. By default the long ("List-ID=") name is used if present.
- `&TITLE` – Title of the list, or empty string.

- `&KWD(kwd)` – Value of the specified keyword for the list. You do not need to specify the name of the list - it is implicit. You need not put quotes around the keyword names either, although quotes will be accepted if present. Optionally, you can specify a second numeric argument to extract just one of the terms of a list header keyword; for instance, if the list header contains "Notebook= Yes,L1,Monthly,Private", &KWD(NOTEBOOK,4) has the value "Private". A third argument, also optional, specifies the default value for the keyword in case it was not initialized. It is meant to be used for conditional formatting in the default templates and list owners should not worry about it.
- `&LITE` – Has the value 1 when running the LISTSERV Lite product, and 0 otherwise. This variable can be used to write generic templates that account for the differences between the two products.
- `&LITEFE` – Has the value 1 when running the Free Edition of LISTSERV Lite. Similar to but distinct from &LITE.
- `&ISODATE` – Returns today's date in ISO format, i.e., yyyy-mm-dd.
- `&DAYSEQ(n)` – Used to create FAQ templates with rotating topics. May also be used to create bottom banners with rotating text (e.g., for lists with multiple commercial sponsors who get "ad space" in the banner on a rotating basis).

In addition, many template forms have their own specific substitutions, meaningful only in their specific context. For instance, a message informing a user that he was added to a mailing list may have an `&INVOKER` substitution for the address of the person who issued the ADD command. This is not meaningful for a template form intended to inform a user that he must confirm his subscription to a list within 10 days, so it is not generally available. If you attempt to use a substitution which is not available, the template processor writes an error message to the mail message it is generating, but sends it anyway, in the hope that the recipient will be able to figure out the meaning of the message in spite of the error.

Important: If you need to include a sentence with an ampersand character, you will have to double it to bypass the substitution process, as in "`XYZ &&co.`"

The mail template processor also supports HTML-like variable closure, in addition to the traditional LISTSERV closure (both methods are supported concurrently; there is no need to select one over the other). For example:

- Traditional – `For more information, please send mail to &EMAIL or call &PHONE.`
- HTML – `For more information, please send mail to &EMAIL; or call &PHONE;.`

Previously, HTML writers who used HTML closure conventions would not get the expected results. This change makes it easier for webmasters to get the desired results the first time.

9.5.3 Template Commands

Any line starting with a period in column 1 is processed as a formatting command. Note that neither substitutions nor formatting commands are case sensitive. The table below lists the formatting commands that list owners may need to use.

Table 9-1 Formatting Commands for List Owners

Command	Description
`.*`	Comment: anything on this line is simply ignored. This is useful for recording changes to template files when there are multiple owners. Just add a comment line with the date and your initials every time you make a change, for the benefit of the other owners.
`.CC OFF`	Removes all "cc:" message recipients. You can also add message recipients by specifying a series of e-mail addresses after the .CC statement, as in .CC JOE@XYZ.EDU. PC mail users should note that in this context "cc:" is a RFC822 term that stands for "carbon copy". RFC822 messages may have "cc:" recipients in addition to their "primary" recipients. There is no real technical difference between the two, the "cc:" indicator just denotes a message that is being sent for your information. Some administrative messages sent to list owners are copied to the user for their information, and vice-versa; this behavior can be disabled by adding a .CC OFF statement to the template.
`.CE text`	Centers the text you specify (just the text you typed on the same line as the .CE command). This can be useful to highlight the syntax of a command.
`.FO OFF`	Turns off formatting: one template line = one line in the final message.
`.FO ON`	You can resume formatting with .FO ON or .FO RAGGed. (.FO RAGGed requires LISTSERV 1.8e-2002a or later, that is, build date of 31 October 2002 or later.)
`.FO RAGGed`	Changes right-justified text formatting to left justified text formatting. You can resume right-justified formatting with .FO ON. (.FO RAGGed requires LISTSERV 1.8e-2002a or later, that is, build date of 31 October 2002 or later.)
`.QQ`	Cancels the message. LISTSERV stops reading the template form and does not send anything. This is useful if you want to completely remove a particular message; note however that this can be confusing with certain commands, as LISTSERV may say "Notification is being sent to the list owners" when in fact nothing will be sent because of the .QQ command in the template form.
`.QU`	Ends processing of the current template as if you had reached the end, but without cancelling the message. The main purpose is to avoid multi-level nested .BB/.EB conditional blocks (see below) that are hard to keep track of.
`.RE OWNERS`	Adds a 'Reply-To:' field pointing to the list owners in the header of the generated message. Use this command when you think users are likely to want to reply with a question. You can also use .RE POSTMASTER to direct replies to the LISTSERV administrator, if this is more appropriate.
`.TO`	Replaces the default recipients of a message with the value specified. For instance, if you use the ADDREQ1 template form to send new subscribers a questionnaire, application form or similar material, you will need to add a '.TO &WHOM' instruction to your modified template form, as by default the user will not receive a copy.

A number of more advanced commands are available to list owners with more sophisticated needs and some programming experience. If you encounter one of these commands in a template, you will probably want to leave it alone.

Table 9-2 Advanced Formatting Commands for List Owners

Command	Description
`.ASIS text`	Tells LISTSERV to leave the text immediately following the .ASIS directive alone, that is, don't convert "<" and ">" characters into HTML &lt; and &gt; when creating pages. This is specifically for use in HTML templates where it is important not to convert parts of a URL reference. For instance, `.ASIS Click <a href="http://some.host.com/some-doc.html">here</a>`. As with the .CE directive, the text you intend to affect with the .ASIS directive must not wrap. The .ASIS directive will only work on text it finds on the same physical line into which it is coded.
`.BB cond`	Begin conditional block. Related commands are .EB, .ELSE, and .QU . See Section 9.5.4 Conditional Processing for usage. See also .QUIF .
`.CS text`	Define a (non standard) character set for the template in question, i.e., .CS ISO-8559-7 This setting is ignored if the template does not actually contain special characters (for instance, if the template is written in 7-bit ASCII). Otherwise the appropriate headers are created for the message in question when it is sent out.
`.DD ddname`	Copies the contents of the specified DD into the message. This is meaningful only if a DD has been set up by LISTSERV for this purpose. As a rule of thumb, you should either leave these statements unchanged or remove them.
`.EB`	End conditional block (see .BB).
`.ELSE`	Conditional ELSE directive (see .BB).
`.IM name`	Imbeds (inserts) another template form at this point in the message. This is used to avoid duplicating large pieces of text which are mostly identical, such as the templates for "you have been added to list X by Y" and "your subscription to list X has been accepted". As noted below, LISTSERV will not pick up an "imbedded" template form from $SITE$.MAILTPL. If you wish to include an "imbedded" template form (e.g., $SIGNUP) in $SITE$.MAILTPL, you must also include the template form that calls it with the .IM command.
`.QU`	Stop (i.e., QUit) processing of the current template as if you had reached the end, but without cancelling the message. The main purpose is to avoid multi-level nested .BB/.EB conditional blocks that are hard to keep track of.

Command	Description

`.QUIF`	(QUit IF) Similar to .QU, stop processing the current template without cancelling the message, based on the result of an inline conditional comparison. The full syntax is `.QUIF var operator value`
	
	For instance, `.QUIF &RC = 0`
	
	This single statement is strictly equivalent to the block
	
	`.BB &RC = 0`
	`.QU`
	`.EB`

`.SE var text`	Defines or redefines a substitution variable. This is convenient for storing temporary (text) expression results which need to be used several times. Even standard variables such as &LISTNAME can be redefined - at your own risk. You must enclose the text expression in single quotes if you want leading or trailing blanks.
`.SJ`	Set the subject line for the message. .SJ does two things: 1. It overwrites the heading originally obtained from the '>>>' header line starting the template. A mail template uses this heading as the "Subject:" field. A message template, on the other hand, does not use this heading for anything, but it is still changed internally. See .SM below. 2. It leaves an explicit indication to the template invoker that it is desired to change the subject line. For a mail template, this has already happened. For a message template, on the other hand, the invoker is strongly urged to take reasonable steps to make it happen. "Reasonable" is defined by the invoker, not by the customer. .SJ is not available for message fragments. The subject line should be set in the template that creates the actual message. One important caveat when not using .SM: Most templates are going to be for command replies. A command reply may be followed by another reply to the same command (eg multi-user ADD), or to another command. All these replies are bundled into the same e-mail message sent in answer to the command(s), again unless you use .SM. And this message can only have one subject by definition.
`.SM`	Send a copy of the message via email, if echoed to the web interface. .SM is not available in message fragments and is only available in message templates which do not contain a comment to the effect that .SM is not supported for that particular message template.
`.TY text`	Types one line of text on the LISTSERV console log. This can be useful to the LISTSERV maintainer for debugging, and also to record information in the console log.

9.5.4 Conditional Processing

LISTSERV mail templates can be programmed with an if/then/else logic that evaluates available data and performs the appropriate task depending on the outcome of the evaluation.

A conditional block begins with the command .BB (begin block) and ends with .EB (end block). In the simplest case, the boolean expression following .BB is evaluated and, if false, all the text between the .BB and .EB delimiters is skipped. For instance, from $SIGNUP:

```
.bb &DEFOPT ^= ''
Following instructions from the list owner, your subscription options
have been set to "&DEFOPT" rather than the usual LISTSERV defaults.
For more information about subscription options, send a "QUERY &LISTNAME"
command to &MYNAMES.


.eb
```

.ELSE may be specified in cases where an alternate text is required, as in this more complicated example (also from $SIGNUP):

```
.bb ((&x ^= POSTMASTER) and (&x ^= OWNER)) and (&x ^= OWNERS)
Please note that it is presently possible for
.bb &x = PUBLIC
anybody
.else
other people
.eb
to determine that you are signed up to the list through the use of the
"REVIEW" command, which returns the e-mail address and name of all the
subscribers. If you do not want your name to be visible, just issue a
"SET &LISTNAME CONCEAL" command.


.eb
```

Additionally, it is possible to simply exit a conditional at an arbitary point by using a .QU (QUit) command. For instance, the MSG_POSTING_REJECT_BAD_ATTACHMENT message template is used both to reject unwanted attachment types as well as viruses. In order to avoid processing the entire template (which contains other text that is not germane to a virus rejection), .QU is used to simply exit processing and send the message immediately.

```
.bb &VIRUS = 1
.* A virus was detected in the message. Note that this is only possible
.* for messages sent to a list, LISTSERV does not execute attachments so
.* messages sent to LISTSERV are not checked for viruses.
Your posting to the &LISTNAME list has been rejected because it contains
.bb &VIRUS_NAME ^= ''
the '&VIRUS_NAME;'
.else
a
.eb
.bb &VIRUS_FILENAME ^= ''
virus in attachment '&VIRUS_FILENAME;'.
```

```
.else
virus.
.eb
You are strongly advised to check your computer for viruses as soon
as possible!
.qu
.eb
.* text for rejecting attachments follows
```

Notes: Conditional blocks may nest to an arbitrary depth.

The expression evaluator is recursive but not very sophisticated; the restriction you are most likely to encounter is that all sub-expressions have to be enclosed in parentheses if you are using boolean operators. That is, ".BB &X = 3" is valid but ".BB &X = 3 and &Y = 4" is not.

String literals do not require quoting unless they contain blanks, but quotes are accepted if supplied.

Comparison operators are = <> ^= IN and NOT IN (the last two look for a word in a blank-separated list of options, such as a keyword value). These operators are not case-sensitive; == and ^== are available when case must be respected. Boolean operators are AND and OR.

A command line in a conditional block must be contained on one physical line and may not wrap, so be careful when sending MAILTPL files back to LISTSERV that you do not accidentally wrap long .BB lines.

The operators =* and ^=* are available to perform wildcard matches in conditional blocks. For instance JOHN_DOE@UNIX.EXAMPLE.COM =* J*DOE@*EXAMPLE.COM is a true statement. The wildcard specification is on the right-hand side whereas the actual text (or variable) you are evaluating is on the left.

9.5.5 The .QUIF Command

.QUIF (QUit IF) allows the invoker to stop processing the template if a certain condition is met, but without having to define a full-blown conditional block. For instance, the .IM command used to imbed one template into another returns a success code in the template variable &RC. If imbedding succeeds, &RC is set to 0, and something like the following is possible:

```
>>> MSG_POSTING_REJECT_BAD_ATTACHMENT Received an attachment not allowed
by "Attachments="
.* Use legacy BAD_ATTACHMENT template if present
.im *BAD_ATTACHMENT
.quif &rc = 0
.* at this point template processing stops and the message is sent if
&RC = 0
.* otherwise processing would continue with any following text.
```

"quif &rc = 0" is strictly equivalent to the block

```
.bb &rc = 0
.qu
.eb
```

9.5.6 Using 8-Bit Characters in Templates

If you include 8-bit characters (e.g., accented or national language characters) in templates, LISTSERV will automatically encode the templates on-the-fly using MIME quoted-printable encoding. While there is no guarantee that every mail program will be able to properly display 8-bit characters, those mail programs that do understand MIME quoted-printable encoding should have no trouble doing so.

9.6 Editing List-Level Default Templates

Please note that list-level mail templates are not available in LISTSERV Lite.

It is strongly recommended that the web interface customization tools be used to customize the "look and feel" of list templates. However, some administrators may wish to use the old method. If so, then simply make a copy of DEFAULT.MAILTPL on your local machine and name it listname.MAILTPL. Keep the original DEFAULT.MAILTPL around in case you make a mistake and need to start over.

At this point, you could theoretically store the listname.MAILTPL back on the LISTSERV host. However, without making any changes that would be somewhat pointless. At the very least you should edit the INFO template form before storing the template. Note also that you need only store the sections of the template that you have changed. For instance, if you edit the INFO template form but leave the rest of the template untouched, you can delete the rest of the template and store the INFO template form alone as listname.MAILTPL. The benefit to this approach is that any administrative changes to the rest of the default template are automatically applicable to your list as soon as they are made, rather than requiring that you edit your mail template individually to reflect such changes. If using the manual-editing procedure, L-Soft recommends that this approach be followed as the default.

9.6.1 The INFO Template Form

The INFO template form is LISTSERV's response to the command INFO listname. By default, it contains the following:

Figure 9-1 Default Content of the INFO Template form for DEFAULT.MAILTPL

```
 >>> INFO Information about the &LISTNAME list
There is no information file for the &LISTNAME list. Here is a copy of the
list "header", which usually contains a short description of the purpose of
the list, although its main purpose is to define various list configuration
options, also called "keywords". If you have any question about the
&LISTNAME list, write to the list owners at the generic address:

.ce &LISTNAME-Request@&MYHOST

.dd &LISTHDR
```

Note: the replaceable parameters &LISTNAME and &MYHOST. Don't change &MYHOST; LISTSERV replaces it with the correct value for the name of the host site. &LISTNAME automatically inserts the name of the list. It's probably best to use &LISTNAME to refer to the list throughout the document rather than to replace it with something like "MYLIST-L". This ensures that the template form will be consistent with the default and will be simpler to debug should a problem arise. Also, in the event the name of the list changes, it will be unnecessary to edit the template form (although it would have to be renamed to match the new name of the list, of course).

Should it be desirable to replace the default INFO template form with information about the list, it is probably best to remove the .dd &LISTHDR line. This line instructs LISTSERV to read in the header of the list and add it to the response in lieu of any other data about the list. Many list owners add descriptive comment lines to their list headers, thus this default.

Here is a minimally-edited sample INFO template form for a list called MONKEYS.[1]

Figure 9-2 Sample of an Edited INFO Template Form

```
 >>> INFO Information about the &LISTNAME list
&LISTNAME is an open, unmoderated discussion list featuring monkeys. Things
such as how to care for a pet monkey, monkey diseases, monkey lore, endan-
gered species of monkeys, and monkey psychology are likely to be discussed.
The list is NOT intended for discussion of Darwinism and/or theories of
evolution.

If you have any question about the &LISTNAME list, write to
the list owners at the generic address:

.ce &LISTNAME-Request@&MYHOST
```

9.6.2 DEFAULT MAILTPL Templates

Note: We no longer provide a complete list of template forms in this section as there are simply too many of them. Templates are listed by name and description in the customization section of the web interface.

The following are template forms that can be defined, but which are not present by default in DEFAULT.MAILTPL. If you want to define them for a particular list, the easiest way to do so is via the web interface.

- `POSTACK1` (optional) – When present, this message is sent in reply to any message posted to the list. This is very useful for creating "infobots", or just for returning a standard acknowledgement to contributors. The &SUBJECT variable contains the subject of the original message, and naturally the usual substitutions (&LISTNAME, &DATE, &TIME) are available.
- `TOP_BANNER`, `BOTTOM_BANNER` (optional) – When these template forms are present, their contents are automatically inserted at the top (respectively bottom) of each and every message posted to the list. Typically, the top banner would be used for a copyright or short legal warning which absolutely has to be seen by each and every reader. The bottom banner could contain instructions for signing off the list, a disclaimer, an acknowledgement of a sponsor's contribution, a "tip of the week", etc.

1. Thanks to Marty Hoag of NEW-LIST.

Documented Restriction: The use in banners of substitutions which do not yield a constant result (e.g., &TIME) will defeat the duplicate mail detection part of LISTSERV's loop-checking heuristics in any case where a subscriber is forwarding all mail back to the list. L-Soft advises that such substitutions never be used in a TOP_BANNER or BOTTOM_BANNER.

LISTSERV does not attempt to remove bottom banners from individual messages in digests, for instance, which have been included as quoted material in responses.

- `TOP_BANNER_HTML`, `BOTTOM_BANNER_HTML` (optional) – When these template forms are present, they will be used "as is" for HTML message parts. If absent, the regular banner is used for HTML, probably with less than 100% satisfaction.

Documented Restriction: The use in banners of substitutions which do not yield a constant result (e.g., &TIME) will defeat the duplicate mail detection part of LISTSERV's loop-checking heuristics in any case where a subscriber is forwarding all mail back to the list. L-Soft advises that such substitutions never be used in a TOP_BANNER_HTML or BOTTOM_BANNER_HTML.

- `CONTENT_FILTER` (optional) – When present, provides LISTSERV with a ruleset for message content filtering that can be configured at the list level. See Section 7.18 Content Filtering for more information on how to use content filtering.

9.6.3 Tips for Using Templates

- Many list owners require prospective subscribers to fill in a little questionnaire before being added to the list, or to explicitly state that they have read the list charter and agree to follow all rules or be removed from the list. The most convenient method, for both list owner and subscriber, is to have the SUBSCRIBE command return a copy of the questionnaire (or list charter, etc.), and not forward the request to the owner. The user answers the questions and returns them directly to the list owner, who then adds the subscriber manually. Naturally, it is more convenient for the user if this information arrives in a separate message, with a 'Reply-To:' field pointing to the list owner's address. Thus, you should not use the SUB_OWNER template form for this purpose, because it is a linear template form and does not give you any control over the 'Reply-To:' field. The SUB_OWNER template form could be modified to read "A copy of the list charter is being sent to you, please read it carefully and follow the instructions to confirm your acceptance of our terms and conditions." The list charter would then be sent separately, through the ADDREQ1 template form. You would use the .RE OWNERS command to instruct LISTSERV to point the 'Reply-To:' field to the list owners, and .TO &WHOM to change the destination from list owner to subscriber. If you want to receive a copy of the message, you can use .TO &WHOM cc: xxx@yyy.
- When writing template forms, it is a good idea to use substitutions (&XXXX) for information which may change in the future. In particular, it is not uncommon for lists to have to be moved from one host to another, and this will be a lot easier if the template forms use substitutions for the list address and list host. The &LISTADDR substitution translates the full address of the list (XYZ-L@XYZ.COM), whereas

&LISTNAME is just the name (XYZ-L). For references to the server and host, use &MYHOST for the Internet hostname, &MYSELF for the server address (normally LISTSERV@&MYHOST), and &OWNER for the xxx-request mailbox address. These substitutions are "universal" and can be used in all template forms. For instance, if you decide to make a bottom banner with instructions for leaving the list, the text could read: "To leave the list, send a SIGNOFF &LISTNAME command to &MYSELF or, if you experience difficulties, write to &OWNER."

9.7 Using the DAYSEQ(n) Function

The `DAYSEQ(n)` function is quite powerful. This function allows the list owner to code template forms (such as the `PROBE1` or `BOTTOM_BANNER` messages) that change or "rotate" automatically.

The `DAYSEQ(n)` function is invoked in a `.BB - .EB` conditional block, and n corresponds to the number of days in the rotation period, i.e., to the number of variations that you want to make to the text of the message. `&DAYSEQ(n)` returns a number from 1 to n which increases by 1 every day, with no special regard for weekends. That is, if the rotation period is to last for a week, you code `DAYSEQ(7)`. If the rotation period is 15 days, you code `DAYSEQ(15)`. Two examples follow:

9.7.1 Rotating Bottom Banner

To create a rotating bottom banner, follow this example. A list has three commercial sponsors, each of whom are provided with an advertisement every three days. (Note that this doesn't take weekends into account; in this example, if company A is featured in the banner on Monday, it will be featured again on Thursday and then again on Sunday. However, in the following week it will be featured on Wednesday, Saturday, and Tuesday, so it will actually get rather good coverage.) Our `BOTTOM_BANNER` template form would look like this:

```
>>> BOTTOM_BANNER
.BB &DAYSEQ(3) = 1
Today’s copy of the &LISTNAME newsletter has been brought to you by Company A.
.EB
.BB &DAYSEQ(3) = 2
Today’s copy of the &LISTNAME newsletter has been brought to you by Company B.
.EB
.BB &DAYSEQ(3) = 3
Today’s copy of the &LISTNAME newsletter has been brought to you by Company C.
.EB
```

If a company needs to get a higher percentage of "air" time than another, you can simply assign it more than one of the possible n values of &DAYSEQ(n). For instance, if you have two companies but one should get twice as many days of "air" time, you might code something like this:

```
>>> BOTTOM_BANNER
.BB (&DAYSEQ(3) = 1) OR (&DAYSEQ(3) = 3)
Today’s copy of the &LISTNAME newsletter has been brought to you by Company A.
.EB
.BB &DAYSEQ(3) = 2
Today’s copy of the &LISTNAME newsletter has been brought to you by Company B.
.EB
```

This would cause Company A's message to appear on days 1 and 3 of the rotation period and Company B's message to appear on day 2 only.

9.7.2 Rotating FAQ via the PROBE1 Template and "Renewal= xx-Daily"

Subscription renewal can be coded with daily granularity (however, please note that it is and remains inadvisable to use renewal intervals of less than a week). If you further code subscription probing into the "Renewal=" keyword with the ",Probe" parameter, you open up the possibility of turning the standard PROBE1 template form into a periodic FAQ. Here's how:

We'll assume to start that you will code "Renewal= 15-Daily,Probe" in your list header. (You can experiment with other numbers, but since we have two messages and will be using &DAYSEQ(2), we need an odd renewal period.) We'll also assume that you want to send two versions of your FAQ each month; the first, a complete FAQ document, and the second, an abbreviated "reminder" version that just contains information about how to sign off, how to post to the list, and so forth. The basic algorithm is therefore:

When `&DAYSEQ(2) = 1`, send the full FAQ.
When `&DAYSEQ(2) = 2`, as it will 15 days later, send the abbreviated FAQ.

Your `PROBE1` template form would thus look like this:

```
>>> PROBE1 Periodic FAQ posting for &LISTNAME
&WEEKDAY, &DATE &TIME
.BB &DAYSEQ(2) = 1
This is the complete FAQ for &LISTNAME. Please read it and keep a copy
for future reference. A FAQ document for &LISTNAME is distributed every
15 days, the full FAQ alternating with a shorter "reminder" FAQ.


<body of the full FAQ document>
.EB
.BB &DAYSEQ(2) = 2
This is the abbreviated FAQ for &LISTNAME. Please read it and keep a
copy for future reference. A FAQ document for &LISTNAME is distributed
every 15 days, the full FAQ alternating with a shorter "reminder" FAQ.


<body of the abbreviated FAQ document>
.EB
```

9.7.3 Calculating the Value for DAYSEQ()

When you first start using a rotating banner with the &DAYSEQ variable, the `&DAYSEQ(n)= 1` period begins based on the number of days elapsed since a baseline. On VM (and in REXX generally) you can calculate today's value easily with:

```
/* */
say Date('B') + 1
```

If you do not have access to a REXX interpreter, Date('B') is described as "the number of complete days (that is, not including the current day) since and including the base date, 1 Jan 0001, in the format 'dddddd' (no leading zeros or blanks)."[1] It also is equal to the C language expression time(0)/86400 + 719162 or, for OpenVMS users, to the Smithsonian base date plus 678575.

For example, for Friday 22 Oct 2004, the value of `Date('B')` + 1 is 731876. This value increases by one every day at midnight.

9.8 Storing the <listname>.MAILTPL File on the Host Machine

The procedure differs slightly on VM systems, but the following will work for unix, VMS and Windows systems:

1. Get a copy of DEFAULT.MAILTPL and edit it.
2. Be sure that you have defined a "personal password" to LISTSERV with the PW ADD command before you `PUT` the template file. If you have done this but can't remember the password, send a `PW RESET` command to LISTSERV, then a new `PW ADD` command.
3. Send the file to LISTSERV with a `PUT` *`listname`* `MAILTPL PW=XXXXXXXX` command at the top of the file, just as if you were storing the list itself. Replace `XXXXXXXX` with your personal password.

The variation for VM systems is that the LISTSERV maintainer will have to create a fileid for the file before it can be PUT on the server and seen by LISTSERV.

Note: The LISTSERV maintainer can create and edit these files in place with any standard text editor. Changes made to template files in this way are available to LISTSERV immediately after they are saved.

9.9 DIGEST-H and INDEX-H Template Files

Two other template files that are available pertain to the automatic “digestification” feature. You may create and store files called listname DIGEST-H and listname INDEX-H. These files define custom digest headers and custom index headers, respectively. The DIGEST-H and INDEX-H files are plain text files, like the WELCOME and FAREWELL files, and the instructions for storing them on the server are identical. Note that, as with the WELCOME and FAREWELL files, you cannot use the template formatting commands and replaceable parameters discussed above.

Figure 9-3 Typical Contents of a DIGEST-H or INDEX-H File

```
The MYLIST list is sponsored by ABig Corporation.

See http://www.abig.com for information on ABig Corporation's products.
```

The contents of DIGEST-H and INDEX-H are appended to the digest or index, respectively, immediately following the list of topics.

Notes: The INDEX-H output would be similar to the figure below, following the list of postings.

You can’t add a digest or index “footer” because according to the standard, anything after the end of the digest text is supposed to be discarded.

1. Cowlishaw, Michael: The REXX Language: A Practical Approach to Programming, 2nd ed., p.92. Englewood Cliffs, NJ: Prentiss-Hall, Inc., 1990.

Figure 9-4 Sample DIGEST Output for a List with a DIGEST-H File

```
Date: Tue, 11 Jun 2001 11:52:41 -0500
From: Automatic digest processor <LISTSERV@MYHOST.COM>
Reply-To: My test list <MYLIST@MYHOST.COM>
To: Recipients of MYLIST digests <MYLIST@MYHOST.COM>
Subject: MYLIST Digest - 10 Jun 2001 to 11 Jun 2001

There is one message totalling 10 lines in this issue.

Topics in this issue:

  1. Testing 125...3 sir!

The MYLIST list is sponsored by ABig Corporation.

See http://www.abig.com for information on ABig Corporation's products.
```

9.10 WWW Interface Templates and Template Forms

The following describes the available template files and their respective template forms for the WWW archive and administration interface. L-Soft does not advise modifying these templates unless you know exactly what you are doing. If you modify the templates it is strongly recommended that you keep copies of the originals in a safe location for fall-back. In practice, this means that you should NEVER edit the default template files themselves.

9.10.1 Web Forms (Static) Contained in DEFAULT MAILTPL

Note: We no longer provide a complete list of template forms in this section as there are simply too many of them. Templates are listed by name and description in the customization section of the web interface.

9.10.2 The WWW_ARCHIVE.MAILTPL File

In LISTSERV 14.3, this file became obsolete. LISTSERV will migrate existing templates from WWW_ARCHIVE MAILTPL to SITE MAILTPL, unless one of the following conditions arises:

- A conflicting template (same name, different contents) is already in SITE MAILTPL.
- The copy of the template in WWW_ARCHIVE matches the first template in the system search order.

If there are no conflicts, WWW_ARCHIVE MAILTPL is then renamed to WWW_ARCHIVE OLDTPL. If a conflict is detected, LISTSERV will not attempt to determine which version of the template is "correct", but rather will log something like the following:

```
7 Oct 2004 10:57:05 Migrating templates from WWW_ARCHIVE to SITE...
- $TEST_TEMPLATE: conflicting version found in SITE
7 Oct 2004 10:57:05 Conflicts detected, finish migration manually
```

It is then incumbent on the site maintainer to harmonize the differing versions of any templates reported to be in conflict.

9.10.3 The DEFAULT.WWWPTL File (Dynamic Templates)

The DEFAULT WWWPTL file contains the default templates for the parts of the WWW archive interface that are not defined in DEFAULT MAILTPL. Unless you have specific issues that need to be resolved (such as a national language preference or a need to point certain links to non-standard locations), it is strongly recommended NOT to edit this file. One reason for this is that DEFAULT WWWTPL will be overwritten by a software update. The safest approach to customizing the look and feel of your site is to use the customization features built into the web interface, which save your customizations in a different place.

When customizing these templates, there are two fundamental differences between them and the templates in DEFAULT MAILTPL:

1. Any substitution variable that you use (for instance, &LISTNAME) must be escaped with a "+" symbol between the ampersand and the name of the variable, thus: &+LISTNAME. (Note that, as with the regular mail template forms, not all substitution variables are available in every HTML template form.)
2. Any dot-formatting command you use (for instance, .CC , .BB , etc.) must have a "+" symbol rather than the dot, thus: +CC +BB

Note: We no longer provide a complete list of template forms in this section as there are simply too many of them. Templates are listed by name and description in the customization section of the web interface.

9.10.4 The SITE.WWWTPL File

The preferred method of editing site.wwwtpl is to use the web interface's built-in customization features to edit templates. L-Soft no longer recommends editing site.wwwtpl by hand.

However, if desired, you can override the default.wwwtpl file by providing a customized site.wwwtpl file in LISTSERV's A directory.

The site.wwwtpl file is the file in which edited web templates are placed. This prevents your site-wide definitions being overwritten in an upgrade (i.e., when default.wwwtpl will normally be overwritten). If a given template is found in site.wwwtpl, that version of the template takes precedence over the one found in default.wwwtpl. This means that you don't have to duplicate every template form in default.wwwtpl, just the ones you don't want overwritten by an upgrade.

Note: For list-level templates, site.wwwtpl will itself be overridden by definitions in any listname.wwwtpl files you have installed.

9.10.5 National Language Template Files (idiom.mailtpl)

National language templates can be written and used with LISTSERV (L-Soft does not provide them). The use of such templates is optional and governed by two settings:

- **Site-wide** – The `DEFAULT_LANGUAGE=` site configuration variable allows you to set the site-wide national language template for use by all lists on the server. By default this variable is unset and DEFAULT MAILTPL is used.
- **List-level** – The `Language=` list header keyword can be used to specify a national language template to be used for a particular list, for instance a Spanish-language list on an otherwise English-language server.

To create a national language template, you simply copy DEFAULT MAILTPL to *idiom* MAILTPL , where *idiom* is the name of the language, and translate it as desired. You also use idiom to specify the value for `DEFAULT_LANGUAGE=` and/or `Language=`. For a given language you can specify anything you want for *idiom*; in other words LISTSERV does not care if you call the file FRANCAIS MAILTPL or FRENCH MAILTPL, but if you do call it FRENCH MAILTPL you must specify FRENCH as the *idiom*, and likewise, if you call it FRANCAIS MAILTPL you must specify FRANCAIS as the *idiom*. LISTSERV has no information about what a given language is called, it simply looks for a MAILTPL file for the idiom data supplied.

If you are going to translate the web interface template forms into *idiom* as well, you will need to copy DEFAULT WWWTPL to idiom MAILTPL and again, translate as desired. This requires that you add a special template form to WWW_ARCHIVE MAILTPL, so that the 'wa' CGI script will know what to look for, as follows:

```
>>> LANGUAGE
idiom
```

where *idiom* is, of course, the same value we've been talking about above. For instance for a FRANCAIS idiom you'd use

```
>>> LANGUAGE
FRANCAIS
```

See Section 9.3.1 Mail Templates regarding the use of 8-bit characters in template forms.

9.10.6 Template Precedence

For template forms found in DEFAULT MAILTPL, the following precedence is used when LISTSERV searches for a given template form:

```
listname MAILTPL
idiom MAILTPL
WWW_ARCHIVE MAILTPL[1]
DEFAULT MAILTPL
```

That is to say, if LISTSERV needs a copy of the ADD1 mail template form, it will look first in the listname.mailtpl file for the list in question. If no such file exists, or if ADD1 is not present in listname.mailtpl, LISTSERV will look in idiom.MAILTPL (if Language= or DEFAULT_LANGUAGE= is set to idiom). Again, if the ADD1 form is not present in idiom.mailtpl, or if idiom.mailtpl does not exist, LISTSERV will then look in default.mailtpl (www_archive.mailtpl is skipped because ADD1 is not a web template form) and pull out the default ADD1 template form.

For template forms found in DEFAULT WWWTPL the precedence is:

```
listname WWWTPL
idiom WWWTPL
SITE WWWTPL
DEFAULT WWWTPL
```

The same sequence of events applies as for the MAILTPL files, except that SITE WWWTPL is never skipped (all template forms in the WWWTPL files are web forms).

1. WWW_ARCHIVE MAILTPL is searched only for web-related template forms and is bypassed for mail template forms. For instance WWW_ARCHIVE MAILTPL will not be searched for ADD1 but will be searched for WWW_INDEX.

9.11 Serving Up Custom Web Pages for your List

This feature is not available in LISTSERV Lite.

Originally in order to serve up custom or special web pages for a list it was necessary to construct those pages as HTML files and place them either into the /archives directory or link them from somewhere else. This was sometimes impossible for list owners who had no administrative access to the server's web directories or who had no other place from which to serve web pages.

It is possible to add ad-hoc web page templates by creating new (non-standard) template forms and enabling their display by setting a special variable value, SHOWTPL_ALLOWED, in the template form. For instance, one could set up a page with special administrative information, the list charter, netiquette information, or the like, and serve it and maintain it directly from the LISTSERV web template interface without need for any other access to the server.

9.11.1 A Practical Example: ADMIN_POST

The author used to serve up an administrative posting via FTP back in the days when his lists lived on a server that had FTP access to the archive notebooks. When FTP access to the server was cut off due to security concerns, he had to find another way to serve the information via the web. Here is how it was done:

(The following example assumes that you have the 1.8e web administration interface installed. New template forms cannot be created this way in previous versions.)

First, log into the web administration interface. Choose the list for which you will be making a new page, and then click the **[Templates]** button to enter the mail and web template editing area. Since the template you will be creating is a web template, click the **[Switch to WWW templates]** button to change modes.

Next, type the name of the new template form into the box provided, and click **[Create]**. The Edit List Template screen opens with the command response

```
The ADMIN_POST form has been successfully stored in the TEST
template library.
```

In the **Description** box, type a description of the template, for example, "Administrative information page".

In the large text box provided for the template text, first type the following line:

```
+SE SHOWTPL_ALLOWED 1
```

This line tells LISTSERV that it is allowed to serve the page on the web. If the line is not found, the template will not be available.

Following this line you can start adding your HTML. However note carefully that you cannot override the default headers and footers that have already been defined by other template forms in the library. You can start with a <title></title> block but it will be followed by the pre-defined header and then by your HTML.

After adding your HTML, click **[Update]**, and the template form will be stored. The URL for the page you are defining in this example will be http://your_server_hostname/path_to_wa?SHOWTPL=ADMIN_POST&L=listname (the parameters for 'wa' are case-sensitive and must be sent in upper case). For instance, the author's version of the ADMIN_POST template form can be viewed at http://peach.ease.lsoft.com/scripts/wa.exe?SHOWTPL=ADMIN_POST&L=VISBAS-L.

Section 10 Solving Problems

10.1 Helping Subscribers Figure Out the Answers

Depending on your own preferences, some requests from subscribers for operations that they can perform for themselves can be fulfilled by you as the list owner or by the subscribers with some coaching from you. While it is a negative approach, the list owner can never assume that the subscriber reads or saves the materials sent to him at the time of subscription. Therefore, you will have to deal on a regular basis with users who ask how to unsubscribe, or how to get archive files, or how to set their subscription to DIGEST or NOMAIL.

Often these requests for help are posted directly to the list. The proactive approach to this problem is to do one or both of two things:

- Respond to the list with the answer so that all can benefit
- Respond privately to the subscriber with the answer if it has been posted repeatedly

If a user asks a question about a topic that has been discussed previously, you might suggest in a tactful way that the answer can be found in the archives. If your host server supports the LISTSERV database functions, you might even include a sample DATABASE JOB that the user can "clip and send" to LISTSERV.

Often it is tempting to simply "get things over with" and take care of the user's request in many cases – the user wants to be set to NOMAIL because he's going on vacation, the user wants off the list, etc. – but while this solves the short-term problem, it doesn't teach the user anything. Naturally it takes more time to be a coach than it does to be the all-powerful list administrator, but the goodwill you can create by being proactive rather than reactive outweighs the convenience of simply sending the command yourself. You will find that many subscribers appreciate the fact that someone takes the time to explain the complexities of LISTSERV to them.

In order to cut down on the time it takes to respond in "coaching" situations, many list owners prepare "boilerplate" files with the answers to common questions that they can simply "cut and paste" into return mail. (Several such "boilerplate" files are included in Appendix C.)

10.2 Loop-Checking Can Cause Occasional Problems with Quoted Replies

(See Section 4.7.5 "Sender:", "From:", or "Reply-To:" Fields in Body Causes Bounce for additional information.)

By default, LISTSERV's internal loop-checking routines look for anything in the body of a mail message that looks like a header line – specifically anything that looks like a "To:", "Sender:", or "Reply-To:" header line. If it finds anything like this, LISTSERV intercepts the message and sends it to the list owner (or the person(s) designated by the "Errors-To=" keyword) as an error.

Often a user who replies to list mail includes all or part of the message he is replying to as part of his reply ("quoting"). While this is a questionable practice to begin with, unfortunately a number of popular mail programs make it worse by including the quoted message in its entirety (including header lines) in the body of the reply. For instance, the following message ended up in the author's error mailbox:

Figure 10-1 Sample of an Error Message with Headers Included

```
The enclosed message, found in the ACCESS-L mailbox and shown under the spool
ID 6305 in the system log, has been identified as a possible delivery error
notice for the following reason: "Sender:", "From:" or "Reply-To:" field
pointing to the list has been found in mail body.
------------------------ Message in error (42 lines) ---------------------
----
Received: by access.mbnet.mb.ca id AA05697
 (5.67b/IDA-1.4.4 for Microsoft Access Database Discussion List
<ACCESS-L@peach.ease.lsoft.com>); Wed, 1 Mar 1995 10:26:29 -0600
Date: Wed, 1 Mar 1995 10:26:29 -0600
From: xxxxxx xxxxxxxxx <xxx@MBNET.MB.CA>
Message-Id: <199503011626.AA05697@access.mbnet.mb.ca>
To: Microsoft Access Database Discussion List
Message-Id: <199503011626.AA05697@access.mbnet.mb.ca>
To: Microsoft Access Database Discussion List
<ACCESS-L@PEACH.EASE.LSOFT.COM>
Subject: Re:      Re: Foxpro listserv address
X-Mailer: AIR Mail 3.X (SPRY, Inc.)


<---- Begin Included Message ---->
Date:         Thu, 23 Feb 1995 01:17:36 -0500
From: xxxxxxx@xxx.com
Sender: Microsoft Access Database Discussion List
              <ACCESS-L@peach.ease.lsoft.com>
Subject:      Re: Foxpro listserv address
To: Microsoft Access Database Discussion List
              <ACCESS-L@peach.ease.lsoft.com>
>BTW, I don't know why she is still on Foxpro, I thought they went out into
>the desert??
<---- End Included Message ---->
(subscriber's reply deleted)
```

The problem with this reply was two-fold, from a list owner's standpoint. First (a netiquette issue), the sender didn't bother to remove unnecessary header lines from his reply. If properly formatted, however, this would not normally cause an error.

Second, the mail software he was using didn't include ">" characters at the beginning of every line of the included message. Had it done so, the message would have passed through LISTSERV unhindered.

One variation on this error is mail software that quotes messages by adding the ">" character followed by a space for esthetic reasons. For instance, using the above error as an example:

Figure 10-2 Another Sample of an Error Message with Headers Included

```
> Date:         Thu, 23 Feb 1995 01:17:36 -0500
> From: xxxxxxx@xxx.com
> Sender: Microsoft Access Database Discussion List
              <ACCESS-L@peach.ease.lsoft.com>
> Subject:      Re: Foxpro listserv address
> To: Microsoft Access Database Discussion List
              <ACCESS-L@peach.ease.lsoft.com>
> BTW, I don't know why she is still on Foxpro, I thought they went out
> into the desert??
```

This won't work either. Generally this is a client configuration problem and it can be fixed by setting the quoting character in the client's configuration file.

On the other hand, the following quote would have worked:

Figure 10-3 A Correctly Formatted Message with Headers Included

```
>Date:         Thu, 23 Feb 1995 01:17:36 -0500
>From: xxxxxxx@xxx.com
>Sender: Microsoft Access Database Discussion List
              <ACCESS-L@peach.ease.lsoft.com>
>Subject:      Re: Foxpro listserv address
>To: Microsoft Access Database Discussion List
              <ACCESS-L@peach.ease.lsoft.com>
>BTW, I don't know why she is still on Foxpro, I thought they went out
>into the desert??
```

The ultimate solution to the problem is to warn subscribers to limit their quoting to a minimum, and in any case to be sure to delete anything that looks like a header line in the body of their reply.

10.3 User Can't Unsubscribe and/or Change Personal Options

See Section 4.2 Finding Users Who Do Not Appear in the List for details.

10.4 Firewalls

Firewalls on the Internet are set up for essentially the same reason firewalls are designed into buildings and automobiles – to keep dangerous things (in this case, hackers, viruses, and similar undesirable intruders) from getting in and wreaking havoc with sensitive data. Unfortunately, they don't always keep people from behind them from sending mail out, and this can cause problems when users from such sites attempt to subscribe to lists.

If your list is set to confirm all subscriptions with the "magic cookie" method (`"Subscription= Open,Confirm"`), you will receive an error message any time a user from a firewalled site attempts to subscribe, since the "cookie" confirmation message will bounce off the firewall. If your list is not set to confirm subscriptions, the same user will be able to subscribe to your list but all mail sent to him will bounce.

Some firewalls reportedly can recognize "friendly" LISTSERV mail and let it through, but because of security considerations, it is unlikely that this problem will ever completely go away. Thankfully it does not seem to be a major cause of mailing list errors.

10.5 LISTSERV Won't Store Your List

LISTSERV expects list files to be delivered to it without any formatting characters (excluding, of course, the carriage return-line feed at the end of each line). This can cause a problem if you try to store the entire list (header and subscribers) using a mail client that inserts line-wrap characters into text longer than 80 columns. Specifically, one client that does this is Pine; others that can cause problem are cc:Mail and just about any Windows POP client.

There are a couple of ways to get around this problem.

1. Don't get the entire list if all you're going to do is edit the header. Use the `GET` *`listname`* `(HEADER` syntax to get the header only, and use the `ADD` and `DELETE` commands to manipulate the subscriber list. This is the preferred method.
2. If you have to get the entire list, e.g., in order to delete a subscriber manually, use a client that does not wrap text (or turn off line wrap if possible). If you are on a unix system that has mailx installed, you can store a list from the command line with the command syntax

   ```
   mailx listserv@host < listfile
   ```

Note: L-Soft does not recommend hand-editing the subscriber list; it is preferable to use wildcards to delete problem addresses, and using an editor to do this should always be the last resort.

3. If all else fails, you can use a public-domain utility called LB64 to convert the list file into a base-64 command JOB that LISTSERV will understand. This utility is generally available from the VM LISTSERV sites; send a `GET LB64 C` command to `LISTSERV@LISTSERV.NET` if you can't find it anywhere else.

Note: This is an unsupported utility. You will need to compile it with a C compiler (not supplied). The utility is primarily for users on unix systems, although with two minor modifications it can also be used on 32-bit Windows systems.

10.6 If I can't find the answer, where do I turn?

Two LISTSERV lists exist for list owner and LISTSERV maintainer questions.

- LSTSRV-L is the LISTSERV give-and-take forum. Its primary mission is to provide assistance to LISTSERV maintainers, but it can also be of interest to list owners who desire a more in-depth knowledge of the workings of the system. To subscribe to LSTSRV-L, send your subscription request to LISTSERV@LISTSERV.NET.
- LSTOWN-L is the LISTSERV list owners' discussion list, where list owners can get assistance on list maintenance and other aspects of list ownership. To subscribe to LSTOWN-L, send your subscription request to LISTSERV@LISTSERV.NET.

Section 11 Using the Web Administration Interface

LISTSERV's Web Administration Interface makes LISTSERV administration significantly easier, and lets you change many LISTSERV site configuration settings "on the fly", although some changes may still require a restart of the server before they are recognized.

Most sites will be able to upgrade to LISTSERV 15.5 without losing local web customizations, although this is not optimal and will not generally expose new features to your users. To assist you in customizing the LISTSERV 15.5 web interface, L-Soft has produced a Customization Manual, which is available in PDF format at the following location: http://www.lsoft.com/resources/manuals.asp

Since the comprehensive guide takes you through the whole gamut of interface customization, this section will concentrate solely upon a basic understanding of the new features of the interface.

The LISTSERV 15.5 Web Interface requires JavaScript to be enabled by default. However, those who prefer not to use JavaScript can set their Navigation Style user preference to "Non-Script Navigation" in the Preferences menu.

Virtually all list management operations can be accomplished via this interface, which is tied into LISTSERV's own password manager for security.

Note: This interface cannot be used to manage lists that are coded `Validate= Yes,Confirm,NoPW` or `Validate= All,Confirm,NoPW` because passwords are not accepted for validation in those cases.

11.1 The Default LISTSERV Home Page

The default home page for LISTSERV typically is reached by using the URL:

- On unix: `http://yourhost.domain/cgi-bin/wa`
- On VMS: `http://yourhost.domain/htbin/wa`
- On Windows: `http://yourhost.domain/scripts/wa.exe` or `http://yourhost.domain/cgi-bin/wa.exe`

Of course this is not standardized; the location of the 'wa' script is determined by the value of `WWW_ARCHIVE_CGI` in LISTSERV's site configuration file. In any case, invoking 'wa' without any parameters returns the default home page.

11.2 Logging In

You can log into the list administration interface from any list's main web archive index page (assuming that this link has not been removed by the list owner; it exists in the WWW_INDEX mail template by default). The interface may also be reached by a link from the default LISTSERV home page mentioned in Section 11.1 The Default LISTSERV Home Page.

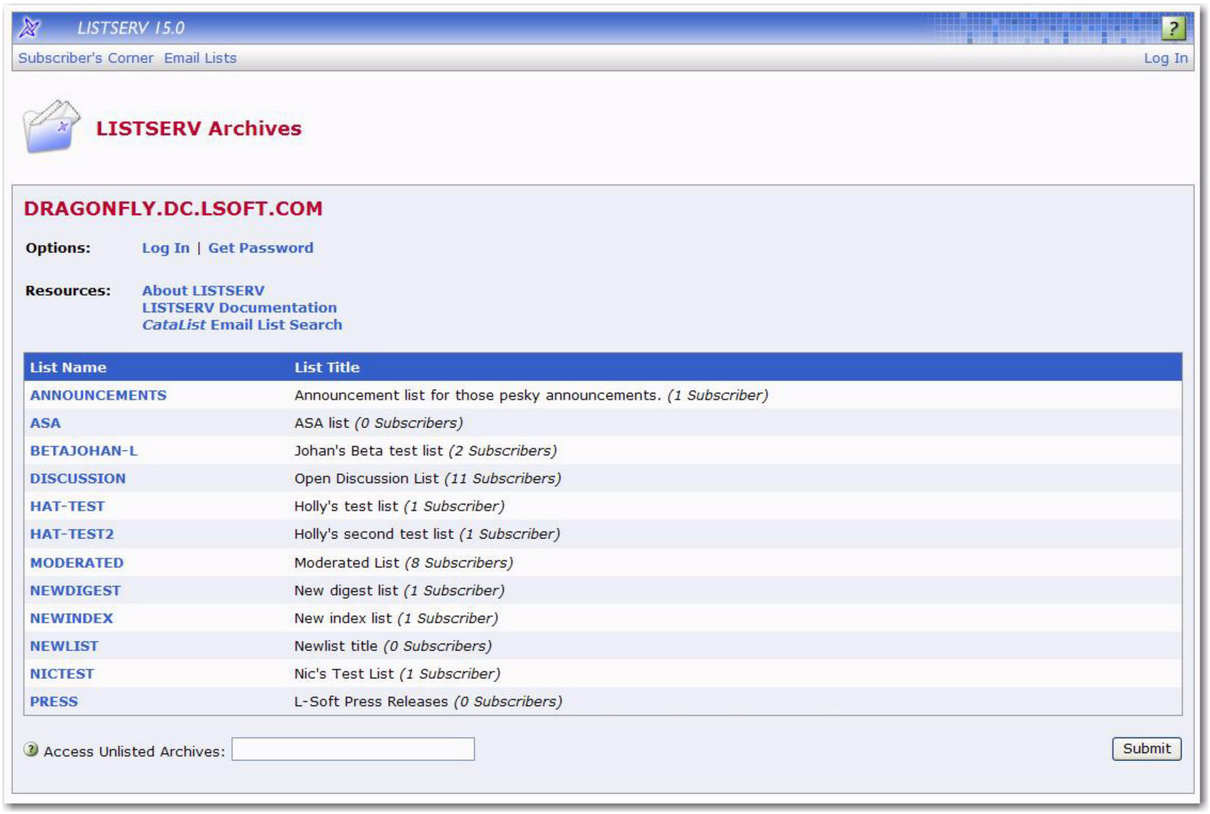
To access the list administration interface without a link, you point your web browser to the "wa" script. Typically the interface is accessed as follows:

- On unix: http://yourhost.domain/cgi-bin/wa

- On VMS: http://yourhost.domain/htbin/wa
- On Windows: http://yourhost.domain/scripts/wa.exe or http://yourhost.domain/cgi-bin/wa.exe

and by default, users are directed to the main archives page for the server.

Figure 11-1 LISTSERV Archives Screen



LISTSERV Archives

DRAGONFLY.DC.LSOFT.COM

Options: Log In | Get Password

Resources: About LISTSERV
LISTSERV Documentation
CataList Email List Search

List Name	List Title
ANNOUNCEMENTS	Announcement list for those pesky announcements. *(1 Subscriber)*
ASA	ASA list *(0 Subscribers)*
BETAJOHAN-L	Johan's Beta test list *(2 Subscribers)*
DISCUSSION	Open Discussion List *(11 Subscribers)*
HAT-TEST	Holly's test list *(1 Subscriber)*
HAT-TEST2	Holly's second test list *(1 Subscriber)*
MODERATED	Moderated List *(8 Subscribers)*
NEWDIGEST	New digest list *(1 Subscriber)*
NEWINDEX	New index list *(1 Subscriber)*
NEWLIST	Newlist title *(0 Subscribers)*
NICTEST	Nic's Test List *(1 Subscriber)*
PRESS	L-Soft Press Releases *(0 Subscribers)*

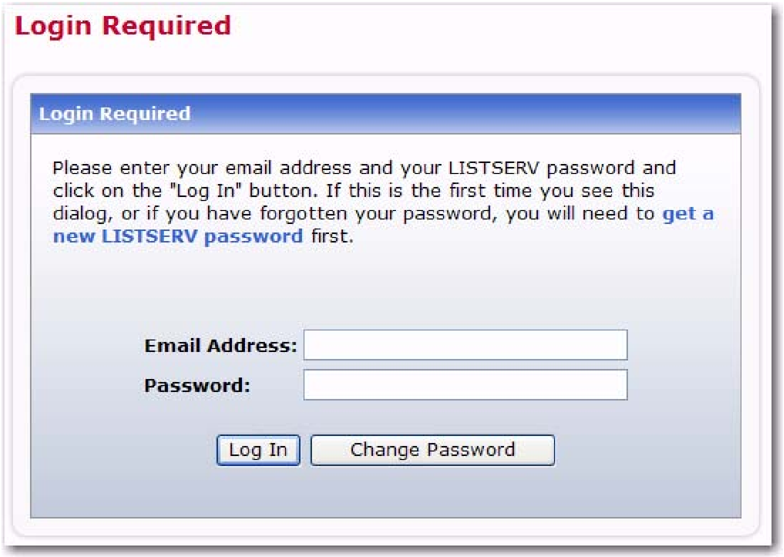
To get to the administrative pages, you will have to log in. If you already have a personal LISTSERV password, then you will simply log in with your existing userid and password.

If you login with the "save my password in a cookie" method, LISTSERV will issue you a cookie that allows you to bypass this login screen (and incidentally to stay logged into the interface for longer than 15 minutes without having to log in again when your session expires). This option is, however, only recommended for people who have physically secure machines (for instance, on your machine at home or in your office) or who are able to otherwise keep unauthorized users from logging in since LISTSERV cannot tell who is using the cookie. Specifically, if your browser does not support separate configurations or bookmark files for different users, you should not use the cookie method in a workplace environment.

Notes: There is a known bug in Netscape prior to version 4.0 that allows you to see the userid and password typed into the text boxes if you back up to the login page using the "Back" arrow.

The userid you use here must be associated with the personal password you have from LISTSERV. If you have registered a password as joe@unix.host.com and try to log in here as joe@host.com with that password, LISTSERV will reject your login.

Figure 11-2 Login Screen



Login Required

Login Required

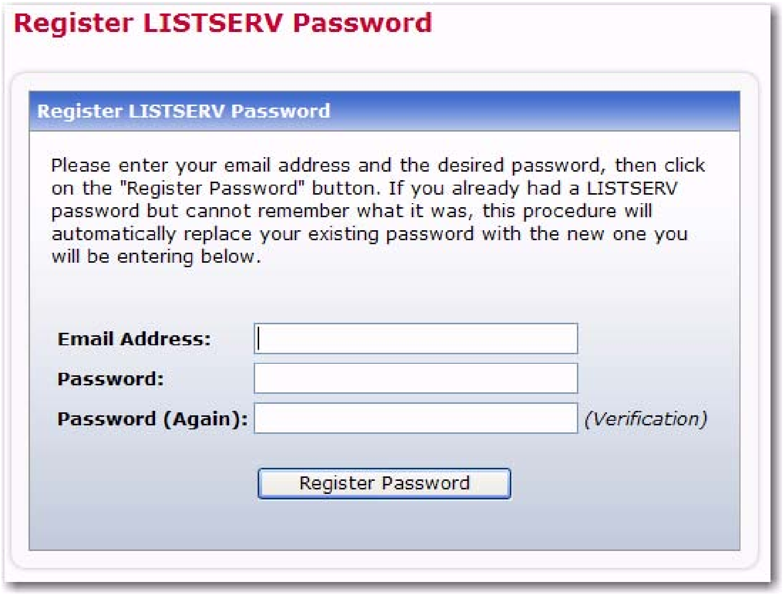
Please enter your email address and your LISTSERV password and click on the "Log In" button. If this is the first time you see this dialog, or if you have forgotten your password, you will need to **get a new LISTSERV password** first.

Email Address:	
Password:	

11.3 Setting a LISTSERV Password

If you do not already have a personal LISTSERV password (set with the `PW ADD` command or via the Web Interface) or cannot remember your password, you need to define one now. If you choose to do this via the Web Interface, simply click the **<u>Get a New LISTSERV Password</u>** link. The Register LISTSERV Password screen opens.

Figure 11-3 Registering a LISTSERV Password



Register LISTSERV Password

Register LISTSERV Password

Please enter your email address and the desired password, then click on the "Register Password" button. If you already had a LISTSERV password but cannot remember what it was, this procedure will automatically replace your existing password with the new one you will be entering below.

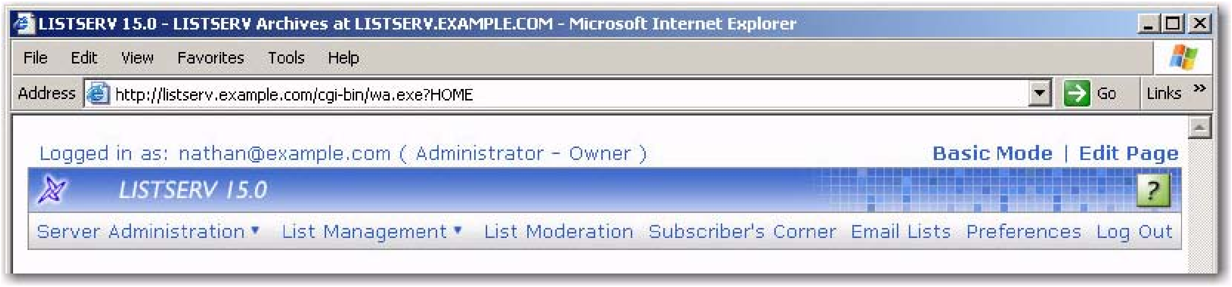
Email Address:		
Password:		
Password (Again):		*(Verification)*

Enter your email and password. Confirm the password by entering it again, and then click the **[Register password]** button. When your password registration is accepted, a confirmation email will be sent to you. You will have to activate your password by responding to the email (or clicking the link it contains).

11.4 Logging In and Setting Preferences

When you log in for the first time, you will be returned to the main list archives page, but with a difference: the top toolbar will have a lot more options.

Figure 11-4 Web Interface Toolbar


LISTSERV 15.0 - LISTSERV Archives at LISTSERV.EXAMPLE.COM - Microsoft Internet Explorer
File
Edit
View
Favorites
Tools
Help
Address
http://listserv.example.com/cgi-bin/wa.exe?HOME
Go
Links
Logged in as: nathan@example.com (Administrator - Owner)
Basic Mode | Edit Page
LISTSERV 15.0
Server Administration
List Management
List Moderation
Subscriber's Corner
Email Lists
Preferences
Log Out

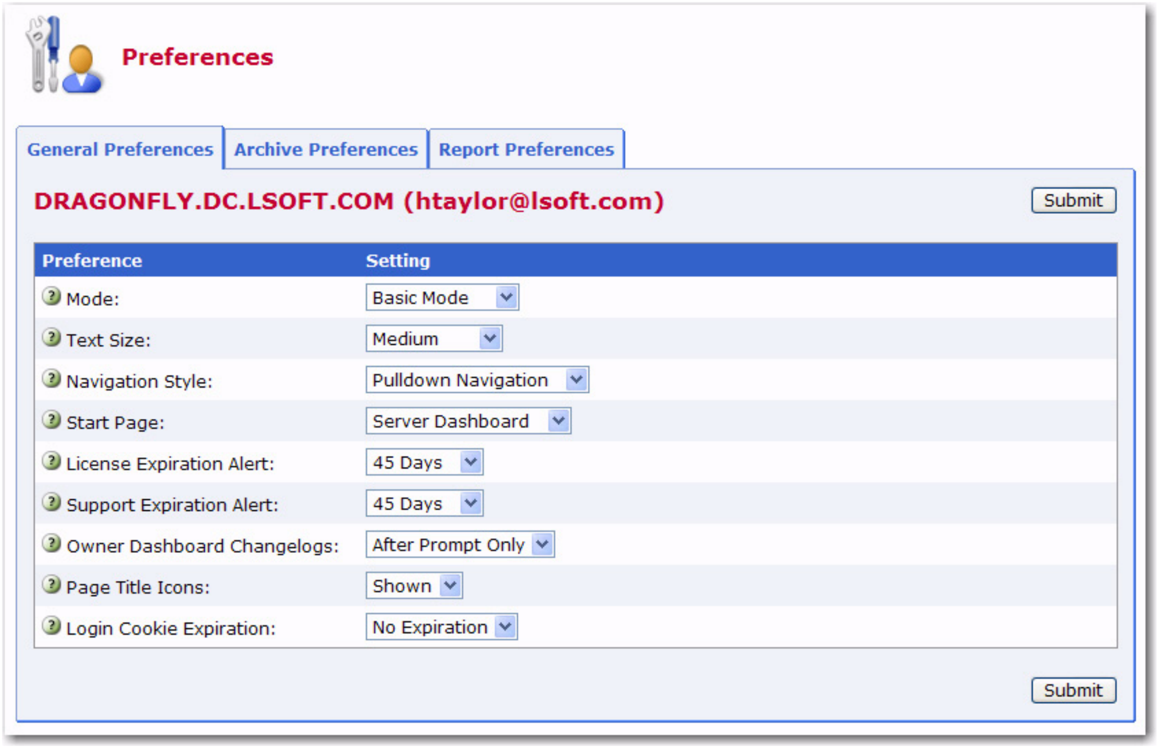
The interface tells you who you are logged in as, and what functions your logged-in address is entitled to perform. It also tells you what mode you're set to (the Basic Mode by default; there are two other modes, "Expert" and "Tutorial"). If you are entitled to edit the page, you can go straight to the page editing wizard by clicking **Edit Page**.

Clicking the **LISTSERV logo** icon at the left takes you to L-Soft's home page. Clicking "**LISTSERV 15.5**" takes you to your default start page.

Help pages are accessed by clicking the **Help** icon at the right hand side of the toolbar.

The first thing you may want to do is click **Preferences**.

Figure 11-5 Preference Screen



DRAGONFLY.DC.LSOFT.COM (htaylor@lsoft.com)

Preference	Setting
Mode:	Basic Mode
Text Size:	Medium
Navigation Style:	Pulldown Navigation
Start Page:	Server Dashboard
License Expiration Alert:	45 Days
Support Expiration Alert:	45 Days
Owner Dashboard Changelogs:	After Prompt Only
Page Title Icons:	Shown
Login Cookie Expiration:	No Expiration

One of the things you can set is the default start page. Site administrators will probably want to start at the server administration dashboard, while list owners will probably want to start at the list owner dashboard. Or they may be perfectly happy to start at the list archives page. In any case, clicking on **Preferences** brings up the following page:

More information can be found by clicking the **Help** icons associated with each preference.

The **Server Administration** menu gives you access to the Server Dashboard, site configuration functions, mailing list creation and deletion, server reports, server customization (mail and web templates), and the ad-hoc LISTSERV command entry page.

The **List Management** menu gives list owners access to the List Dashboard, list configuration, customization, and subscriber management.

List Moderation centralizes the moderation function, and it will show all messages needing moderation from the userid@host under which you are logged in.

Email Lists takes you back to the main list archives page.

11.5 The List Management Dashboard

The List Management Dashboard is one of the screens that may appear when you log in. (This is determined by your preference settings.)

The List Management Dashboard is divided into two sections, providing information and reports about your technical support and lists. Each section uses icons to indicate its status and available actions:

- **Green Shield with a Checkmark** – This icon means that you are current. Note that in the Moderation section this icon mean that there are no messages pending moderation.
- **Orange Diamond with an Exclamation Mark** – This icon means that something requires attention. Note that for the Moderation section, this icon means that there are messages pending moderation.
- **Life Buoy** – This icon is used if the Server Administrator has enabled technical support, making it easy and convenient to send requests to the Server Administrator. Once you click on this icon, an email message opens. Enter any information describing your problem. Please be as detailed as possible.

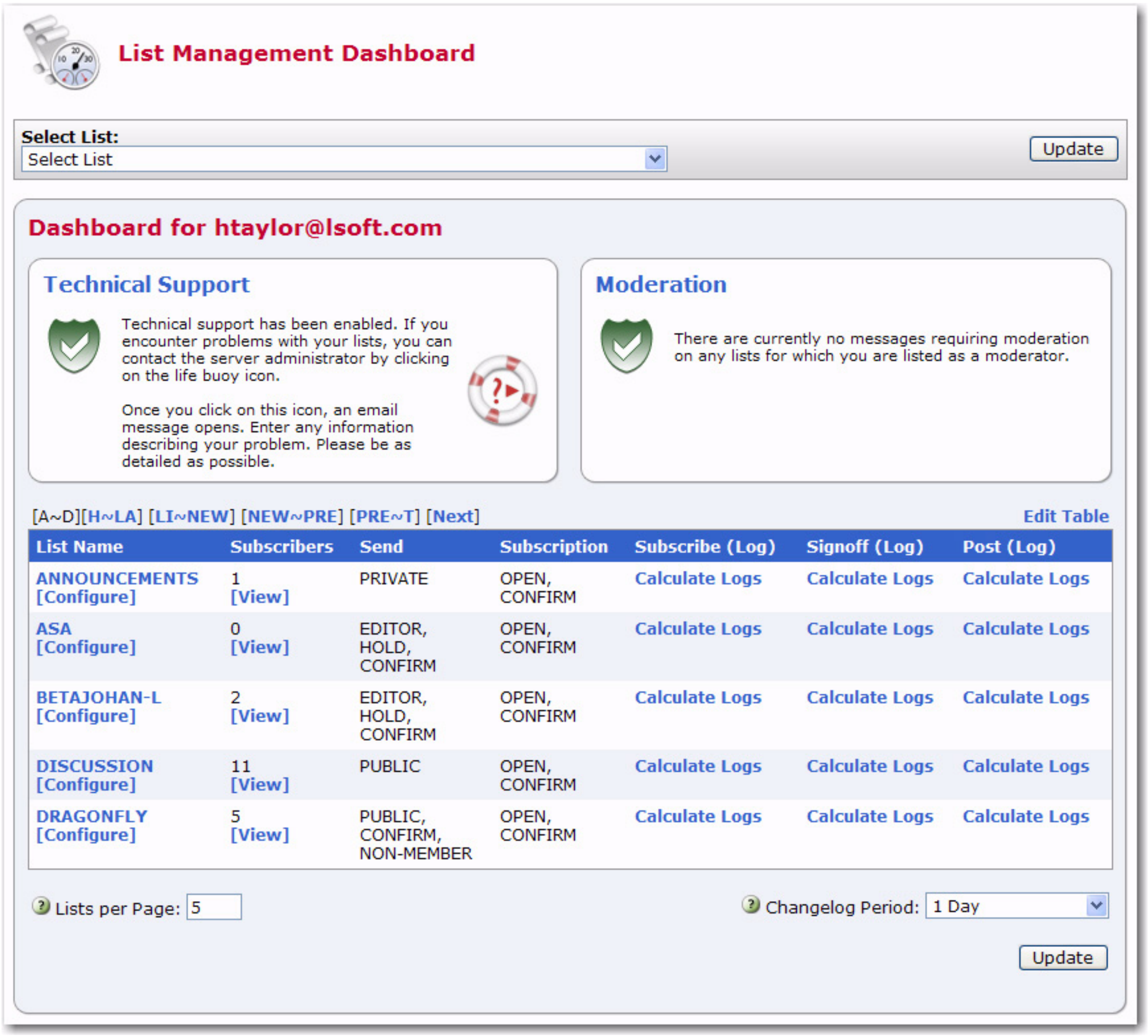
The **Technical Support** section shows whether or not the Server Administrator has enabled technical support. If it is enabled, then the **Life Buoy** icon is shown, making it easy and convenient to send requests to the Server Administrator. Once you click on this icon, an email message opens. Enter any information describing your problem. Please be as detailed as possible.

The **Moderation** section lists any messages that are awaiting moderation. The messages displayed here are those that belong to a list for which you are listed as a moderator.

Note: This section is only displayed if you are a moderator on one or more lists. In addition, only two icons are used in this section. The green icon indicates that there are no messages pending moderation; the orange icon indicates that there are messages pending moderation.

The reports table at the bottom of the screen shows list configuration and list activity (changelog) data, which is a combination of the List Report and the List Activity reports. (Note that the list activity data is only visible if a list has changelogs enabled.) By default, the changelog data is not automatically calculated because of the time it takes to process the log files, especially if you have many lists or if they have large log files. To calculate the data, just click on one of the plus signs, **[+]**. If you would like the changelog numbers to be loaded automatically every time you access the page, you can change the **Owner Dashboard Changelogs** setting in the Preferences section.

Figure 11-6 List Management Dashboard



List Management Dashboard

Select List: Select List

Dashboard for htaylor@lsoft.com

Technical Support

Technical support has been enabled. If you encounter problems with your lists, you can contact the server administrator by clicking on the life buoy icon.

Once you click on this icon, an email message opens. Enter any information describing your problem. Please be as detailed as possible.

Moderation

There are currently no messages requiring moderation on any lists for which you are listed as a moderator.

[A~D][H~LA] [LI~NEW] [NEW~PRE] [PRE~T] [Next]

List Name	Subscribers	Send	Subscription	Subscribe (Log)	Signoff (Log)	Post (Log)
ANNOUNCEMENTS [Configure]	1 [View]	PRIVATE	OPEN, CONFIRM	Calculate Logs	Calculate Logs	Calculate Logs
ASA [Configure]	0 [View]	EDITOR, HOLD, CONFIRM	OPEN, CONFIRM	Calculate Logs	Calculate Logs	Calculate Logs
BETAJOHAN-L [Configure]	2 [View]	EDITOR, HOLD, CONFIRM	OPEN, CONFIRM	Calculate Logs	Calculate Logs	Calculate Logs
DISCUSSION [Configure]	11 [View]	PUBLIC	OPEN, CONFIRM	Calculate Logs	Calculate Logs	Calculate Logs
DRAGONFLY [Configure]	5 [View]	PUBLIC, CONFIRM, NON-MEMBER	OPEN, CONFIRM	Calculate Logs	Calculate Logs	Calculate Logs

Lists per Page: 5

Changelog Period: 1 Day

To add or remove columns from the table, click the **Edit Table** option. This option is a great way to customize the information shown in the table, making sure only the information you want to see is visible. If you customize the table, then your changes will be saved in your preferences and will be automatically loaded every time you log in.

The **Lists Per Page** parameter controls how many lists will be displayed on a single page. The default is 10. If you want to break the list into 20 lists (for example), then simply enter "20" in the box and click **[Update]**.

The **Changelog Period** parameter lets you select the date range for the changelog columns in the report. The default is 1 day. If you want to change this period, simply choose a different option from the drop-down menu, such as 14 days, and then click **[Update]**.

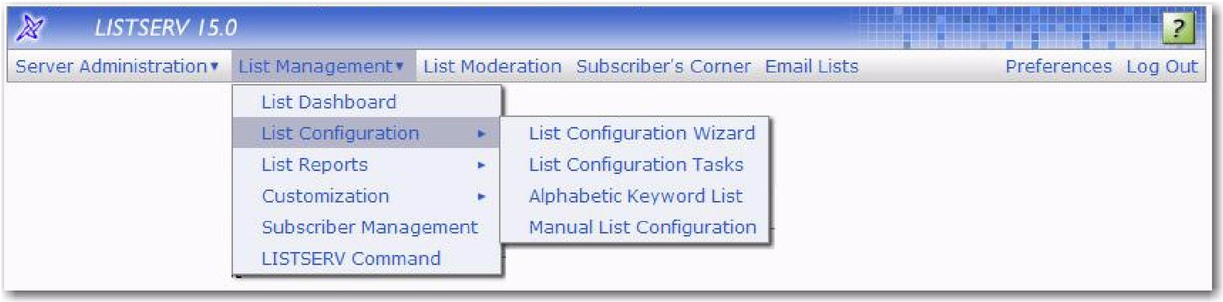
11.6 List Configuration

Lists can be configured using a wizard, which guides you step-by-step through the configuration process, or manually.

To open the List Configuration Wizard, click on the **List Management** menu, select **List Configuration**, and then select **List Configuration Wizard**.

To configure a list manually, click on the **List Management** menu, select **List Configuration**, and then select **Manual List Configuration**.

Figure 11-7 The List Management Menu



For those of you who want to configure the list manually, you can edit the list header in its "raw" state. This is only recommended for people who are very comfortable with the format of the LISTSERV list header and know the keywords and their parameters very well.

The list header appears in a multi-line text box that can be scrolled up and down. You simply type in the changes or added lines just as if you were using a regular text editor. When you are finished, click the **[Submit]** button to submit the changes. If you want to start over, you can click the **[Reload]** button to reload the header information from the server.

When you submit your changes with the **[Submit]** button, you will get the same kind of feedback from LISTSERV as you would if you sent a PUT operation by mail. The next screen will either say that the header of the list has been successfully updated, or it will indicate that it has found errors and that the header has not been stored. The feedback page also has a text box containing the header information you've just stored (or tried to store) so if you need to make further corrections to the header, you don't have to back up and start over.

The list header keywords and their parameters are documented in the List Keyword Reference document, in the online help, or (when using the configuration wizard) by clicking the **Help** icon for each keyword.

11.7 The Administrator Task Wizard

The Administrator Task Wizard allows you to review and modify which email addresses handle each aspect of administering your list. There can be any number of people involved in running a list. You might have the same person taking on all administrative roles alone, or you may assign several different people to each role.

To open the Administrator Task Wizard, click on the **List Management** menu, select **List Configuration**, and then select **List Configuration Tasks**.

Make desired changes to each of the keywords on any of the tabs, and then press the **[Submit]** button. Alternatively, you can click on each keyword to follow the links to the Wizard pages for each keyword – these include lengthy explanations about the keywords.

11.7.1 Understanding Administrator Roles

11.7.1.1 What is an Owner?

Owners are the primary administrators of the list. Email addresses with "owner" privileges may change the configuration and templates of the list, add and delete subscriptions, and change the settings on subscriptions.

Owners also receive email sent to the official list owner address. Unless otherwise specified, they receive notifications of subscriptions, signoffs, and error messages related to the operation of the list.

Some owner addresses may be designated as "quiet" owners. These addresses have all the owner privileges but do not receive any of the owner messages. Each list must have at least one non-quiet owner.

If you are replacing an owner, start by adding the new owner address. Next, make sure that the new address is able to function as an owner before removing the old address from the list of owners. If you make a mistake by first removing the old working address and then discovering the new address does not work, you may have to get the site administrator to fix your list for you.

11.7.1.2 What is an Editor?

On lists set to `Send=Editor`, editors are those addresses that are allowed to post directly to the list without moderation (that is, approval from a moderator).

On moderated lists where the `Moderator` keyword is not defined, the first editor listed in the `Editor` keyword acts as sole moderator.

On all lists, regardless of the value of the `Send` keyword, editors are not subject to limitations on the number of daily posts to the list, as set by the `Daily-Threshold` keyword.

The first editor listed in the `Editor` keyword must be an email address pointing to an individual. Other editors can point to lists on the same server including the current list; in that case, all the subscribers on the list have "editor" privileges. To enter the name of a list, you must enclose just the list name (not the list address) in parentheses.

If you do not specify the `Editor` keyword, the primary editor is the first listed Owner address.

11.7.1.3 What is a Moderator?

When a list is fully or partially moderated, all messages from "moderated" addresses are sent to the moderator(s) for approval. You can set up your list so that incoming messages go to each moderator in turn in a "round-robin" fashion, or so that all incoming messages go to all moderators.

If you do not specify the `Moderator` keyword, moderated messages get sent to the primary Editor address.

Messages are moderated in the following circumstances:

- The message is sent from a non-editor address on a list with `Send=Editor`.
- The message is sent from a subscription that is set to "`REVIEW`".
- The message is sent from a non-subscribed address on a list where `Default-Options` includes "`REVIEW`"

11.7.1.4 What is an Error?

Occasionally, problems occur on a list, and LISTSERV needs to know where to send error notifications. If you do not specify the `Errors-to` keyword, error messages will be sent to all non-quiet owners.

Listed below are a some of the most common circumstances where error notifications might be sent to the address specified by `Errors-to` (or its default value):

- If the list is set to `Auto-Delete=Yes`, and there have been any delivery errors ("bounces") within the set time period, a "Daily Monitoring Report" is sent every morning.
- If the list is set to `Auto-Delete=No`, then all bounces are forwarded.
- If an email is received for the list from an address specified in the `Filter` keyword.
- If an email is received for the list containing mail headers pointing to the list (this may be an indication of a condition that would cause a mailing loop if the post were allowed to be delivered to the list).

11.7.1.5 What is a Notification?

Whenever someone subscribes or is added to the list, or someone signs off or is removed from the list, a notification is sent to the non-quiet owners (if `Notify=Yes`) or to the address(es) specified in the Notify keyword.

To turn off notification of subscription activities, set `Notify=No`.

11.8 List Maintenance via the Web Interface

Important: The LISTSERV 15 Web Interface cannot be used to manage lists that are coded `Validate= Yes,Confirm,NoPW` or `Validate= All,Confirm,NoPW` because passwords are not accepted for validation in those cases.

The Subscriber Management screen lets list owners examine, delete, and add subscribers to a specific list. To access this screen, select **Subscriber Management** from the **List Management** menu. From this screen, select the list you want to work with, and then select either the Single Subscriber or Bulk Operations tab. The Single

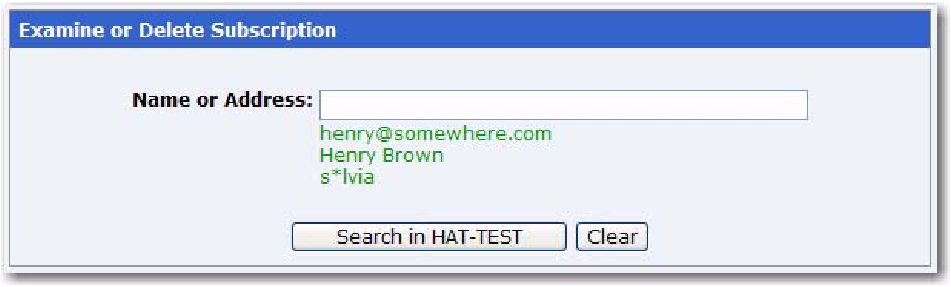
Subscriber tab lets the list owner examine or delete a subscription and add a new subscriber to the list. To add or delete many subscriptions at a time, use the Bulk Operations tab.

Note: To examine, modify, or delete multiple subscriptions at once, you can also use the Subscriber Reports screen.

11.8.1 Examining or Deleting a Subscription

This works very much like the "SCAN" command. Simply enter your criteria in the text box and click the **[Search in List]** button.

Figure 11-8 Examining or Deleting a Subscription


Examine or Delete Subscription

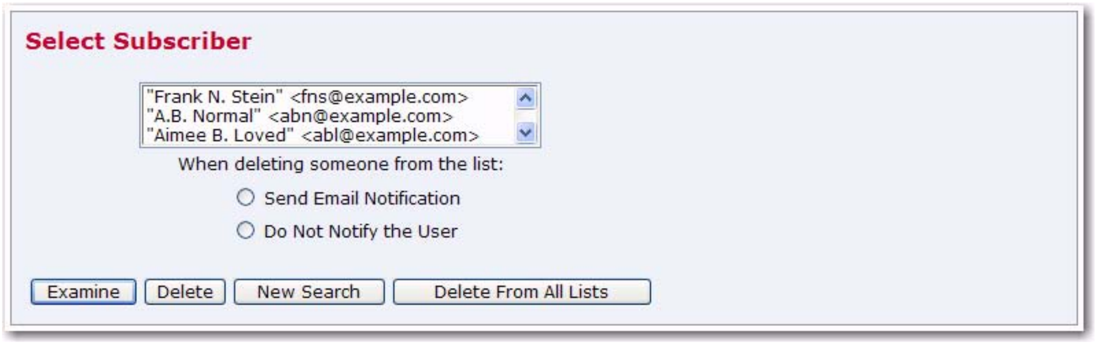
Name or Address:

henry@somewhere.com
Henry Brown
s*lvia

If there is no match for your entry, then you will get back the same page but with a Scan: No match message at the top. If, on the other hand, your search is successful, one of two things will happen.

If there are multiple matches for your criteria, a screen will be displayed with a scrollable list box containing all of the matches

Figure 11-9 Select Subscriber to Examine or Delete


Select Subscriber

"Frank N. Stein" <fns@example.com>
"A.B. Normal" <abn@example.com>
"Aimee B. Loved" <abl@example.com>

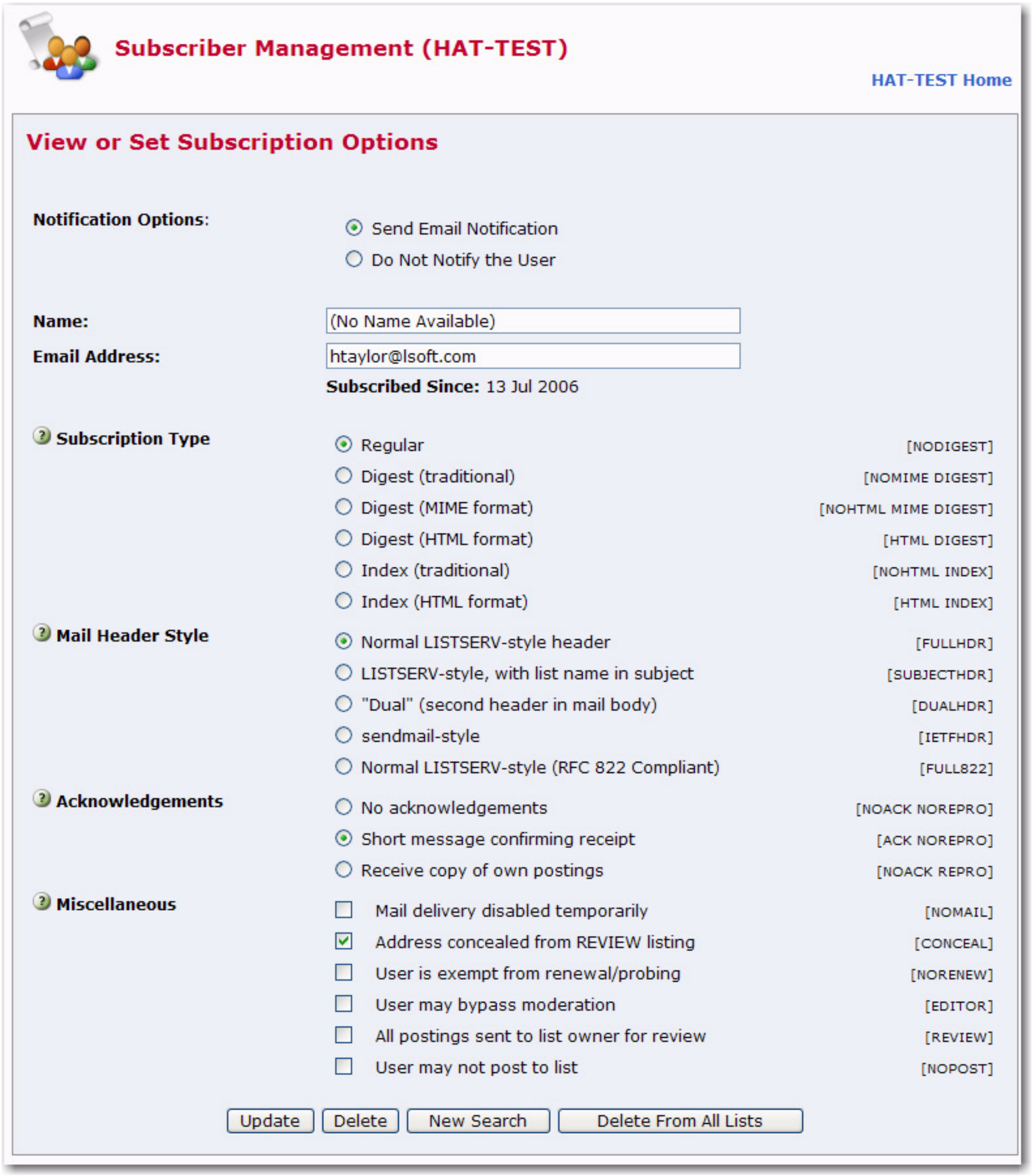
When deleting someone from the list:

○ Send Email Notification
○ Do Not Notify the User

Next, simply choose the user you want to examine or delete and click on the appropriate button. If you did not find what you were looking for, you can press the **[New Search]** button to get a new search screen.

If there was only a single match to your query, then the preceding screen will be bypassed and you will go directly to the next screen, which is the Subscriber Management screen for the subscription. It displays the values of all the settings for that subscription, including the subscription date and name. From the account management screen, you can delete the subscription or change the name, the email address, or the subscription options associated with the subscription. A sample of the screen is shown below.

Figure 11-10 Subscriber Management Screen



Subscriber Management (HAT-TEST)

HAT-TEST Home

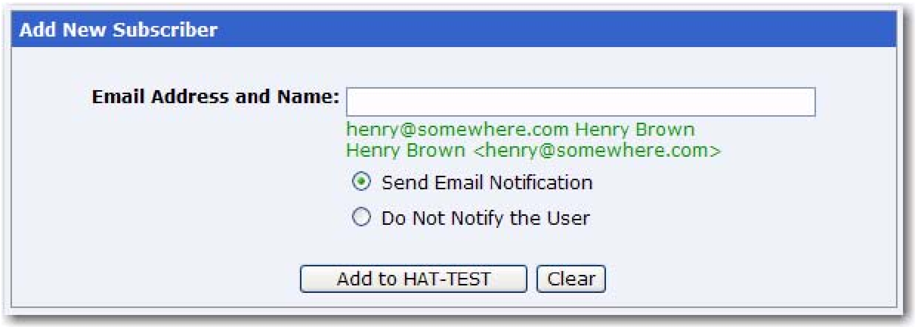
View or Set Subscription Options

Notification Options:	[✓ Send Email Notification]	
	Do Not Notify the User	
Name:	(No Name Available)	
Email Address:	htaylor@lsoft.com	
	Subscribed Since: 13 Jul 2006	
Subscription Type	[✓ Regular]	[NODIGEST]
	Digest (traditional)	[NOMIME DIGEST]
	Digest (MIME format)	[NOHTML MIME DIGEST]
	Digest (HTML format)	[HTML DIGEST]
	Index (traditional)	[NOHTML INDEX]
	Index (HTML format)	[HTML INDEX]
Mail Header Style	[✓ Normal LISTSERV-style header]	[FULLHDR]
	LISTSERV-style, with list name in subject	[SUBJECTHDR]
	"Dual" (second header in mail body)	[DUALHDR]
	sendmail-style	[IETFHDR]
	Normal LISTSERV-style (RFC 822 Compliant)	[FULL822]
Acknowledgements	No acknowledgements	[NOACK NOREPRO]
	[✓ Short message confirming receipt]	[ACK NOREPRO]
	Receive copy of own postings	[NOACK REPRO]
Miscellaneous	Mail delivery disabled temporarily	[NOMAIL]
	[✓ Address concealed from REVIEW listing]	[CONCEAL]
	User is exempt from renewal/probing	[NORENEW]
	User may bypass moderation	[EDITOR]
	All postings sent to list owner for review	[REVIEW]
	User may not post to list	[NOPOST]

11.8.2 Adding a New Subscriber to the List

To add a new subscriber, select the list you want to add the subscriber to. Then, in the **Add New Subscriber** section, enter the email address and name of the new subscriber, select whether or not to send an email notification to this subscriber, and click the **[Add to List]** button.

Figure 11-11 Adding a New Subscriber


Add New Subscriber
Email Address and Name:
henry@somewhere.com Henry Brown
Henry Brown <henry@somewhere.com>
[✓ Send Email Notification]
Do Not Notify the User
Add to HAT-TEST
Clear

Note: The full name of the subscriber is optional. If omitted, then the user will be added anonymously to the list.

11.8.3 Bulk Operations

The Bulk Operations tab allows a list owner to upload an input file containing email addresses and (optionally) names, one address per line, and either add all the email addresses in the file to the list (optionally replacing the current subscribers) or remove them from the list.

The input file is created on your own machine with an ASCII text editor. After clicking the **[Import]** button you will see a command response similar to the following:

- If the **Add the imported address to "*List*"; do not remove any subscribers** option is selected:

  ADD: no error, 202 recipients added, no entry changed, no duplicate, none forwarded.

- If the **Remove all subscribers from "*List*", and add the imported address** option is selected:

  DELETE: 14 subscribers removed.

  ADD: no error, 38 recipients added, no entry changed, no duplicate, none forwarded.

  (If this option is selected, but no input file is specified, then you will only get the DELETE message.)

- If the **Remove the imported addresses from "*List*"; do not add any subscribers** option is selected:

  DELETE: 93 subscribers removed.

- If the **Remove the imported addresses from all lists** option is selected:

  DELETE: 243 subscribers removed.

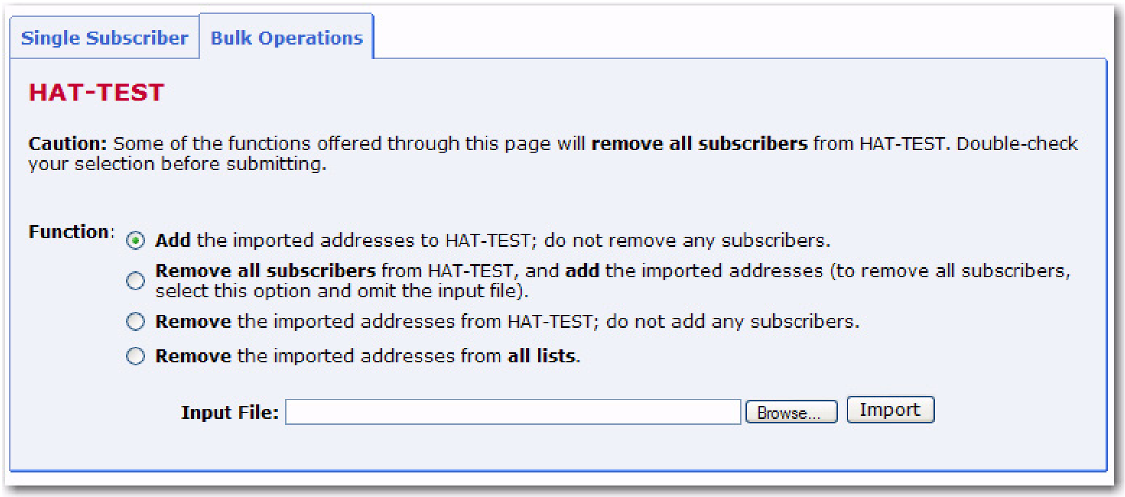
  DELETE: 109 subscribers removed.

  Global deletion process complete, 352 entries removed.

- If you do not supply an upload file where required, or if your browser does not support the RFC1867 file upload extension, you get the following message:

  Your browser did not upload any file during the transfer. Assuming you did fill in the file input box, the most likely cause is that your browser does not support the file upload extension (RFC1867).

Figure 11-12 The Bulk Operations Tab



HAT-TEST

Caution: Some of the functions offered through this page will **remove all subscribers** from HAT-TEST. Double-check your selection before submitting.

Function:
- [✓ **Add** the imported addresses to HAT-TEST; do not remove any subscribers.]
- **Remove all subscribers** from HAT-TEST, and **add** the imported addresses (to remove all subscribers, select this option and omit the input file).
- **Remove** the imported addresses from HAT-TEST; do not add any subscribers.
- **Remove** the imported addresses from **all lists**.

Input File:

Notes: Bulk operations are not enabled by default. The site manager must enable this functionality explicitly. If you get an error 2 when you click on the **[Import]** button, this means that the "upload" directory has not been created. If you get an error 13 when you click on the **[Import]** button, this means that the "upload" directory has been created but the CGI program user does not have write permission in that directory. In addition, the input file must be a plain text file (not a word processor document or spreadsheet) and must contain one address per line, optionally followed with a space (or TAB) and the subscriber's name. In addition, the subscribers being added or deleted will not be notified.

11.9 Digesting and Indexing

The List Configuration Task Wizard guides you through providing digest and index versions of the list, in addition to the usual individual postings. To access this wizard, click on the **List Management** menu, select **List Configuration**, and then select **List Configuration Tasks**. Click on the Digest tab to setup digest or index versions of the list.

Normally, LISTSERV sends messages out to subscribers as soon as it receives them, so that the subscribers receive the mailing list messages throughout the day. Some may prefer to get all of the messages at the same time, combined into a single piece of email. Such a collection of messages is called a digest.

Another option, similar to the digest, is for LISTSERV to send the subscriber a list of what messages have been distributed to the mailing list recently, along with information about when the message was posted, how big it is, and who sent it. This is referred to as an index.

11.9.1 What is a Digest?

Normally, LISTSERV sends mailing list messages out to subscribers as soon as it receives them, so that the subscribers get messages throughout the day.

Some may prefer to get all of the messages at the same time, combined into a single piece of email. Such a collection of messages is called a digest.

Depending on the volume of messages that go out over a mailing list, it may make sense to have the digest go out once a day, once a week, or once a month.

LISTSERV allows subscribers to get digests in three formats: HTML, MIME, and NOMIME NOHTML. Subscribers can individually choose the format that works best in their email clients. Each email client is different, so subscribers should experiment with the different digest styles to find the one they prefer.

11.9.2 What is an Index?

An index, similar to the digest, is another option for receiving one message that summarizes a collection of messages from LISTSERV. LISTSERV sends the subscriber a list of what messages have been distributed to the mailing list recently, along with information about when the message was posted, how big it is, and who sent it.

Indexes are only available for archived mailing lists that have digests enabled. Indexes are sent out at the same time as the digests.

Indexes are available in HTML and NOHTML formats. If HTML is used, the index includes a link to each message in the Web archive interface. If NOHTML is used, the index includes instructions on how to retrieve the messages the subscriber wants.

11.9.3 What is a Plain Text Digest?

Plain text is the simplest form of digest. All email programs should be able to read plain text digests without difficulty. The basic form of this type of digest is given in RFC 1153.

At the beginning of a plain text digest there is a list of the subjects of the messages in the digest:

```
Subject: MYLIST Digest - 10 Jun 1996 to 11 Jun 1996
There are 5 messages totalling 50 lines in this issue.
Topics in this issue:
   1. Request for comments
   2. Another subject, another ruler (3)
   3. Project deadline on Thursday
```

Note: If the mailing list is used for discussions, typically there will be multiple messages for each subject.

After the topics list, the contents of the DIGEST-H template (if any) will be displayed:

```
This mailing list is sponsored by XYZ Industries. If you
would prefer to receive this mailing list as individual
messages instead of as a digest, send a "SET MYLIST MAIL
NODIGEST" to listserv@lists.example.com.
```

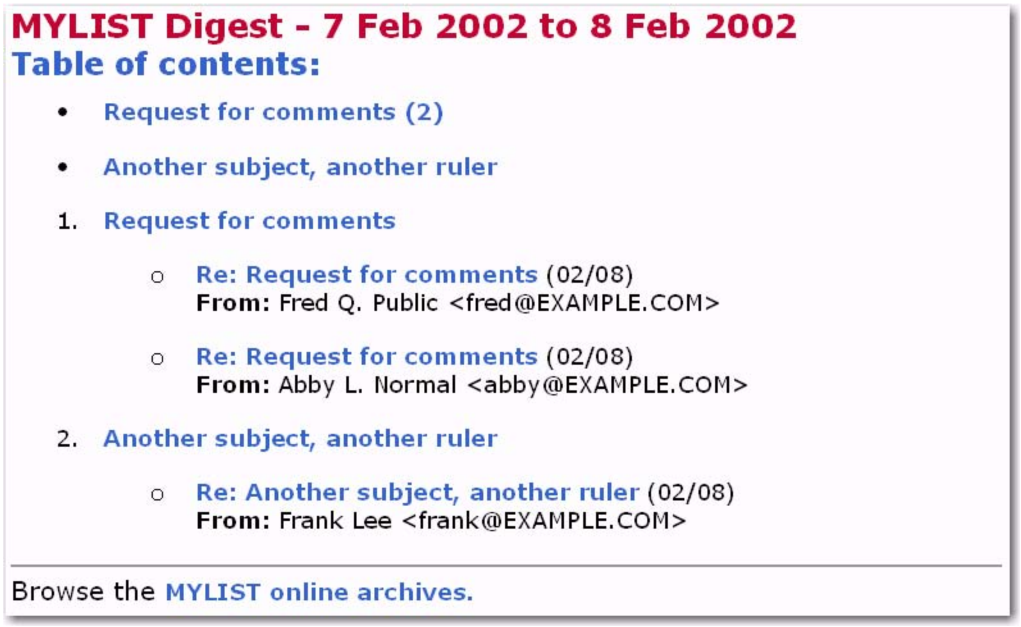
After the contents of the DIGEST-H template (if any), the messages will appear in the order LISTSERV received them, separated by lines consisting of 30 hyphens.

Since the digest is plain text, any HTML messages will appear uninterpreted (the raw HTML code will appear) and any attachments will appear in their encoded form. Additionally, any special characters (smart quotes or accented letters, for example) may not display correctly in plain text digests.

11.9.4 What is an HTML Digest?

Recipients of an HTML digest who have email programs that are programmed to handle such digests will see an index of the day's messages followed by the contents of the DIGEST-H template (if any).

For example:



MYLIST Digest - 7 Feb 2002 to 8 Feb 2002

Table of contents:

- Request for comments (2)
- Another subject, another ruler

1. Request for comments
   - Re: Request for comments (02/08)
     From: Fred Q. Public <fred@EXAMPLE.COM>
   - Re: Request for comments (02/08)
     From: Abby L. Normal <abby@EXAMPLE.COM>
2. Another subject, another ruler
   - Re: Another subject, another ruler (02/08)
     From: Frank Lee <frank@EXAMPLE.COM>

Browse the MYLIST online archives.

Clicking on a subject in the table of contents takes you down to the relevant message or messages in the index. Clicking on any of the messages will then take you to the message in question.

HTML digests include information about the content of each message (through MIME); therefore, each message should display normally.

A special note: Since the digest includes all of the messages as MIME attachments, all of the links in the HTML digest index are of the form: "cid: content-id" (see RFC 2111 for more information about this type of URL). Unfortunately, some email clients, even some that otherwise support HTML, do not handle such references correctly. For this reason, some subscribers may not be able to use HTML digests.

11.9.5 What is a MIME Digest?

A MIME digest is midway in complexity between a plain text digest and an HTML digest. It contains a table of contents of the topics discussed in the digest:

```
There are 4 messages totalling 86 lines in this issue.
Topics of the day:
  1. Request for comments (3)
  2. Another subject, another ruler
```

Each message in the digest is included as a MIME attachment. The subscribers access the messages as they would any other type of attachment. And, since MIME standards require that the type of content of each attachment is identified, all messages should appear normally, without the sort of display problems that plain text digests can have.

11.10 Customizing Mail and Web Templates

The template editor allows the site administrator and list owner to customize the majority of the Web Interface Pages and Administrative Messages sent out by LISTSERV. There are two types of templates you can customize – Web and Mail.

Web Templates (also referred to as Dynamic Web Templates) control the pages produced by the Web interface. These pages are produced dynamically when they are accessed. What gets displayed by the browser depends on the circumstances and may change depending on who is accessing the interface, which list they are accessing, the settings of that list, and so on.

Commands in Web Templates begin with a plus sign "+" and variables begin with an ampersand followed by a plus sign "&+".

Mail Templates control text produced by LISTSERV itself. Although generally categorized as mail templates, they actually fall into three different types:

- Mail Templates control the contents of email messages sent by LISTSERV. A mail template is a complete email message. Formatting commands are available, substitutions that make sense in the context of the specific message are available, and while other templates may be imbedded with the .IM command, the message is in and of itself ready for LISTSERV to send.
- Message Templates supply text that will ultimately be shown to the user. These messages may be included in a mail template; or they may be included in an email sent by LISTSERV in response to LISTSERV commands sent by email to the LISTSERV command address; or they may be returned to the Web interface in response to commands sent through the Web interface. Limited formatting is available.
- Message Fragments templates are the lowest level of mail templates. Fragments are pieces of text produced by LISTSERV as parts of other messages or emails. For example, list digests must follow a certain format dictated by the Internet RFCs. Therefore, it is not possible to provide a complete mail template for digests. However, some of the text within the digest is not mandated by the RFCs, and so LISTSERV provides some fragment templates to control these parts, for example MSG_DIGEST_FRAGMENT_DATERANGE1 to control the date range and MSG_DIGEST_FRAGMENT_PREAMBLE1 to control the text preceding the table of contents. Formatting commands are generally not available in fragments.

Commands in Mail Templates begin with a period "." and variables begin with an ampersand "&".

To access the template editor, click on the **List Management** menu, select **Customization**, and then select either **Web Templates** or **Mail Templates**.

Once the template editor has opened, simply select the list and template you want to work with. The template editor also lets you create new template.

For more information about customization templates, see the Customization Manual for LISTSERV 15.5 or click on the link(s) located in the **Tips** section at the bottom.

11.11 Reports

The Web Administration Interface makes it possible for server administrators or for those list owners with multiple lists to obtain reports on their lists and search these lists for specific characteristics.

To access, click on the **List Management** menu, select **List Reports**, and then select either **List Reports**, **Subscriber Reports**, or **List Activity Reports**.

11.11.1 List Reports

To create a report, select the list or lists to generate the report for. By default, you will see all of the lists you own. Next, select the columns you want to include in the report. Finally, click **[Submit]**.

Note: Each column heading is a clickable link that will sort the column in ascending or descending order. A small arrow pointing up or down will appear indicating the order. Each list name in the report is a clickable link to the list configuration page for that particular list.

The List Report contains a “search” option. Use this to find a specific list or group of lists.

11.11.2 Subscriber Reports

To create a report, select the list or lists to generate the report for. By default, you will see all of the lists you own. Next, select the columns you want to include in the report. Finally, click **[Submit]**.

The report generated is not just a simple report. It also provides the means of manipulating the reported data. Once the list owner has generated a report, it is possible to change subscription settings or delete one or more subscribers. It is also possible to add subscribers to the list.

The Subscriber Report contains a “search” option. Use this to search for a specific subscriber.

The Subscriber Report also lets you add a subscriber to a list. To add a new subscriber to the list, type the user's email address followed by the full name. Then, choose whether or not to notify the user that he has been added and click on the **[Add Subscriber]** button.

The Subscriber Report also lets you change subscriber setters. Once the report has been generated, it becomes possible to change any subscriber's settings (except for the subscription date):

- Select the subscriber by checking the box to the left of the subscriber name. Check the **Invert** box to select every subscriber EXCEPT those that you have checked off.
- Make the change at the bottom of the column using the drop down boxes. All of the the selections for changing the current options will be listed. Highlight the new option by clicking it.
- Click the **[Submit]** button to save your changes. If you would like your subscribers to receive an email notification that their options have been changed, check the **Send email notification of changes** box. Otherwise, no notification will be sent.

To view and make changes to the subscription options of individual subscribers, click on the subscriber name. If a name is not available, click on the **No Name Available** link. The

Subscriber Management screen will open for the selected individual. Make any changes and then click **[Update]**.

To delete subscribers, check the boxes to the left of the subscriber names you want to remove, and then click the **[Delete Selected Subscribers]** button.

Each column heading is a clickable link that will sort the column in ascending or descending order. A small arrow pointing up or down will appear indicating the order.

11.11.3 List Activity Reports

Two types of activity reports can be generated using this interface. The first report is a history report. This report simply displays the changelog records that match the selection criteria, one record per line, similar to reading the changelog yourself. The second report is a statistics report. This table allows you to reduce the changelog records to numbers, based on several different criteria. This is where you can determine (for instance) how many postings were made to a given list on a range of specified dates, how many times a particular LISTSERV command was issued, and so forth.

You should generally choose only one report column on which to report statistics (Event or Email Address or Details) as each value of the text field is counted independently and sorted in alphabetical order, and rows could then include unrelated values and cause some confusion.

Changelog reports are only available for lists where the `Change-Log` listheader keyword is set to `Yes`, and only for the time span it was enabled. Enabling Changelogs in the list header will not suddenly make it possible to view past list activity. If Changelogs are enabled, but set to rotate over time (for example, monthly changelogs), the reports are only available for the current report.

To generate a changelog report:

- Select a list.
- Define **Report Type** to create a historical or statistical report or both. If you check both report fields, you will get two reports. The historical report shows the actual changelog entries. The statistical report shows counts and averages.
- Define **Report Entries** to determine which events to include in the report.
- Define **Report Interval** to set the date range for the report.
- Optionally, you can also select the reporting interval for statistics reports. The default is to show totals for the entire reporting period.
- Optionally select a report format. The default is a web-based table. You can also get the results in a "Comma-separated values" (CSV) format which can then be saved from your web browser to a file on your computer, allowing you to import the data into any reporting software that supports CSV files.
- Click the **[Submit]** button.

11.12 Sending Interactive Commands via the Web

The LISTSERV Command Interface is used for submitting LISTSERV commands that are not otherwise facilitated by the Web interface. See Appendix A: Command Reference Card for a listing of all commands.

For some commands, the response is automatically displayed by the Web interface. For others, a special command parameter must be used in order to display the response in the browser, otherwise the response is sent by email. In addition, other commands are only able to respond by email.

To access the LISTSERV Command Interface, click on the **List Management** menu, and then select **LISTSERV Command**.

The Command Interface can only be used for single line commands. In particular, the PUT command will not work through the Web interface. Multi-line commands must be sent by email.

A selection of frequently used commands is available at the bottom of the screen.

11.13 Mail-Merge

Advanced mail-merge features are available and can be accessed either by sending specially-formatted DISTRIBUTE jobs to LISTSERV or by using the web administration interface. The web interface is not a "wizard" but simply an interface that allows you to "cut and paste" a mail merge message and select different standardized groups of list subscribers to whom the message is to be sent.

Notes: LISTSERV's mail-merge functionality REQUIRES the use of LISTSERV's Embedded Mail Merge feature. For more information, see the EMM keyword in the Site Configuration Keyword Reference document. Mail-merge functions are documented fully in the Advanced Topics Guide for LISTSERV.

11.14 RSS Support for Web Archives New

RSS support for LISTSERV web archives is inherent in the WA CGI and does not need to be turned on to be available.

The existing RSS support in LISTSERV's web archive interface has been improved by the addition of RSS abstracting, which is available in LISTSERV RSS feeds by default starting with LISTSERV 15.5.

Note: Existing (that is, pre-15.5) web indexes must be recreated to add the abstracts. This is a one-time operation that could take a while on a large site and is better left to be scheduled by the administrator. (See the documentation for the REINDEX command in the Site Manager's Operations Manaul for LISTSERV.) The abstract is either generated implicitly from the existing text of the message, or it may be specified explicitly by the use of a tag in the message.

In order to properly specify the explicit abstract, a mail client that supplies a plain-text part that matches the message is REQUIRED. Most if not all modern mail clients fit this specification.

For those using plain text messages: An explicit abstract is specified by using <abstract> and </abstract> tags in the body of the message - typically at the very end, but the explicit abstract may in theory appear anywhere in the message. The closing tag is optional but recommended.

For those using HTML-capable mail clients: If the mail client is unable to provide a user-specified plain-text alternative and instead sends a "canned" message to the effect that mail clients that do not support HTML will not be able to read the message, the "canned" message will be the abstract. If the mail client is not capable of providing a plain-text alternative message part at all, and provides HTML only, no abstract will be available.

For those posting messages using the web interface: A dedicated text box for entering explicit abstracts can also be enabled in the message posting interface. List owners can set the RSSINPUT variable to 1 in the list-specific SKIN template. To enable the dedicated text box for all lists, the server administrator should set the RSSINPUT variable to 1 in the site-wide SKIN template.

There is no word limit when an explicit abstract is specified.

There is a new site configuration variable, RSS_ABSTRACT_WORDS, which controls the size and/or the presence of the abstract in the feed.

There are two parameters: a maximum abstract size and a minimum abstract size. The second parameter is optional, and if left unset, defaults to 50% of the maximum size. The basic syntax is:

```
RSS_ABSTRACT_WORDS=max [min]
```

Examples:

- VMS: `DEFAULT_DIST_BACKGROUND "500 250"`
- unix: `RSS_ABSTRACT_WORDS="500 250"`

  `export RSS_ABSTRACT_WORDS`
- Win: `RSS_ABSTRACT_WORDS=500 250`

```
The site-level value may be overridden at the list level with the new
list header keyword RSS-Abstract-Words, whose basic syntax is:
```

RSS-Abstract-Words= max[,min]

For example,

```
RSS-Abstract-Words= 100
RSS-Abstract-Words= 100,25
```

LISTSERV stops at the first paragraph boundary after which it has collected at least 'min' words, adding an ellipsis if there is more text (compliant signatures are ignored). If there is an explicit abstract, then the min and max parameters are ignored and the abstract is whatever the user entered. If the stop-on-paragraph-end feature is not desired, simply set "min" to the same value as "max".

If RSS abstracts are not desired, then setting the maximum to 0 disables the abstract.

In all cases, RSS_ABSTRACT_WORDS and/or RSS-Abstract-Words may be changed at will, with the change taking effect "from now on." In order to make the new value take effect retroactively, the indexes must be rebuilt manually. Because of the resource-intensive nature of the REINDEX command, this will NOT happen automatically.

Appendix A: Command Reference Card

This document is available separately. It can be retrieved in plain text from any server running L-Soft's LISTSERV™ with the command INFO REFCARD.

Commands are listed in alphabetical order, with the minimum acceptable abbreviation in capital letters. Angle brackets are used to indicate optional parameters. All commands which return a file accept an optional 'F=*fformat*' keyword (without the quotes) that lets you select the format in which you want the file sent; the default format is normally appropriate in all cases. Some esoteric, historical or seldom-used commands and options have been omitted.

```
List subscription commands (from most to least important)
---------------------------------------------------------
Commands that support the QUIET keyword are marked (*)

SUBscribe(*) listname <full_name>              Subscribe to a list, or change
                                               your name if already subscribed
                      ANONYMOUS                -> Subscribe anonymously

             Following either <full_name> or ANONYMOUS you may specify
             individual user options:

                      <WITH opt1 opt2...>      -> with specified user options

JOIN                                           Same as SUBscribe

SIGNOFF                                        Remove yourself:
             listname                          - From the specified list
             *                                 - From all lists on that server
             * (NETWIDE                        - From all lists in the network

UNSUBSCRIBE                                    Same as SIGNOFF

CHANGE                                         Change your subscribed address
                                               to "newaddr":
             listname newaddr                  -> on the specified list
             * newaddr                         -> on all lists on the server

SET          listname options                  Alter your subscription options:
             ACK/NOACK/MSGack                  -> Acknowledgements for postings
             CONCEAL/NOCONCEAL                 -> Hide yourself from REVIEW
             HTML/NOHTML                       -> Prefer/avoid HTML format
                                                  (especially HTML digests)
```

```
                Mail/NOMail                      -> Toggle receipt of mail
                MIME/NOMIME                      -> Prefer/avoid MIME format
                                                    (especially MIME digests)
                DIGests/INDex/NODIGests/NOINDex  -> Ask for digests or message
                                                    indexes rather than getting
                                                    messages as they are posted
                REPro/NOREPro                    -> Copy of your own postings?
                TOPICS: ALL                      -> Select topics you are
                        <+/->topicname              subscribed to (add/remove
                                                    one or replace entire list)

Options for mail headers of incoming postings (choose one):
                FULLhdr or FULL822               -> "Full" (normal) mail headers
                IETFhdr                          -> Internet-style headers
                SHORThdr or SHORT822             -> Short headers
                DUALhdr                          -> Dual headers, useful with PC
                                                    or Mac mail programs
                SUBJecthdr                       -> Normal header with list name
                                                    in subject line

CONFIRM         listname1 <listname2 <...>>      Confirm your subscription
                                                 (when LISTSERV requests it)

Other list-related commands
---------------------------
GETPOST         listname ref1 <ref2 <...>> <opt> Order individual messages from
                                                 list archives

                There is a single option:

                NOMIME                       Retrieve messages in "raw" form,
                                             ie, do not re-encode MIME
                                             attachment links (pre-1.8e
                                                 behavior)

INDex           listname                         Sends a directory of available
                                                 archive files for the list, if
                                                 postings are archived

Lists           <option>                         Send a list of lists as follow:
                (no option)                      -> Local lists only, one line
                                                    per list
                Detailed                         -> Local lists, full information
                                                    returned in a file
                Global /xyz                      -> All known lists whose name or
                                                    title contains 'xyz'
```

```
                 SUMmary <host>                   -> Membership summary for all
                                                     lists on specified host
                 SUMmary ALL                      -> For all hosts (long output,
                                                     send request via mail!)
                 SUMmary TOTAL                    -> Just the total for all hosts

Query            listname                         Query your subscription options
                                                  for a particular list (use the
                                                  SET command to change them)
                 *                                -> Query all lists you are
                                                     subscribed to on that server

REGister         full_name                        Tell your name to LISTSERV, so
                                                  that you don't have to specify
                                                  it on subsequent SUBSCRIBE's
                 OFF                              Make LISTSERV forget your name

REView           listname <(options>              Get information about a list
                 BY sort_field                    -> Sort list in a certain order:
                    Country                          by country of origin
                    Date                             by subscription date
                    Name                             by name (last, then first)
                    NODEid                           by hostname/nodeid
                    Userid                           by userid
                 BY (field1 field2)               -> You can specify more than one
                                                     sort field if enclosed in
                                                     parentheses: BY (NODE NAME)
                 Countries                        -> Synonym of BY COUNTRY
                 Topics                           -> Include breakdown of
                                                     subscribers per topic
                 LOCal                            -> Don't forward request to
                                                     peers
                 Msg                              -> Send reply via interactive
                                                     messages (BITNET users only)
                 NOHeader                         -> Don't send list header
                 Short                            -> Don't list subscribers
                 ALL                              -> List both concealed and non-
                                                     concealed subscribers (list
                                                     owners/site maintainers only)

SCAN             listname text                    Scan a list's membership for a
                                                  name or address

SEArch           listname word1 <word2 <...>>     Search list archives
             or: word1 <word2 <...>> IN listname
                 FROM date1                       -> From this date
```

```
                   TODAY                    -> From today
                   TODAY-7                  -> In the last 7 days
              TO   date2                    -> To this date
              WHERE
                SUBJECT CONTAINS xxxx       -> Only this subject
              AND/OR
                SENDER  CONTAINS xxxx       -> Only this author
                                            Complex boolean operations are
                                            supported, see database guide

STats         listname <(options>           Get statistics about a list (VM)
              LOCal                         -> Don't forward to peers



Informational commands
----------------------
Help                                        Obtain a list of commands

INFO          <topic>                       Order a LISTSERV manual, or get
              <listname>                    a list of available ones (if no
                                            topic was specified); or get
                                            information about a list

Query         File fn ft <filelist> <(options>  Get date/time of last update of
                                            a file, and GET/PUT file access
                                            code
              FLags                         -> Get additional technical
                                               data (useful when reporting
                                               problems to experts)

RELEASE                                     Find out who maintains the
                                            server and the version of the
                                            software and network data files

SHOW          <function>                    Display information as follows:
              ALIAS node1 <node2 <...>>     -> BITNET nodeid to Internet
                                               hostname mapping
              BITEARN (VM only)             -> Statistics about the BITEARN
                                               NODES file
              DISTribute                    -> Statistics about DISTRIBUTE
              DPATHs host1 <host2 <...>>    -> DISTRIBUTE path from that
                                               server to specified host(s)
              DPATHs *                      -> Full DISTRIBUTE path tree
              FIXes (VM only)               -> List of fixes installed on the
                                               server (non-VM see LICENSE)
```

```
                    HARDWare or HW                    -> Hardware information
                    LICense                           -> License/capacity information
                                                         and software build date
                    LINKs node1 <node2 <...>>         -> Network links at the BITNET
                                                         node(s) in question
                    NADs node1 <node2 <...>>          -> Addresses LISTSERV recognizes
                                                         as node administrators
                    NETwork (VM only)                 -> Statistics about the NJE
                                                         network
                    NODEntry node1 <node2 <...>>      -> BITEARN NODES entry for the
                                                         specified node(s)
                    NODEntry node1 /abc*/xyz          -> Just the ':xyz.' tag and all
                                                         tags whose name starts with
                                                         'abc'
                    PATHs snode node1 <node2 <...>>   -> BITNET path between 'snode'
                                                         and the specified node(s)
                    POINTs <ALL | list1 list2...>     -> Graduated license point
                                                         information for planning
                    STATs                             -> Usage statistics
                                                         (default option)
                    VERSion                           -> Same as RELEASE command
                    (no function)                     -> Same as SHOW STATS

       Commands related to file server functions
       -----------------------------------------
       AFD                                            Automatic File Distribution
                    ADD    fn ft <filelist <prolog>>  Add file or generic entry to
                                                      your AFD list
                    DELete fn ft <filelist>           Delete file(s) from your AFD
                                                      list (wildcards are supported)
                    List                              Displays your AFD list

                    For node administrators:
                    FOR user ADD/DEL/LIST etc         Perform requested function on
                                                      behalf of a user you have
                                                      control over (wildcards are
                                                      supported for DEL and LIST)

       FUI                                            File Update Information: same
                                                      syntax as AFD, except that FUI
                                                      ADD accepts no 'prolog text'

       GET          fn ft <filelist> <(options>       Order the specified file or
                                                      package
                    PROLOGtext xxxx                   -> Specify a 'prolog text' to be
                                                         inserted on top of the file
```

```
GIVE         fn ft <filelist> <TO> user        Sends a file to someone else

INDex       <filelist>                         Same as GET xxxx FILELIST
                                               (default is LISTSERV FILELIST)

PW           function                          Define/change a "personal
                                               password" for protecting AFD/FUI
                                               subcriptions, authenticating PUT
                                               commands, and so on
             ADD firstpw                       -> Define a password for the
                                                  first time
             CHange newpw <PW=oldpw>           -> Change password
             RESET                             -> Reset (delete) password

SENDme                                         Same as GET

Other (advanced) commands
-------------------------
DATAbase     function                          Access LISTSERV database:
             Search DD=ddname <ECHO=NO>        -> Perform database search
                                                  (see INFO DATABASE for more
                                                   information on this)
             List                              -> Get a list of databases
                                                  available from that server
             REFRESH dbname                    -> Refresh database index, if
                                                  suitably privileged

DBase                                          Same as DATABASE

DISTribute   <type> <source> <dest> <options>  Distribute a file or a mail
                                               message to a list of users (see
                                               INFO DIST for more details on
                                               the syntax)
             Type:
             MAIL                              -> Data is a mail message, and
                                                  recipients are defined
                                                  by '<dest>'
             MAIL-MERGE                        -> Data is a mail-merge message.
                                               See the Advanced Topic Manual to
                                                  LISTSERV for specifics.
             POST                              -> (non-VM only) Same as MAIL
                                                except that the message is pre-
                                             approved. See the Advanced Topics
                                              Manual to LISTSERV for specifics.
             FILE                              -> Data is not mail, recipients
```

```
                                              are defined by '<dest>'
                RFC822                     -> Data is mail and recipients
                                              are defined by the RFC822
                                              'To:'/'cc:' fields
                Source:
                DD=ddname                  -> Name of DDname holding the
                                              data to distribute (default:
                                              'DD=DATA')
                Dest:
                <TO> user1 <user2 <...>>   -> List of recipients
                <TO> DD=ddname             -> One recipient per line
                Options for the general user:
                ACK=NOne/MAIL/MSG          -> Acknowledgement level
                                              (default: ACK=NONE)
                CANON=YES                  -> 'TO' list in 'canonical' form
                                              (uid1 host1 uid2 host2...)
                DEBUG=YES                  -> Do not actually perform the
                                              distribution; returns debug
                                              path information
                INFORM=MAIL                -> Send file delivery message to
                                              recipients via mail
                TRACE=YES                  -> Same as DEBUG=YES, but file
                                              is actually distributed
               AV=YES[,FORCE]             -> Check the message for viruses.
                                            See the Advanced Topics Manual
                                              for LISTSERV for specifics.
                DKIM=NO/YES                -> Sign the message with a
                                           DomainKeys signature.  (default:
                                              DKIM=NO)

                Options requiring privileges:
                FROM=user                  -> File originator
                FROM=DD=ddname             -> One line: 'address name'
                PRE-APPROVED=YES           -> Pre-approve message (with
                                              DISTRIBUTE POST only)

FOR             user command               Execute a command on behalf of
                                           another user (for node
                                           administrators)

SERVE           user                       Restore service to a disabled
                                           user

THANKS                                     Check the server is alive

UDD                                        Access the User Directory
```

```
                                           Database (there are 18 functions
                                           and many sub-functions, so the
                                           syntax is not given here)

File management commands (for file owners only)
-----------------------------------------------
AFD/FUI                                    Automatic File Distribution
             GET fn ft <filelist>          Get a list of people subscribed
                                           to a file you own

GET          fn FILELIST <(options>        Special options for filelists:
             CTL                           -> Return filelist in a format
                                              suitable for editing and
                                              storing back
             NOLock                        -> Don't lock filelist (use in
                                              conjunction with CTL)

PUT          fn ft <filelist <NODIST>>     Update a file you own
             <CKDATE=NO>                   -> Accept request even if
                                              current version of the file
                                              is more recent than the
                                              version you sent
             <DATE=yymmddhhmmss>           -> Set file date/time
             <PW=password>                 -> Supply your password for
                                              command authentication
             <RECFM=F <LRECL=nnn>>         -> Select fixed-format file (not
                                              to be used for text files)
             <REPLY-TO=user>               -> Send reply to another user
             <REPLY-TO=NONE>               -> Don't send any reply
             <REPLY-VIA=MSG>               -> Request reply via interactive
                                              messages, not mail
             <"parameters">                -> Special parameters passed to
                                              FAVE routine, if any
             Standard parameters supported for
             all files:
             TITLE=file title              -> Change file "title" in
                                              filelist entry

REFRESH      filelist <(options>           Refresh a filelist you own
             NOFLAG                        -> Don't flag files which have
                                              changed since last time as
                                              updated (for AFD/FUI)

UNLOCK       fn FILELIST                   Unlock filelist after a GET with
                                           the CTL option if you decide not
                                           to update it after all
```

```
List management functions
-------------------------
Commands that support the QUIET keyword are marked (*)

ADD(*)       listname user <full_name>        Add a user to one of your lists,
                                              or update his name
             listname DD=ddname               -> Add multiple users, one
                                                 address/name pair per line
             listname DD=ddname IMPORT <PRELOAD>
                                              -> Bulk add multiple users, one
                                                 address/name pair per line
                                                PRELOAD option loads addresses
                                                 into memory before adding to
                                                 speed up operation

ADDHere(*)                                    Same as ADD, but never forwards
                                              the request to a possibly closer
                                              peer

CHANGE(*)    listname|* oldaddr|pattern newaddr|*@newhost
                                              Change a subscriber's address
                                              (List owner's version)

DELete(*)    listname user <(options>         Remove a user from one of your
                                              lists, or from all local lists
             listname DD=ddname <BRIEF>       Bulk delete multiple users, one
                                              address per line.  BRIEF option
                                             omits verbose response of who was
                                              deleted.
             Options:
             GLobal                           -> Forward request to all peers
             LOCal                            -> Don't try to forward request
                                                 to closest peer if not found
                                                 locally
             TEST                             -> Do not actually perform any
                                                 deletion (useful to test
                                                 wildcard patterns)

EXPLODE      listname <(options>              Examine list and suggest better
                                              placement of recipients,
                                              returning a ready-to-submit MOVE
                                              job
             BESTpeers n                      -> Suggest the N best possible
```

```
                                                   peers to add
                  Detailed                      -> More detailed analysis
                  FOR node                      -> Perform analysis as though
                                                   local node were 'nodeid'
                  PREFer node                   -> Preferred peer in case of
                                                   tie (equidistant peers)
                  SERVice                       -> Check service areas are
                                                   respected
                  With(node1 <node2 <...>>>)    -> Perform analysis as though
                                                   specified nodes ran a peer
                  WITHOut(node1 <node2 <...>>>) -> Opposite effect

FREE              listname <(options>           Release a held list
                  GLobal                        -> Forward request to all peers

GET               listname <(options>           Get a copy of a list in a form
                                                suitable for editing and storing
                                                list and lock it
                  GLobal                        -> Forward request to all peers
                  HEADer                        -> Send just the header; on the
                                                   way back, only the header
                                                   will be updated
                  NOLock                        -> Do not lock the list
                  OLD                           -> Recover the "old" copy of the
                                                   list (before the last PUT)

HOLD              listname <(options>           Hold a list, preventing new
                                                postings from being processed
                                                until a FREE command is sent
                  GLobal                        -> Forward request to all peers

LISTs             OWNed                         Send back a list of local lists
                                                owned by the invoker
                  MODerated                     Send back a list of local lists
                                                moderated by the invoker

MOVE(*)           listname user <TO> node       Move a subscriber to another
                                                peer
                  listname DD=ddname            -> Move several subscribers to
                                                   various peers

PUT               listname LIST                 Update a list header from the
                                                file returned by a GET command

PUTALL            listname LIST                 Similar to PUT but lets you
                                                store the entire list, header
```

```
                                        and subscribers together

     Query        listname <WITH options> FOR user  Query the subscription options
                                                    of another user (wildcards are
                                                    supported)
                  *        <WITH options> FOR user  Searches all the lists you own

     SET(*)       listname options <FOR user>       Alter the subscription options
                  *                                 of another user or set of users
                                                    (when using wildcards)
                  Additional options for list owners:
                  NORENEW/RENEW                     -> Waive subscription
                                                       confirmation for this user
                  NOPOST/POST                       -> Prevent user from posting to
                                                       list
                  EDITor/NOEDITor                   -> User may post without going
                                                       through moderator
                  REView/NOREView                   -> Postings from user go to list
                                                       owner or moderator even if
                                                       user is allowed to post

     STats        listname (RESET                   Resets statistics for the list

     UNLOCK       listname                          Unlock a list after a GET, if
                                                    you decide not to update it
                                                    after all

     Site management functions
     -------------------------

     CMS          command_text                      Issue a CMS command and get the
                                                    last 20 lines of response sent
                                                    back to you, the rest being
                                                    available from the console log

     CP           command_text                      Issue a CP command and get up to
                                                    8k of response data sent to you
                                                    (the rest is lost)

     DATAbase     function                          Control operation of databases:
                  DISAble                           -> Disable interactive database
                                                       access, without shutting down
                                                       existing sessions
                  ENAble                            -> Re-enable interactive access
                  SHUTDOWN                          -> Shut down all interactive
                                                       database sessions, and
```

		disable interactive access
INSTALL	function	Software update procedure:
	CLEANUP shipment	-> Remove an installed shipment from the log
	CLEANUP BEFORE dd mmm yy	-> Remove all shipments installed before that date
	PASSWORD shipment PW=instpw	-> Confirm installation of a shipment, when requested by LISTSERV
	RELOAD shipment	-> Attempt to reload a shipment which failed due to a disk full condition
	STATus	-> Get a list of installed "shipments"
LISTs	OWNed <BY> userid@host	Send back a list of local lists owned by the address supplied (wildcards acceptable)
	MODerated <BY> userid@host	Send back a list of local lists moderated by the address supplied (wildcards acceptable)
NODESGEN	<WTONLY>	Regenerate all LISTSERV network tables, or just compile the links weight file (debugging command)
OFFLINE		Suspend processing of reader files and disable the GET command
ONLINE		Cancel OFFLINE condition
PUT	listname LIST	Create a new list
PUTC	fn ft <fm|cuu|dirid> <RECFM=F LRECL=nnn>	Update a CMS file on one of LISTSERV's R/W minidisks; note that this is similar to SENDFILE + RECEIVE or LINK + COPYFILE and should NOT be used to update file-server files
PWC	function	Password file management:
	ADD user newpw	-> Define a password for the

```
                                                     specified user
             DELete user                          -> Delete password for that user
             Query  user                          -> Query the password of the
                                                     specified user

REGister     name|OFF FOR user                    Set a user's SIGNUP FILE entry

SENDFile     fn ft <fm|cuu|dirid>                 Request the server to send you a
                                                  file from one of its disks

SERVE        user OFF                             Permanently suspend access from
                                                  an abusive user or gateway
                                                  (restore with 'SERVE user')
             user OFF DROP                        Permanently suspend access from
                                               an abusive user or gateway and drop
                                                all further inbound mail from this
                                                  sender on the floor
                                                  (restore with 'SERVE user')
            LIST                               Return a list of all addresses that
                                                are currently served off or which
                                                  are spam-quarantined

SF                                                Same as SENDFILE

SHOW         BENCHmarks                           -> CPU/disk/paging benchmarks
             EXECLoad                             -> Statistics about EXECLOADed
                                                     REXX files
             LSVFILER                             -> Statistics about LSVFILER
                                                     file cache
             PREXX                                -> Statistics about PREXX
                                                     functions usage
             STORage                              -> Information about available
                                                     disk space and virtual
                                                     storage

SHUTDOWN     <REBOOT|REIPL>                       Stop or reboot the server (the
                                                  two options are synonyms)

STOP                                              Same as SHUTDOWN

Note: some debugging commands and options have been omitted.

Syntax of parameters
--------------------
filelist  = 1 to 8 characters from the following set: A-Z 0-9 $#@+-_:
fformat   = Netdata, Card, Disk, Punch, LPunch, UUencode, XXencode, VMSdump,
            MIME/text, MIME/Appl, Mail
fn        = same syntax as 'filelist'
ft        = same syntax as 'filelist'
full_name = firstname <middle_initial> surname (*not* your e-mail address)
host      = Internet hostname
listname  = name of an existing list
node      = BITNET nodeid or Internet hostname of a BITNET machine which
            has taken care of supplying a ':internet.' tag in its BITEARN
            NODES entry
pw        = A password with characters from the set: A-Z 0-9 $#@_-?!|%
user      = Any valid Internet address not longer than 80 characters; if
            omitted, the 'hostname' part defaults to that of the command
            originator
```

Appendix B: Sample Boilerplate Files

So-called "boilerplate" files are handy for list owners who find themselves answering the same questions over and over again. Usually these questions refer to basic LISTSERV usage. You can save yourself a lot of time by keeping files on-line such as the ones below to cut and paste into replies. Feel free to edit these to suit your own tastes (or compose your own!).

(Be sure to insert the appropriate list names and LISTSERV hosts as required.)

Subscription Requests Sent to the List

LISTSERV subscription requests need to be sent to the LISTSERV address rather than to the list itself. You do this by sending mail to LISTSERV@*host* with the command

```
SUB listname Your Name
```

as the body of the message. If you are unfamiliar with LISTSERV and its associated commands, I suggest that you add the commands

```
INFO GENINTRO
INFO REFCARD
```

as additional lines of your message. LISTSERV will then send you a file containing a General Introduction to Revised LISTSERV that will give you some instruction on the service and a Quick Reference Card of the various commands.

Thanks for your interest. If you have trouble subscribing with this method, please let me know and I will attempt to help.

If you have `Subscription= Open,Confirm` you might want to add the following:

Because LISTSERV verifies mailing paths for new subscribers (a process not implemented when the list administrator adds people manually), it is preferred that users subscribe themselves by the method outlined above.

Sending Other Commands to the List or to the *-REQUEST Address for the List

On Sun, 20 Mar 1994 22:44:25 -0800 (PST) you said:
>"INFO REFCARD"

*You need to redirect LISTSERV commands like the above (minus the double quotes by the way), to <listserv@host>. The *-request type addresses are for reaching the person that run the list.*

[another version:]

You've sent mail that appears intended for a mailing list to one of the addresses used to reach the list owner. That is, rather than sending your mail to listname@host you've sent the note to OWNER-listname@host or listname-REQUEST@host. Please re-send the appended note to the list address if you haven't done so already.

----------- *original message follows:*

Unsubscribed User Still Getting Mail

Use this one after you have done an exhaustive search of the list and determined that the person simply isn't on the list. Typically the user is subscribed to a redistribution list and doesn't realize it.

Unfortunately I can't unsubscribe you from listname because you aren't subscribed to listname@host. I have run a check to see if you might be subscribed under a slightly different network address and have not found anything.

There are a few possibilities you should look into. Are you getting a digest? Are you perhaps getting a redistributed copy of postings, possibly from a redistribution list? If you look at the mail headers, and there is an indication that you may be getting the postings from another source, you will have to ask the people that run the other source to remove you from their list.

Use this one if the user unscubscribed successfully, BUT they are still getting list mail.

I've done a search of listname for a possible duplicate subscription for you and have not found anything. It's possible that the mail you are receiving was actually sent from listname before your unsubscribe request was processed. Depending on the routing, it could take anywhere from 24 to 48 hours for all such messages to get through the network, so please be patient.

Quoted Replies Include Message Headers Causing them to Bounce

When quoted replies from a user's mail client includes message headers in the mail body, the reply will be bounced back to the list owner.

If you forward such messages to the list, or back to the sender, you can add the following at the beginning. I ran across this one in the CBAY-L mailing list archives, and edited it slightly.

This message was sent to me from LISTSERV instead of the list. The original message included the entire message being replied to, including the mail headers. These headers in the body pointed to the list itself. LISTSERV has mail-loop avoidance code and when it sees headers that it thinks it generated itself, it bounces the message to the list owner. If your mail client does this, please remember to delete such "included header lines" from the body of your list replies.

------original message------

D.6.

Add the following to ask a postmaster for help on a bounced address you've set to NOMAIL; don't forget to include a cc: to the bounced address.

Postmaster(s),

Can you shed any light on the following error message? Please let me know what you find as I have removed the e-mail address from the mailing list in question and would like to restore service as soon as is feasible.

Thanks.

Aside to user: Should this note reach you (meaning that the mail delivery problems have been resolved), you can re-enable your mail service by sending mail to listserv@host with the following command: `SET listname MAIL`

Delivery Error with Unknown User Account

If you get a delivery error that doesn't specify which user account is causing the bounce, then use the following:

Postmaster,

I received the appended mail delivery report from your system and need help isolating the e-mail address that is causing the error. That is, there are multiple recipients from your system on the list but the delivery error doesn't explicitly mention any of the users on the list. I'm including a list of subscribers from your system. If any of them are no longer valid, or aren't usable address for some other reason, please let me know.

---- list of e-mail address on the indicated list follows:

Setting a User to DIGEST because of Bouncing Mail

If you've set a user to DIGEST because of bouncing mail, and the user is asking why he/she is now getting the digest, then use the following:

I received a mail delivery error for your address and issued a

```
SET listname DIGEST
```

on your behalf to minimize the number of bounce messages. I also sent a copy of the error I received to your postmaster (or the postmaster of the mail gateway that generated the error), asking for help. And since such delivery problems are often transient, I CC'd a copy of that note to your address, and included instructions for turning your mail back on. Apparently I didn't hear anything from your postmaster, or he/she said not to turn your mail back on until the problem was resolved. If they had responded and said the problem was resolved, I would have set you back to MAIL.

The other possibility is that I received a mail message indicating that there was some temporary problem with your account. In that case, for example if you had exceeded your disk quota and couldn't receive any new mail, I would not have bothered your postmaster. I have a different form letter that I send when that happens. Again it explains what has occurred and includes instructions for re-enabling your mailing list subscription. But I only send that one to the address the list member. Either way, whatever was wrong has been corrected, and you'd probably like to start receiving mail again. So, here's how you can restore your mail service. If you have any problems doing so, please let me know and I'll help. But since I don't know which of the three mail service options you had chosen before, I can't do it for you without guessing. You can re-enable your mail service by sending mail to listserv@host with one of the following commands

```
SET listname MAIL
SET listname DIGEST (if you want digest-format mail)
SET listname INDEX (if you want digest-index-format mail)
```

*in the *body* of the mail message. Please note that these settings are mutually exclusive, you can't choose more than one.*

A Sample "Your List has been Created" Boilerplate

Mailing List Setup Confirmation

I have created the XXXXX-L list on LISTSERV.MYHOST.COM per your setup sheet.

If you are new to LISTSERV, you will probably want to download L-Soft's Quick Start manual for list owners. Simply point your web browser to

```
http://www.lsoft.com/manuals/QS-index.html
```

and view online or choose the version appropriate for your word processor or viewer.

Formal documentation of list owner commands and other list ownership issues can be found in the List Owner's Manual, which is available at the URL

```
http://www.lsoft.com/manuals/ownerindex.html
```

Per your list service agreement, support for your list is handled through a mailing list, LIST-SUPPORT@LISTSERV.MYHOST.COM. You have been added to that list. Please direct all support questions to the LIST-SUPPORT list.

You may also be interested in subscribing to the LSTOWN-L mailing list for LISTSERV list owners. To do so, send a mail message to LISTSERV@LISTSERV.NET with the command

```
SUB LSTOWN-L Your Name
```

in the body (not the subject) of the message. There are a number of extremely experienced LISTSERV list owners subscribed there who are more than willing to share their expertise. Don't hesitate to ask for help.

You now need to instruct LISTSERV to add personal passwords for the list owner account(s). These passwords are used to validate privileged commands (such as the PUT command for storing your list "header" on the server after making changes to it). This is done by sending mail from each account to LISTSERV@LISTSERV.MYHOST.COM with the command

```
PW ADD password
```

(again, "password" is whatever you want it to be) in the body of the message. LISTSERV will request confirmation of this operation; simply reply to the confirmation request with the word "ok".

Adding these passwords will considerably lessen the chance that someone will "spoof" mail from you to make changes on your list. It is very unlikely that this will happen, but it never hurts to be cautious.

Sincerely,

Joe Smith

LISTSERV Maintainer

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