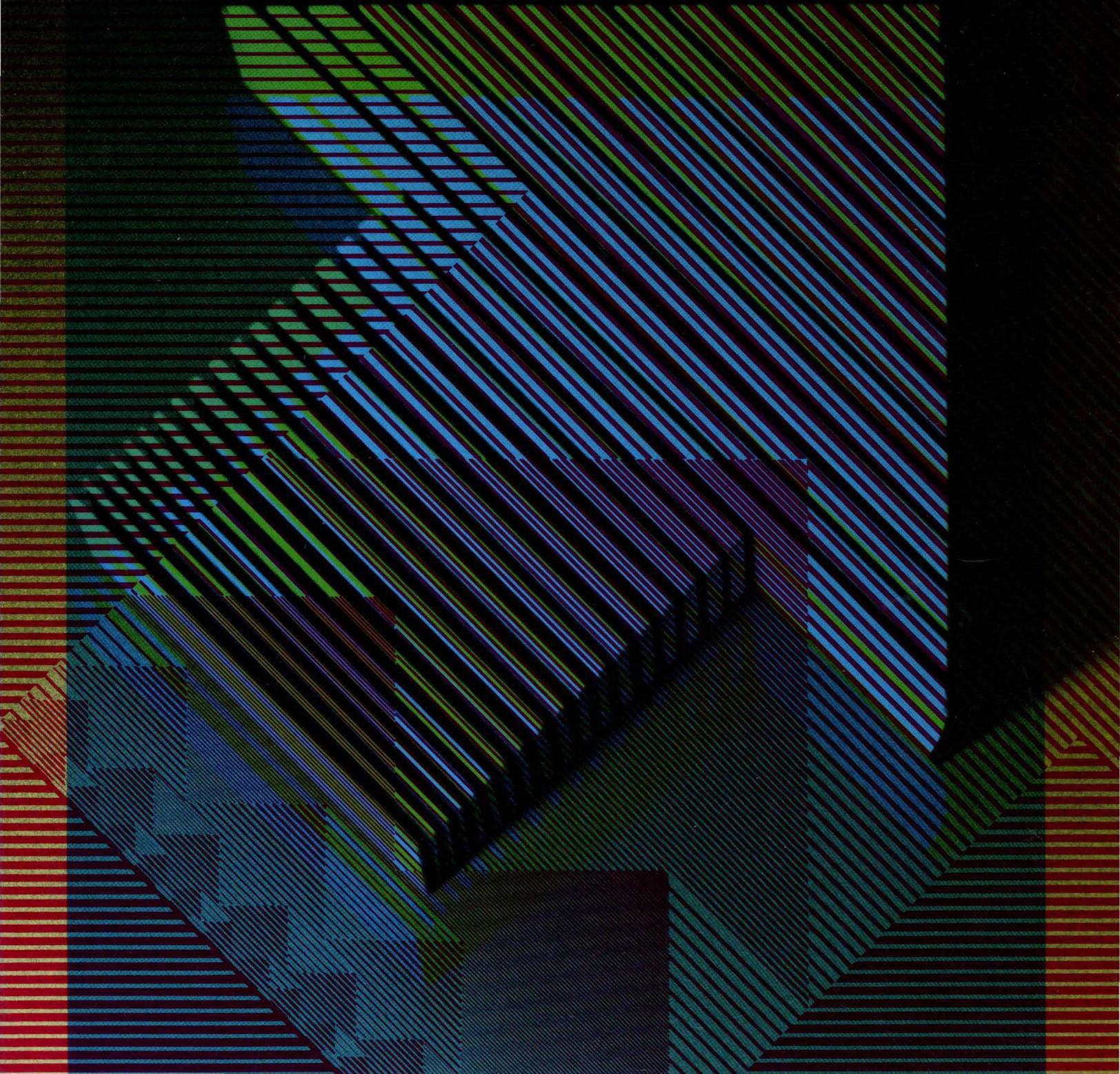


6 Communicating with Other Users

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February 1985

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PART I.

Zmail Reference Guide

1. Overview of Zmail

Zmail is a display-oriented mail system for the Lisp Machine. Using Zmail, you can send and receive mail, archive your mail in disk files, and operate on groups of messages selected according to very flexible criteria. Note that Zmail is not an interactive message ("send") system; that facility is called Converse (press SELECT C and then HELP for more information). See the section "Converse", page 97.

Zmail uses the Zmacs editing commands for composing and editing messages. See the section "Zmacs Manual" in *Text Editing and Processing*.

1.1 Format Conventions for Zmail Commands

Zmail command descriptions are formatted as follows:

Command (How) This is the description of the command *Command*. *How* tells how to invoke the command; here are the different ways:

Menu	The command is an item to be clicked on in the top-level command menu. See the section "Top-level Interface to Zmail", page 13. See below for an example description.
Editor Menu	(Mail-mode commands only.) The command is an item to be clicked on in the editor menu that you get by clicking right in mail mode. See the section "Mail Mode in Zmail", page 37.
Kbd	The command is a character or key to press at the keyboard, such as <code>c-m-SPACE</code> or <code>ABORT</code> . See below for an example description.
(<i>m-X</i>)	The command is a (<i>m-X</i>) command. Type <i>X</i> or (<i>m-X</i>) followed by the command, exactly as written. See below for an example description that includes more information on (<i>m-X</i>).
Summary Window	The command is a click to be made on the summary window, such as Click left on Summary Line. See the section "Top-level Interface to Zmail", page 13.

Next (Menu) This is what a description of the Next command would look like.

[Next] This would describe click left on [Next].

	[Next (M)]	This would describe click middle.
	[Next (R)]	And this would describe click right.
<i>n</i> J (Kbd)		This is what the description for the J command looks like. The "n" means that J can take an optional numeric argument. To give the argument, type an integer (positive, negative, or zero) before typing J. (The number is echoed in the mode-line window. If you mistyped the number you were entering, type c-G (before typing J) and start over.)
<i>n</i> Move to Default Previous Point (<i>m-X</i>)		This is the description for a <i>m-X</i> command that takes a numeric argument. To give an argument, type an integer, then X or <i>m-X</i> , then the words Move to Default Previous Point, then press RETURN. After you type the X, the mode line changes to a Zwei minibuffer into which you type the <i>m-X</i> command. (If you have typed an argument, 53, for example, a note appears saying "Arg = 53".)
		While you are typing in the minibuffer, there are several special characters:
	RUBOUT	Delete last character typed.
	ABORT	Abort the <i>m-X</i> command. The minibuffer disappears and Zmail is ready for a new command.
	COMPLETE	Complete as much of the command as possible. (For example, typing "mov COMPLETE" would complete to "Move", because there are several commands beginning with "move". If you then typed " to d COMPLETE", this would complete to "Move to Default Previous Point".)
	RETURN	Perform completion (like COMPLETE) and then execute the command (if it is able to do completion).
	?	Show possible completions there are for the partial command being entered.
	HELP	Give information on the special characters and show possible completions.

There are other special characters and commands available in the minibuffer. See the section "Zmacs Manual" in *Text Editing and Processing*.

m-X is not the only command that uses the minibuffer; most commands that prompt for keyboard input (for example, for entry of filenames) use the minibuffer. Such

commands often specify a default for the data they prompt for; if so, you can get the default by just pressing RETURN to the minibuffer. Commands or subcommands that use the minibuffer can always be aborted by pressing ABORT when the minibuffer appears.

One point to keep in mind is that many of the commands have options and defaults that you can customize for yourself. See the section "Setting and Saving Zmail Options", page 57.

1.2 Online Help

Some online documentation is available. This comes in four forms:

Explanations displayed automatically

Often, useful information about what Zmail is doing is automatically displayed on the screen. This information is usually displayed in the mode line.

Mouse documentation line

The mouse documentation line tells what clicking the mouse buttons would do with the mouse in its current position. Moving the mouse around the screen, you can read short documentation for many commands.

HELP key

While at top level, documentation on any top-level command is available by pressing HELP and then typing a character or key, or clicking on a command from the command menu. For example, to get information on the N command, press HELP N. (See Figure 1.)

For information on the Next command, press HELP and then click (any button) on [Next]. (See Figure 2.)

To learn about the Move to Default Previous Point ($m-x$) command, press HELP X and then type Move to Default Previous Point and press RETURN. (See Figure 3, which shows the screen just before RETURN was pressed.)

Some of the documentation states that some command normally does such-and-such, but "is controlled by *...-...-...*". What this means is that the exact action performed by the command is an option that you can set in your profile. See the section "Customizing Zmail", page 57.

If you press HELP *, you get a list of Zmail commands and short explanations. The command names you are given are the $m-x$ names; the list also tells if the command is available from the keyboard or command menu.

While in mail or edit mode, you can get documentation on the keyboard versions of mail or edit mode commands by pressing `HELP C` for Kbd commands, or `HELP D` for `m-X` commands, followed by the command itself.

Apropos (`m-X`) command

This command prompts you for a character string and returns a list of `m-X` commands containing that string in their name. The Apropos (`m-X`) command can be used in mail or edit mode also.

No.	Lines	Date	From>To	Subject or Text
70:	15	21-Dec	LANG+dess	Acting Manager
71:	28	21-Dec	JWALKER+	Re: blank pages in Rel. 5 documentation
72:	36	22-Dec	+IRWIN,Doc	Rel-5 Doc.
73:	11	22-Dec	+writers	blank pages
74:	25	22-Dec	LANG+IRWIN,Doc	Rel-5 Doc.
75:	28	22-Dec	RH+SYMBOLICS	Inter-company relese December 22, 1983
76:	12	22-Dec	CEC+	Phone Number
77:	58	26-Dec	lang+r11	Documentation warehouse space
78:	42	27-Dec	JAYNE+scrc	Insurance Open Enrollment
79:	8	28-Dec	abc+Znailtest	test
80:	19	28-Dec	+lerner	Znailtest CCCC
81:	12	28-Dec	+CEC	Znail test
82:	14	28-Dec	steve+scrc	Unused Airline Tickets
83:	15	28-Dec	abc+Znailtest	test
84:	12	29-Dec	sned+lispn-users	COMPLETE on Cupid
85:	9	29-Dec	+	artwork
86:	18	29-Dec	+lerner	nore Znailtest
87:	9	29-Dec	Znailtest+Znailtest	
88:	16	29-Dec	+	[Znailtest at SCRC-VIXEN:]
89:	25	29-Dec	DODDS+LispM-Users	New World for the New Year

Profile	Quit	Delete	Undelete	Reply
Configure	Save	Next	Previous	Continue
Survey	Get inbox	Jump	Keywords	Mail
Sort	Map over	Move	Select	Other

Select command by typing character or mousing menu, or type '*' for all: N is Next, implemented by COM-ZMAIL-NEXT:
Move to next message.
Skips deleted messages.
Middle normally moves to the end, but is controlled by *NEXT-MIDDLE-MODE*.
Right for a menu.

Received: from scrc-yukon by scrc-vixen with CHAOS; 29 Dec 1983 14:15:55-EST
Received: from SCRC-SEINE by SCRC-YUKON with CHAOS; Thu 29-Dec-83 14:16:38-EST
Date: Thursday, 29 December 1983, 14:16-EST
From: ??? <Znailtest at SCRC-VIXEN>
Subject:
To: Znailtest at SCRC-VIXEN

This is an example.

Message
Zmail VIXEN: /usr2/abc.mailbox Msg #88/89 {}

Figure 1. Help for a Keyboard Command

No.	Lines	Date	From*To	Subject or Text
71:	15	21-Dec	LANG+dess	Acting Manager
72:	28	21-Dec	JWALKER+	Re: blank pages in Rel. 5 documentation
73:	36	22-Dec	*IRWIN,Doc	Rel-5 Doc.
74:	11	22-Dec	*writers	blank pages
75:	26	22-Dec	LANG*IRWIN,Doc	Rel-5 Doc.
76:	28	22-Dec	RN*SYMBOLICS	Inter-company release December 22, 1983
77:	12	22-Dec	CEC+	Phone Number
78:	58	26-Dec	lang+rll	Documentation warehouse space
79:	42	27-Dec	JAYNE+scrc	Insurance Open Enrollment
80:	8	28-Dec	abc+Znailtest	test
81:	19	28-Dec	+lerner	Znailtest XXXX
82:	12	28-Dec	+CEC	Znail test
83:	14	28-Dec	steve+scrc	Unused Airline Tickets
84:	15	28-Dec	abc+Znailtest	test
85:	12	29-Dec	sned+lispn-users	COMPLETE on Cupid
86:	9	29-Dec	+	artwork
87:	10	29-Dec	+lerner	nore Znailtest
88:	9	29-Dec	Znailtest+Znailtest	
89:	16	29-Dec	+	[Znailtest at SCRC-VIXEN:]
90:	25	29-Dec	DODDS+LispM-Users	New World for the New Year

Profile	Quit	Delete	Undelete	Reply
Configure	Save	<u>N</u> ext X	Previous	Continue
Survey	Get inbox	Jump	Keywords	Mail
Sort	Map over	Move	Select	Other

Select command by typing character or nousing menu, or type '*' for all: N is Next, implemented by COM-ZMAIL-NEXT:
 Move to next message.
 Skips deleted messages.
 Middle normally moves to the end, but is controlled by *NEXT-MIDDLE-MODE*.
 Right for a menu.

■
 Test of reply mode.

Message
 Zmail VIXEN: /usr2/abc.mailbox msg #88/90 ()

Figure 2. Help for a Menu Command

2. Zmail Architecture

Zmail runs in two processes. The foreground process is the main process; the background process performs file operations. Only one main Zmail window exists; by contrast, many editor windows or Lisp Listener windows can coexist. Input into text buffers is processed by Zwei, the text-handling subsystem used by the editor. Zmail submits mail to and receives mail from a *mailer* program running on a host computer.

2.1 Conceptual Architecture

The objects Zmail manipulates are of the following types:

- messages* Composed of a *text field* and a number of *header fields*. The text field is the body of the message, while the headers supply routing information such as sender, recipient(s), date, and so forth. Messages have a variety of *properties* (for example, Answered, meaning that you have replied to the message) and can have any number of *keywords*, which are simply user-defined tags. The message you are examining at any particular time is called the *current message*.
- mail buffers* Named sequences of messages. Each mail buffer is associated with a disk file from which it was read, or to which it will be saved, or both. It bears the same name as its associated file. Each mail buffer stores various attributes specifying its format and other properties.
- mail collections* Named sequences of messages drawn from one or more mail buffers. (A single message exists in exactly one buffer and any number of collections.) The name of the collection indicates how it was created. Mail collections allow you to group related messages from one or more mail buffers. Collections cannot be saved on disk. However, you can copy the collection to a buffer and save the buffer.
- mail sequences* Either buffers or collections. The last mail sequence selected is called the *current mail sequence*.
- mail files* Mail buffers saved on disk. When mail buffers are invoked, their associated files are automatically read in if they are not present already; you never actually manipulate the file itself. Mail buffers and mail files are analogous to editor buffers and text files.

inbox files (or inboxes)

The files in which new mail appears. When you ask for your new mail, the contents of your inbox are appended to your *default mail file* and displayed. (Thus, unless you delete or move them, messages are saved in your default mail file. Zmail does not use a single file as both default mail file and inbox, as some mail systems do.)

Figure 4 shows the relationships among objects of the above types.

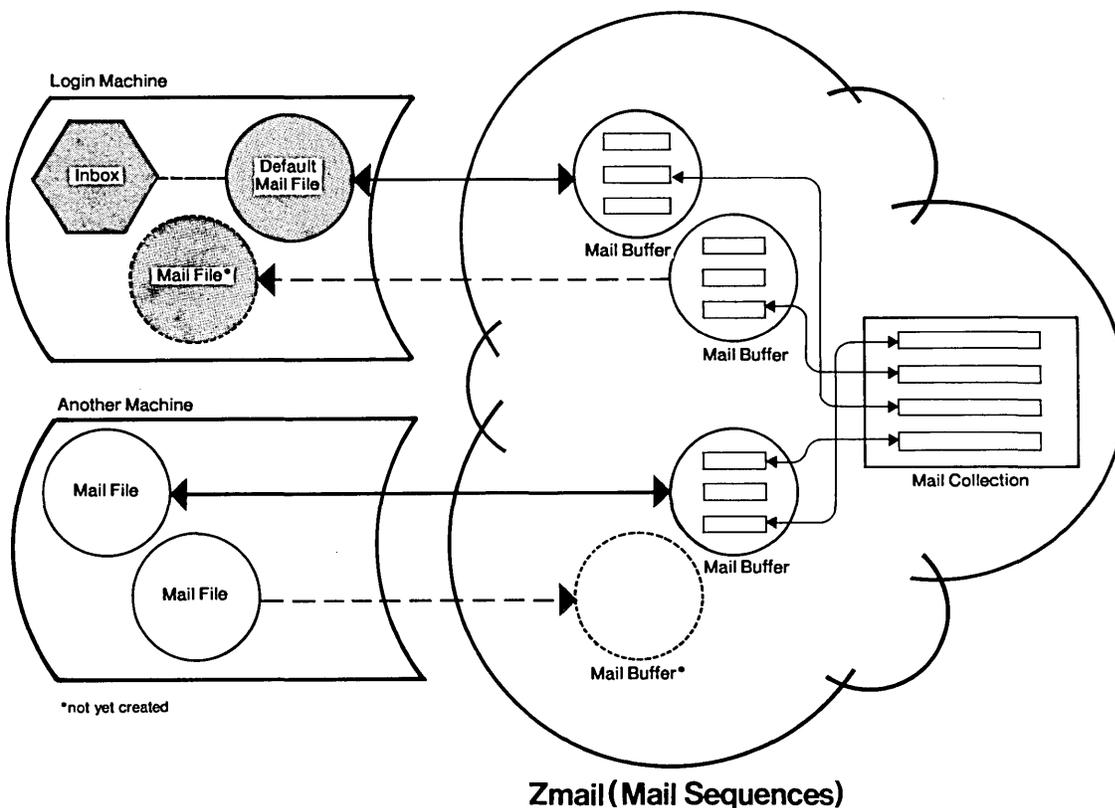


Figure 4. Messages, buffers, files, and collections.

2.1.1 Zmail Inboxes

The relationship of Zmail inboxes to other Zmail objects is a dynamic one, defined by the operation of the [Get inbox] command, which works like this:

1. Your default mail file is read into a mail buffer (if it has not been read in already), and that buffer is selected as the current buffer.

2. Zmail checks to see if your inbox exists. If not, you have no new mail and Zmail displays a message to that effect. If your inbox does exist, it is renamed according to the limitations of the file system, and in such a way that it is evident that it is Zmail's temporary file, and its contents are read in by the background process and appended to the mail buffer.
3. While you read your mail, the background process saves the new version of the buffer onto the disk and deletes the renamed inbox. When this is done can be altered using [Profile].

When Zmail checks to see if your inbox exists, it checks first for the existence of a temporary file. Thus the renaming ensures that no mail is lost due to a host system crash. The next use of [Get inbox] after a crash results in the inclusion of the renamed inbox, and only after that is processed, the inbox containing newer mail.

2.2 Top-level Interface to Zmail

Zmail accepts input from the keyboard and the mouse. Output is displayed on, and mouse input is accepted from, the display shown in Figure 5. This display has four regions, all of which are mouse-sensitive:

The *Summary Window* displays a line for each message in the current sequence, with an arrow indicating the current message.

The *Command Menu* provides a mouse-sensitive menu of the most useful top-level commands. Some of these commands (for example, [Delete]) apply only to the current message. In this manual, when we say, for example, "[Get inbox]", we mean the Get inbox command in this menu.

The *Message Window* displays the current message. The message window is an editor buffer.

The *Mode Line* gives the program status and information about the current message, including its properties and keywords.

The various information included is:

<i>Program status</i>	The mode the program is in. Possibilities are:
Zmail	Zmail is at top level.
Zmail Mail	Zmail is in mail mode, in which mail is sent. Following the word Mail is the word (Text), which identifies the mode in which the message to be sent is being edited. The editor mode is followed by either Message, Headers, or Mail, indicating which window the cursor is in. (For

a description of these windows, see the explanation of the `c-X 0`, `c-X 1`, and `c-X 2` commands. See the section "Configuring and Selecting Zmail Windows", page 38. See the section "Sending Your Mail" in *User's Guide to Symbolics Computers*. See the section "Replying to Mail" in *User's Guide to Symbolics Computers*.

Zmail Profile	Zmail is in Profile mode, in which you can customize Zmail. See the section "Customizing Zmail", page 57. Following the word Profile is the name of your init file, in which the customizations are stored.
Zmail Marking	Zmail is in Marking mode, executing the mark-survey command.
Zmail Editing Message	Zmail is in Editing Message mode, in which you can edit your copy of a previously received message.

Current mail file The name of the current mail file, or "No current mail file" if there is none.

Current message number and total number of messages

Message properties Properties describing the current message, in parentheses. Possible properties are:

unseen	message is now being seen for the first time
deleted	message has been marked for deletion
recent	message was new mail in the current session
last	message is the last in the file
filed	message has been copied to another file
answered	message has been replied to
forwarded	message has been forwarded
redistributed	message has been redistributed
badheader	message has a bad header

Keywords Any keywords that have been saved on this message, in braces.

The Summary and Message windows can both be scrolled using the *scroll bar*. See the section "Scrolling". The Message window can also be scrolled by pressing `SPACE` or by clicking left on the `--More--` message in the mode line.

The screenshot shows the Zmail window interface with the following sections:

- Summary Window:** A list of messages with columns for No., Lines, Date, From+To, and Subject or Text. The list includes messages 46 through 67, with message 67 selected.
- Command Menu:** A menu with options: Profile, Configure, Survey, Sort, Quit, Save, Get inbox, Map over, Delete, [Next] X, Jump, Move, Undelete, Previous, Keywords, Select, Reply, Continue, Mail, Other.
- Message Window:** The content of the selected message (67), including headers (Date, From, To, Subject, Cc) and the body text.
- Mode Line:** A line showing the current message and window state: Zmail SCRC:<JLH>JLH.BABYL Msg #67/67 (last) ()
- Mouse Documentation Line:** A line showing the current date and time: 01/05/83 14:57:10 JLH USER: tyi

Figure 5. Main Zmail window.

2.2.1 Zmail Command Documentation

Command documentation is available online in several forms:

- Explanations displayed automatically: usually appear below the mode line.
- Mouse documentation line.
- HELP key: provides short command documentation.

- **Apropos (m-X):** lists commands whose name contains a given string.

3. Entering and Exiting Zmail

3.1 Entering Zmail

Zmail can be started in several ways: by pressing `SELECT M` (the most common way), by typing `(zmail)` to a Lisp Listener, or by using `[Mail]` from the System menu.

When started via `(zmail)`, Zmail begins reading in your primary mail file and file of new mail (if any). See the section "Commands for Reading Mail", page 46.

When invoked using the `SELECT` key or System menu, Zmail displays an explanatory message and allows commands that do not require a mail file. Use `[Get inbox]` to read in your mail file; use `[Mail]` to send mail.

3.2 Exiting Zmail

The usual way to exit Zmail is to save your mail file using `[Save]`, and then select another program using the `SELECT` key or the System menu.

Save (Menu)

`[Save]` Expunge (that is, get rid of all messages marked for deletion) and save all loaded mail files that have been modified since the last save. See the section "Zmail Message Deletion Commands", page 55.

`[Save (M)]` Expunge the current mail file.

`[Save (R)]` Pop up a multiple choice Expunge/Save/Kill window. (See Figure 6.)

Each row of the menu lists a loaded mail file and boxes for three choices: Expunge, Save, and Kill. An `x` in the Expunge box means expunge the file; an `x` in the Save box means save the file; and an `x` in the Kill box means kill the loaded copy — *not* the disk copy — of the file, that is, make Zmail forget about the file. The initial configuration of `x`'s and blanks shows what using `[Save]` would do, which is to expunge files with deleted messages and save files modified since the last save.

Clicking left or right on a box complements its

status, removing an x if present, adding one if not. Marking a file for expunging or saving clears the Kill box; marking a file for killing clears the Save and Expunge boxes. Clicking on Do It performs the selected Expunge, Save, and Kill operations; clicking on Abort aborts the Save files command.

s (Kbd) See the description of [Save].

Quit (Menu)

[Quit] Expunge and save loaded mail files just like [Save], then return from Zmail to the window from which it was called.

[Quit (R)] Pop up a menu of save and exit options. (See Figure 7.)

The menu has two columns; one entry in each column is highlighted. The Save column has the following options:

Don't Save	Do not save any files before exiting.
Ask	Pop up an Expunge/Save/Kill menu to determine which files to expunge, save, or kill. See the description of [Save (R)].
Save	Expunge and save loaded mail files like [Save].

The Exit column has the following options:

Quit	Return from Zmail to the window from which it was called, burying the Zmail window.
Logout	Log out from the Lisp Machine, then return to the calling window.

Initially, Save and Quit are highlighted; this combination is equivalent to using [Quit]. Clicking on an unhighlighted entry highlights it and unhighlights the others in its column.

Clicking on Do It does the saving and exiting indicated in the menu; clicking on Abort aborts the Quit command.

- Q (Kbd) See the description of [Quit].
- c-z (Kbd) Immediately return from Zmail to the window from which it was called without saving any files. This is equivalent to the combination Don't Save - Quit in the [Quit (R)] menu; it is like c-z in the editor.

No.	Lines	Date	From>To	Subject or Text
70:	15	21-Dec	LANG+dess	Acting Manager
71:	28	21-Dec	JWALKER>	Re: blank pages in Rel. 5 documentation
72:	36	22-Dec	+IRWIN,Doc	Rel-5 Doc.
73:	11	22-Dec	+writers	blank pages
74:	26	22-Dec	LANG+IRWIN,Doc	Rel-5 Doc.
75:	28	22-Dec	RH+SYMBOLICS	Inter-company release December 22, 1983
76:	12	22-Dec	CEC+	Phone Number
77:	58	26-Dec	lang+r11	Documentation warehouse space
78:	42	27-Dec	JAYNE+scrc	Insurance Open Enrollment
79:	8	28-Dec	abc+Znailtest	test
80:	19	28-Dec	+lerner	Znailtest <Znailtest>
81:	12	28-Dec	+CEC	Znail test
82:	14	28-Dec	steve+scrc	Unused Airline Tickets
83:	15	28-Dec	abc+Znailtest	test
84:	12	29-Dec	sned+lispn-users	COMPLETE on Cupid
85:	9	29-Dec	+	artwork
86:	10	29-Dec	+lerner	more Znailtest
87:	9	29-Dec	Znailtest+Znailtest	
88:	16	29-Dec	+	[Znailtest at SCRC-VIXEN:]
89:	25	29-Dec	DODDS+LispM-Users	New World for the New Year

Profile	Mail File	Expunge	Save	Kill	Delete	Undelete	Reply
Configure	VIXEN: /dess/avruch/nbox	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Next	Previous	Continue
Survey	Do It <input type="checkbox"/>	Abort <input type="checkbox"/>			Jump	Keywords	Mail
Sort	Map over				Move	Select	Other

Received: from scrc-yukon by scrc-vixen with CHAOS; 29 Dec 1983 14:15:55-EST
 Received: from SCRC-SEINE by SCRC-YUKON with CHAOS; Thu 29-Dec-83 14:16:38-EST
 Date: Thursday, 29 December 1983, 14:16-EST
 From: ??? <Znailtest at SCRC-VIXEN>
 Subject:
 To: Znailtest at SCRC-VIXEN

This is a test of reply node.

Message
 Zmail VIXEN: /usr2/abc.mailbox Msg #87/89 ()

Figure 6. [Save Files (R)]

No.	Lines	Date	From>To	Subject or Text
70:	15	21-Dec	LANG+dess	Acting Manager
71:	28	21-Dec	JWALKER+	Re: blank pages in Rel. 5 documentation
72:	36	22-Dec	+IRWIN,Doc	Rel-5 Doc.
73:	11	22-Dec	+writers	blank pages
74:	26	22-Dec	LANG+IRWIN,Doc	Rel-5 Doc.
75:	28	22-Dec	RH+SYMBOLICS	Inter-company release December 22, 1983
76:	12	22-Dec	CEC+	Phone Number
77:	58	26-Dec	lang+r11	Documentation warehouse space
78:	42	27-Dec	JAYNE+scrc	Insurance Open Enrollment
79:	8	28-Dec	abc+Znailtest	test
80:	19	28-Dec	+lerner	Znailtest@SCRC
81:	12	28-Dec	+CEC	Znail test
82:	14	28-Dec	steve+scrc	Unused Airline Tickets
83:	15	28-Dec	abc+Znailtest	test
84:	12	29-Dec	sned+lispn-users	COMPLETE on Cupid
85:	9	29-Dec	+	artwork
86:	10	29-Dec	+lerner	more Znailtest
87:	9	29-Dec	Znailtest+Znailtest	
88:	16	29-Dec	+	[Znailtest at SCRC-VIXEN:]
89:	25	29-Dec	DODDS+LispM-Users	New World for the New Year

Profile	Quit	Don't Save	Logout	Delete	Undelete	Reply
Configure	Save	Ask	X	Next	Previous	Continue
Survey	Get inbox	Do It	Abort	Jump	Keywords	Mail
Sort	Map over			Move	Select	Other

Received: from scrc-yukon by scrc-vixen with CHAOS; 29 Dec 1983 14:15:55-EST
Received: from SCRC-SEINE by SCRC-YUKON with CHAOS; Thu 29-Dec-83 14:16:38-EST
Date: Thursday, 29 December 1983, 14:16-EST
From: ??? <Znailtest at SCRC-VIXEN>
Subject:
To: Znailtest at SCRC-VIXEN

This is a test of reply node.

Message
Zmail VIXEN: /usr2/abc.mailbox Msg #87/89 ()

Figure 7. [Quit (R)]

4. Getting Out of Trouble in Zmail

This chapter describes what to do if Zmail seems to be stuck, and how to undo a command.

4.1 Recovering From Stuck States

Zmail is a complex program and sometimes becomes stuck. This section lists a few common problems and what to do about them.

You are in the middle of a command you did not mean to use.

If you have executed a command that prompts for keyboard input or wants you to select messages from the summary window, press `ABORT`. If the command is asking you to choose something from a menu, click on `Abort` if that is a choice, or move the mouse outside the menu and see if it goes away. If you are inside mail mode, press `ABORT`. If you are in edit mode, press `END`. If you are choosing a filter or defining a filter or universe, use `[Abort]`. If you are choosing a universe, move the mouse outside the menu. If you are in profile mode, use `[Exit]`. If all else fails, pressing `c-m-ABORT` works, but might be a bit drastic.

Everything looks ok, but Zmail does not respond to commands.

Select another window and reselect Zmail. The most convenient way to do this is to press `SELECT L SELECT M`. Pressing `c-m-ABORT` might also work; this throws you back to top level, aborting any other command (for example, `Mail`, `Profile`). Before pressing `c-m-ABORT`, you might first try pressing `ABORT`.

Zmail does not respond to commands, and the process state is `Wait Forever`.

Press `SELECT L SELECT M` or `c-m-ABORT`.

Zmail does not respond to commands, and the process state is `Output Hold`.

Press `FUNCTION ESCAPE`. The window that appears might be in the `Debugger`; follow the instructions below the line "An error has occurred, and Zmail has entered the Debugger". After exiting the `Debugger`, a background window might remain on the screen overlaying part of the normal Zmail window; to deexpose it, press `FUNCTION c-T`.

Zmail does not respond to commands, and the process state is `Arrest`.

Press `FUNCTION - A` (that is three keystrokes).

An error has occurred, and Zmail has entered the Debugger.

Press **ABORT** to get out of the Debugger; this exits from one command level. For example, if you are in mail mode and an error occurs, **ABORT** gets you out of the Debugger and leaves you in Mail mode. You are not forced back to top level.

Before you press **ABORT**, you might wish to send a bug report. Do this by pressing **c-M**. This puts you in a mail window with appropriate information about the system and machine you are using included in the message. Finish the message with an explanation of the circumstances that led up to the error. Send the bug report by pressing **END**.

A window pops up telling you that an error occurred in the background process.

Press **FUNCTION-0-S** and see what the error is. A window should pop up with the Debugger in it. Typically it is a file system error or a host-down error for the file server containing your mail, but it could also be a program bug. Follow the instructions as for An error has occurred ...; pressing **ABORT** restarts the background process and puts you back into Zmail.

Another window is partially overlaying the main Zmail window.

Click left on the main Zmail window. If this does not work, try pressing **FUNCTION c-T**, which gets rid of "temporary" windows such as pop-up menus.

Zmail obeys commands, but garbage remains on the screen following an error.

Press **REFRESH** or **FUNCTION REFRESH**. It might also help to select another window and reselect Zmail (for example, press **SELECT L SELECT M**). If at top level, you might also try using **[Configure]** (to display only the message), and then **[Configure]** again (to display both message and summary).

After an error, Zmail does not obey commands, and the process state is Nil.

Press **FUNCTION 1 W**. If the process state is still Nil, press **SELECT L SELECT M**.

SELECT M flashes the screen and refuses to select Zmail.

Use the System menu: double click right to get the menu, then use **[Mail]**.

Zmail is irreparably stuck.

Cold boot the machine. Or, enter a Lisp Listener (**SELECT L**) and type (**zmail 'zwei:reload**) or just (**zmail :reload**). Caution: any mail on the machine is lost. This operation reloads Zmail without disturbing the rest of the system, but takes longer than cold booting.

The mouse is broken.

Until it is fixed, use the keyboard and `m-X` commands instead.

4.2 Undoing Commands in Zmail

Undo (`m-X`) Zmail Command

Undo (`m-X`) Undoes the last nontrivial, potentially destructive command; Using `Undo (m-X)` successively undoes earlier and earlier commands.

For example, after using the Sort menu command, `Undo (m-X)` restores the previous order of messages in the file.

Redo (`m-X`) Zmail Command

Redo (`m-X`) Undoes the effect of the last `Undo (m-X)`.

Revoke Msg (`m-X`) Zmail Command

Revoke Msg (`m-X`) Pops up a menu of all the messages sent in the current Zmail session. You select the one you wish to revoke by clicking on it with the mouse.

If the message to be revoked was sent to someone who receives their mail on a Lisp Machine and the message has not been read yet, `Revoke Msg (m-X)` will delete the message from the inbox file. If the message has been read or if the addressee does not receive mail on a Lisp Machine, `Revoke Msg` will add a *revoke* message to the inbox, that is a message whose header says *Revoke Message* and gives the message id.

5. Sending and Reading Mail

5.1 Commands for Sending Mail

This section describes how to send and reply to mail. Included are descriptions of the Mail and Reply commands, which are used for sending various types of mail. See the section "Zmail Mail Command", page 27. See the section "Zmail Reply Command", page 31. In addition, there are descriptions of the format and uses of the various header fields that can be included in messages. See the section "Zmail Header Formats", page 35. Finally, there is a description of the commands available in mail mode, in which you actually write your mail. See the section "Mail Mode in Zmail", page 37.

5.1.1 Mail Command

The Mail command and its variants are used for most mail sending operations: sending normal mail, sending bug reports, forwarding and redistributing mail you have received, and sending local mail. The most common mail operation not handled by the Mail command is replying to a message you have received; this is done using the Reply command. See the section "Zmail Reply Command", page 31.

Mail (Menu)

- | | |
|------------|--|
| [Mail] | Send a message. Puts you into mail mode, with the headers window selected. See the section "Sending Your Mail" in <i>User's Guide to Symbolics Computers</i> . See the section "Mail Mode in Zmail", page 37. |
| [Mail (M)] | Send a bug report. Pop up a menu of program names and [Other]. Clicking on a program name puts you into mail mode, with the To: field set up to send a bug report about that program. Clicking on [Other] prompts for the name of a bug list to send to, then puts you into mail mode. In either case, the mail window is selected; the first several lines of text identifies what version of the software you are using. You can now type in your bug report and send the message. See the section "Adding Bug Lists to Zmail", page 31. |
| [Mail (R)] | Pop up a menu of: |

Bug	Send a bug report. Use [Bug] to send report to same bug list as last report; use [Bug (R)] for menu of programs. See description of [Mail (M)] (above). See the section "Adding Bug Lists to Zmail", page 31.
Mail	Send a message. See description of [Mail].
Forward	<p>Send a message with current message as its text. Puts you in mail mode with headers window selected. Cursor is prompting you to specify the To: field. The Subject: field is initialized as "[PJF: Forwarded]" (if the original message was from PJF). The mail window contains the headers and text of the current message, followed by a (nonblinking) cursor. Supply the To: field, edit or add headers and text as you wish, and send the message.</p> <p>(Note: The forwarded message (that is, the current message) is given the (forwarded) property.)</p>
Redistribute	Redistribute the current message to other recipients. Prompts in the mode line for entry of the recipients of the redistributed message. Enter a list of user names or mailing lists, separated by commas and followed by pressing RETURN. The recipients you specify receive a copy of the current message with three additional header fields

- (Redistributed-to:,
Redistributed-by:, and
Redistributed-date:)
describing the redistribution.
- (Note: The redistributed
message (that is, the current
message) is given the
(redistributed) property.)
- Local** Create a new message in the
current mail file. A new
message draft is created with
an Fcc: destination of the
current inbox. (See Figure
8.)
- You are placed in mail mode
with the headers window
selected, and the cursor
positioned after "Subject:".
Type the subject of the
message, press END, then the
text.
- Local messages never actually
get sent as messages; they
are just useful for making
notes to yourself.
- n (Kbd)** See the description of [Mail].
- Bug (m-X)** Send a bug report. Prompts for the name of a bug list to send
to, then puts you into mail mode with the To: field set to that
name. The mail window is selected; the first line of text identifies
what version of the software you are using. You can now type in
your bug report and send the message. See the section "Adding
Bug Lists to Zmail", page 31.
- Forward (m-X)** See the description of the Forward option of [Mail (R)].
- F** Forwards the current message (using **zwei:com-zmail-forward**).
See the description of the Forward option of [Mail (R)].
- Redistribute Msg (m-X)**
See the description of the Redistribute option of [Mail (R)].

Cc: old Cc

That is, the *To:* field of the reply becomes the old *From:* and *To:*, and the *Cc:* field of the reply becomes the old *Cc:*.

All-Cc

Reply is primarily for original sender, but is of interest to all who saw the original message. Headers are:

To: old From

Cc: old To

Cc: old Cc

Cc-All

Reply is primarily for original recipients, but is also of interest to original sender and *CC:* recipients. Headers are:

To: old To

Cc: old From

Cc: old Cc

To

Like All, but omit the original *CC:* recipients. Headers are:

To: old From

To: old To

To-Cc

Like All-Cc, but but omit the original *CC:* recipients. Headers are:

To: old From

Cc: old To

Cc-To

Like Cc-All, but but omit the original *CC:* recipients. Headers are:

To: old To

Cc: old From

Sender

Reply is just for the sender of the message. Headers are:

To: old From

The possible reply window modes are:

Two-windows

Display the original message and the reply being composed. (It uses three windows: Message, Headers, and Text. It is called Two-windows because the little Headers window does not count.)

One-window

Display only the reply, similar to Figure 8. (Uses two windows, Headers and Text.)

Yank

Display only the reply, but first yank the text of the original message, indented, into the text of the reply.

The reply commands are described below. The descriptions are simply an indication of the reply mode and reply window mode used by each command.

Reply (Menu)

[Reply]	Two-windows/All.
[Reply (M)]	Two-windows/Sender.
[Reply (R)]	Pop up a two-column menu of reply modes and reply window modes. (See Figure 9.)
	Initially, All and Two-windows are highlighted; this combination is equivalent to using [Reply]. Clicking on an unhighlighted entry highlights it and unhighlights the others in its column. Clicking on Do It enters mail mode; clicking on Abort aborts the Reply command.
<i>n</i> R (Kbd)	Where <i>n</i> is one of the following:
	<i>n</i> = 1 Two-windows/Sender.
	<i>n</i> = 2 Two-windows/All.
	<i>n</i> = 3 Yank/All.

Click Right on Summary Line (Summary Window)

Pop up a menu, one entry of which is Reply. Left, Middle, and Right clicks on this entry have the same effect as corresponding clicks on the word [Reply] in the command menu. In addition, the message replied to is selected as current, if it is not already.

A few notes concerning Reply:

- It is possible to add an In-reply-to field to the reply to identify the original message. See the section "Zmail Header Formats", page 35. See the section "Altering Zmail Header Fields", page 37.
- Replying to a message gives it the (answered) property and the A status letter.
- Replying to a draft message simply continues it. See the section "Saving and Restoring Zmail Message Drafts", page 39.
- Replying to a COMSAT or XMAILR (mail server) message retries the failed message, rather than replying to anything.

No.	Lines	Date	From*To	Subject or Text
71:	15	21-Dec	LANG*dess	Acting Manager
72:	28	21-Dec	JWALKER*	Re: blank pages in Rel. 5 documentation
73:	36	22-Dec	*IRWIN,Doc	Rel-5 Doc.
74:	11	22-Dec	*writers	blank pages
75:	26	22-Dec	LANG*IRWIN,Doc	Rel-5 Doc.
76:	28	22-Dec	RN*SYMBOLICS	Inter-company release December 22, 1983
77:	12	22-Dec	CEC*	Phone Number
78:	58	25-Dec	lang*r11	Documentation warehouse space
79:	42	27-Dec	JAYNE*scrc	Insurance Open Enrollment
80:	8	28-Dec	abc*Znailtest	test
81:	19	28-Dec	*lerner	Znailtest<ATTN>
82:	12	28-Dec	*CEC	Znail test
83:	14	28-Dec	steve*scrc	Unused Airline Tickets
84:	15	28-Dec	abc*Znailtest	test
85:	12	29-Dec	sned*lispn-users	COMPLETE on Cupid
86:	9	29-Dec	*	artwork
87:	10	29-Dec	*lerner	nore Znailtest
88:	9	29-Dec	Znailtest*Znailtest	
89:	16	29-Dec	*	[Znailtest at SCRC-VIXEN:]
90:	25	29-Dec	DODDS*LispM-Users	New World for the New Year

Profile	Quit	Delete	Un	All	One-window	
Configure	Save	Next	Pr	All-Cc	Yank	Reply
Survey	Get inbox	Jump	Ke	Cc-All		ontinue
Sort	Map over	Move	S	To	x	Mail
				To-Cc		Other
				Cc-To		
				Sender		
				Do It	Abort	

Date: Wednesday, 28 December 1983, 12:29-EST
 From: ABC <abc at SCRC-VIXEN>
 Subject: test
 To: Znailtest at SCRC-VIXEN
 Cc: abc at SCRC-VIXEN

Test of reply node.

Message
 Znail VIXEN: /usr2/abc.mailbox Msg #88/90 ()

Figure 9. [Reply (R)]

5.1.3 Header Formats

There are three header formats known to Zmail: RFC733, Network, and ITS. This section describes the various header fields in each format. You can insert various header fields into the Headers window, which contains the headers for the message being written. See the section "Altering Zmail Header Fields", page 37.

A message with bad header format gets the (badheader) property.

- Date:** The day, date, and time the message was sent. Generated automatically when a message is sent.
- From:** The user name and host name of the sender of the message. Generated automatically. If you choose, you can explicitly provide this field, in which case a Sender: field is automatically generated with the user name and host name of the sender. This is useful if you send a message from a machine logged in under someone else's name; give a From: field with your user name in it.
- To:** The user names and possibly host names of the primary recipients of the message. Depending on the mail server, one can also include names of mailing lists (distribution lists) and file names in the To: lists. If a mailing list name is included, the message is sent to everyone on the mailing list; if a filename is included, the message is sent to the file.
- CC:** A list of secondary recipients of the message, in the same format as the To: field.
- BCC:** For "blind carbon copies". The field contains recipient names. The recipients in a BCC: field do not appear in the copy of the message that is delivered to the ordinary recipients; they do appear in the copy that is delivered to BCC: recipients.
- FCC:** For filing a copy of a message that is being sent. The recipients see the field in the message. For example,
FCC: F:>JHW>MAIL>OUTGOING.BABYL
The file has to exist already; FCC: cannot result in a file being created.
- BFCC:** For filing a "blind" copy of a message that is being sent. The recipients of the message do not see the BFCC: field. For example,
BFCC: F:>JHW>MAIL>OUTGOING.BABYL
The file has to exist already; BFCC: cannot result in a file being created.
- Included messages:**

A collection of all message ID fields; added by Zmail when user concatenates messages.

Included references:

A collection of all "in-reply-to" fields; added by Zmail when user concatenates messages.

Forward-References:

Field added by Zmail when the variable ***preserve-msg-references-across-expunge*** is set, so that conversations remain intact even when some messages are expunged. See also Backward-References:.

Backward-References:

Field added by Zmail when the variable ***preserve-msg-references-across-expunge*** is set, so that conversations remain intact even when some messages are expunged. See also Forward-References:.

Encrypted:

For flagging the message as containing encrypted text. Zmail generates this header field itself when it is sending a message. The value of the field is the name of the kind of encryption that was used.

Fonts:

For flagging the message as containing more than one font. This is like the Fonts attribute of a file attribute list. Zmacs generates this header field itself when it is sending a message that contains fonts.

Subject:

A line of text giving the subject of the message.

In-reply-to:

An identification of the message being replied to. The message is typically identified by giving the Message-ID:, or, in its absence, the contents of its Date: and From: fields, but different mail systems form this field in different ways.

Sender:

The user name and host name under which the message was sent, when different from the From: field; automatically inserted if a From: field is given (see above).

Redistributed-to:

The recipients of the redistributed message; a list in the same format as the To: field. Resent-to: is a synonym.

Redistributed-by:

The name of the user who redistributed the message. Resent-by: is a synonym.

Redistributed-date:

The date the message was redistributed. Resent-date: is a synonym.

- Expiration-date:** A date, intended as the date on which some mail systems will automatically delete the message.
- Reply-to:** An address, in the same format as the **To:** field. Intended as the address to which to send replies to this message, when that is different from the **From:** or **Sender:**.
- Message-ID:** A unique character string that distinguishes this message from all others.

5.1.4 Mail Mode

This section lists the commands available in mail mode, the mode used for sending messages (except local messages). In addition, since the windows in mail mode are editor windows, most **Zwei** commands are available.

Many commands are available via the editor menu (click right on any of the editor windows in mail mode). In the descriptions below, these commands are marked "(Editor Menu)".

Except as noted, all these commands can be used regardless of which window (**Headers**, **Mail**, or **Message**) is selected.

This section also includes a description of the **Continue** command, a top-level command whose use is closely related to mail mode.

5.1.4.1 Altering Header Fields

The commands in this section provide a convenient way to add or alter various header fields. Click right once while composing a mail message to get a menu of these items. Of course, since the headers window is just an editor window, the usual editor commands can be used instead of the commands listed here. Note also that the word **Subject:** can be typed in as **S:**, a convenience if you choose not to use the **Add Subject Field (m-x)** command. See the section "**Zmail Header Formats**", page 35.

[Add To Field] (Editor Menu) n c-x T (Kbd)

Add another **To:** recipient. Position cursor at the end of the **To:** field, set up to add another name. (Create a **To:** field if there is not one already.) With an argument $n = 0$, position cursor at beginning of **To:** field. With a negative argument, delete the **To:** field.

[Add Cc Field] (Editor Menu) n c-x C (Kbd)

Add another **cc:** recipient. Position cursor at the end of the **cc:** field, set up to add another name. (Create a **cc:** field if there is not one already.) With an argument $n = 0$, position cursor at beginning of **cc:** field. With a negative argument, delete the **cc:** field.

[Add Fcc Field] (Editor Menu) *n* Add Fcc Field (*m-x*)

Add another FCC: recipient. Positions cursor at the end of the FCC: field, set up to add another name. (Creates an FCC: field if there is not one already.) With an argument *n* = 0, positions cursor at beginning of FCC: field. With a negative argument, deletes the FCC: field.

[Add From Field] (Editor Menu) *n* Add From Field (*m-x*)

Create or replace From: field. Create a From: field and position cursor for entry of user name. If a From: field exists already, it is deleted and replaced. With an argument *n* = 0, position cursor at beginning of From: field. With a negative argument, delete the From: field.

[Add In Reply To Field] (Editor Menu) Add In Reply To Field (*m-x*)

Create In-reply-to: field. Create an In-reply-to: field specifying the message being replied to. This command can be used only if mail mode was entered using one of the Reply commands.

[Add Subject Field] (Editor Menu) *n* *c-x* *s* (Kbd)

Create or replace Subject: field. Create a Subject: field and position cursor for entry of text. If a Subject: field exists already, delete and replace it. With an argument *n* = 0, position cursor at beginning of Subject: field. With a negative argument, delete the Subject: field.

[Change Subject Pronouns] (Editor Menu) Change Subject Pronouns (*m-x*)

Fix up the pronouns in the Subject: field of a reply. "I" is replaced by "you," "you" by "I," "mine" by "yours," "yours" by "mine."

5.1.4.2 Configuring and Selecting Windows

(Note: The Add *xxx* Field commands are also window selection commands, in that they select the headers window. See the section "Altering Zmail Header Fields", page 37. In addition, you can select a window by clicking left on it.)

Add More Text (Editor Menu) *c-x* *A* (Kbd)

Select the Mail window.

***c-x* *o* (Kbd)**

Select another exposed window. Repeated use cycles through the two or three exposed windows. (Headers and Mail or Message, Headers, and Mail.)

END (Kbd)

Add more text or send the message. If typed while in the Message or Headers window, selects the Mail window to allow you to add more text. If the Mail window is already selected, pressing END sends the message. See the section "Leaving Mail Mode in

Zmail", page 42. (If typed while in the Message window in zero window mode, sends the message.)

- c-x 0 (Kbd)** Zero window mode. The Message window on the *top-level display* is used for the message being composed. When the **c-x 0** command is issued, the screen is restored to its format at top level, except the Message window displays the headers and text of the message being written. (See Figure 10.)
- c-x 1 (Kbd)** One-window mode. The mail mode display is configured with two windows, Headers and Mail, used for the headers and text of the message being written.
- c-x 2 (Kbd)** Two-window mode. The mail mode display is configured with three windows, Message, Headers, and Mail, which display the current message (which is the message being replied to, if using the Reply command), and the headers and text of the message being written.

5.1.4.3 Saving and Restoring Message Drafts

If you are composing a long, complicated message, you might wish to save intermediate drafts of it. Or perhaps you want to be able to interrupt your work and come back later. The draft message and draft file facilities provide a convenient way to do this.

Draft File Facility

Using the commands listed below, draft files allow you to save messages you are composing into disk files. Draft files are written out to disk immediately, making them useful as protection against a crash. (Note: only one message can be stored per disk file; reusing the file name writes a higher-numbered version.)

[Save Draft File] (Editor Menu) **c-x c-S (Kbd)**

Save the message being composed in a disk file. First time used, prompts for entry of a filename; subsequently, uses the same filename.

[Write Draft File] (Editor Menu) **c-x c-W (Kbd)**

Save the message being composed in a disk file. Prompts for entry of a filename.

[Restore Draft File] (Editor Menu) **c-x c-R (Kbd)**

Restore a previously saved draft. The current contents of the Headers and Mail windows are lost.

Continue (Menu)

No.	Lines	Date	From*To	Subject or Text
71:	15	21-Dec	LANG+dess	Acting Manager
72:	28	21-Dec	JWALKER+	Re: blank pages in Rel. 5 documentation
73:	36	22-Dec	+IRWIN,Doc	Rel-5 Doc.
74:	11	22-Dec	+writers	blank pages
75:	26	22-Dec	LANG+IRWIN,Doc	Rel-5 Doc.
76:	28	22-Dec	RH+SYMBOLICS	Inter-company release December 22, 1983
77:	12	22-Dec	CEC+	Phone Number
78:	58	26-Dec	lang*r11	Documentation warehouse space
79:	42	27-Dec	JAYNE+scrc	Insurance Open Enrollment
80:	8	28-Dec	abc+Znailtest	test
81:	19	28-Dec	+lerner	Znailtest<BOLD>
82:	12	28-Dec	+CEC	Znail test
83:	14	28-Dec	steve+scrc	Unused Airline Tickets
84:	15	28-Dec	abc+Znailtest	test
85:	12	29-Dec	sned+lispn-users	COMPLETE on Cupid
86:	9	29-Dec	+	artwork
87:	18	29-Dec	+lerner	more Znailtest
88:	9	29-Dec	Znailtest+Znailtest	
89:	16	29-Dec	+	[Znailtest at SCRC-VIXEN:]
90:	25	29-Dec	DODDS*LispM-Users	New World for the New Year

Profile	Quit	Delete	Undelete	Reply
Configure	Save	Next	Previous	Continue
Survey	Get inbox	Jump	Keywords	Mail
Sort	Map over	Move	Select	Other

"The time has come," the Walrus said,
 "To talk of many things;
 Of shoes, and ships, and sealing wax,
 Of cabbages, and kings,
 And why the sea is boiling hot,
 And whether pigs have wings."

Message

Znail Mail (Text Fill) Message End nails, Abort aborts

Figure 10. Mail Mode Display (Zero-Window Mode)

[Continue] and [Continue (M)]

Unrelated to draft files or messages. See the section "Continuing Completed or Aborted Zmail Messages", page 43.

[Continue (R)]

Pop up a menu, one entry of which is [Restore Draft File]. Clicking on this entry prompts for a filename and then enter mail mode, with the Headers and Mail windows restored from the file.

Draft Message Facility

The draft message facility allows you to save message drafts in mail files using the commands listed below. Since mail files are not written out until explicitly requested, draft messages are unsuitable for protection against crashes. See the section "Exiting Zmail", page 17. But since they sit visibly at or near the end of your mail file, draft messages are good when you wish to interrupt your work and return later. A draft message is harder to forget than a draft file would be.

[Save Draft As Msg] (Editor Menu) c-X c-m-S (Kbd)

Save the message being composed as a draft message in the current mail file. Subsequent uses do not create new draft copies, but update the old draft.

Continue (Menu)**[Continue] and [Continue (M)]**

Unrelated to draft files or messages. See the section "Continuing Completed or Aborted Zmail Messages", page 43.

[Continue (R)]

Pop up a menu, one entry of which is [Restore Draft Message]. You can click left or right on this entry:

[Restore Draft Message]

Enter mail mode with the Headers and Mail windows restored from the current message, if it is a draft message. If not, flash the screen and ignore the Continue command.

[Restore Draft Message (R)]

Waits for you to click on a draft message in the

summary window, then enters mail mode with the Headers and Mail windows restored from that message. (If the selected message is not a draft message, Zmail flashes the screen and ignores the Continue command.)

Click Right on Summary Line (Summary Window)

Pop up a menu, one entry of which is [Continue] (if the message clicked on is a draft message). Clicking on this entry enters mail mode with the Headers and Mail window restored from the draft message.

Reply (Menu) *n* R (Kbd)

If the current message is a draft message, any form of the Reply command enters mail mode with the Headers and Mail window restored from the draft message. (If the current message is not a draft message, the Reply commands operate as described. See the section "Zmail Reply Command", page 31.)

Note: Once mail mode has been reentered, it is just as if you had used the Mail command and retyped the message. All the mail mode commands operate as expected; in particular, END from the Mail window mails the message and ABORT returns you to Zmail top level without sending the message.

5.1.4.4 Leaving Mail Mode

You can leave mail mode in two ways: by sending the message, or by aborting.

If you send the message, Zmail normally responds "Message sent" and returns you to top level. If there is a problem, Zmail tells you about it and remains in mail mode to allow you to fix things up. Typical problems are omitting the To: field, trying to send mail to a nonexistent user, or mistyping a user name.

After you have sent the message, you can use Show Draft Dispositions (*m-X*) to find out which mail server sent your message, to whom, at what time.

After a message has been sent, you can edit and resend it, perhaps to different recipients, by using the Continue command. See the section "Continuing Completed or Aborted Zmail Messages", page 43.

If you abort, Zmail says Aborting, use the "Continue" command to continue. and returns to top level. You can continue using the Continue command.

END (Kbd) Send the message or add more text. If typed while in the Mail window (or the Message window in zero-window mode), sends the

message. Otherwise, selects the Mail window to allow you to add more text.

[Send Msg] (Editor Menu) `c-ESCAPE` (Kbd)
Sends the message.

`ABORT` (Kbd) [Abort Send] (Editor Menu) `c-` (Kbd)
Aborts mail mode.

5.1.4.5 Continuing Completed or Aborted Messages

The commands in this section allow you to reenter mail mode to continue editing messages already written. Already written messages are of four types:

- Messages that were sent successfully.
- Messages that were aborted. See the section "Leaving Mail Mode in Zmail", page 42.
- Draft messages saved in draft files.
- Draft messages saved as messages.

This section describes how to continue sent and aborted messages. Draft messages are continued in other ways. See the section "Saving and Restoring Zmail Message Drafts", page 39.

Continue (Menu)

[Continue], `RESUME` (Kbd), `c` (Kbd)
Continue the most recently edited message, whether sent or aborted.

[Continue (M)] Continue the most recently aborted message.

[Continue (R)] Pop up a menu of aborted and sent messages to continue. (The messages are identified by their headers; see Figure 11.) Click on a message to continue it. Two other items on the menu are [Restore draft file] and [Restore draft message]. See the section "Saving and Restoring Zmail Message Drafts", page 39.

Note: Once mail mode has been reentered, it is just as if you had used the Mail or Reply command and retyped the message. All the mail mode commands operate as expected; in particular, `END` from the Mail window mails the message and `ABORT` aborts the send.

No.	Lines	Date	From*To	Subject or Text
71:	15	21-Dec	LANG*dess	Acting Manager
72:	28	21-Dec	JWALKER+	Re: blank pages in Rel. 5 documentation
73:	36	22-Dec	+IRWIN, Doc	Rel-5 Doc.
74:	11	22-Dec	+writers	blank pages
75:	26	22-Dec	LANG+IRWIN, Doc	Rel-5 Doc.
76:	28	22-Dec	RH+SYMBOLICS	Inter-company release December 22, 1983
77:	12	22-Dec	CEC+	Phone Number
78:	58	26-Dec	lang+r11	Documentation warehouse space
79:	42	27-Dec	JAYNE+scrc	Insurance Open Enrollment
80:	8	28-Dec	abc+Znailtest	test
81:	19	28-Dec	+lerner	Znailtest RETURN
82:	12	28-Dec	+CEC	Znail test
83:	14	28-Dec	steve+scrc	Unused Airline Tickets
84:	15	28-Dec	abc+Znailtest	test
85:	12	29-Dec	sned+lispn-users	COMPLETE on Cupid
86:	9	29-Dec	+	artwork
87:	18	29-Dec	+lerner	more Znailtest
88:	9	29-Dec	Znailtest+Znailtest	
89:	16	29-Dec	+	[Znailtest at SCRC-VIXEN:]
90:	25	29-Dec	DODDS+LispM-Users	New World for the New Year

Profile	Quit	De	To: jlh; CC: dlw; Re: What the Walrus said; (Not sent)	x	Reply
Configure	Save	N	Reply: To: abc,Znailtest; Re: test; (Not sent)		Continue
Survey	Get inbox	J	Reply: To: abc,Znailtest; Re: test; (Not sent)		Mail
Sort	Map over	M	Re: ; (Not sent)		Other

<p>Date: Wednesday, 28 December 1983, 12:29-EST</p> <p>From: ABC <abc at SCRC-VIXEN></p> <p>Subject: test</p> <p>To: Znailtest at SCRC-VIXEN</p> <p>Cc: abc at SCRC-VIXEN</p> <p>Test of reply node.</p> <p>Message</p> <p>Zmail VIXEN: /usr2/abc.mailbox Msg #88/90 ()</p>	<p>To: BUG-ZMAIL; CC: ; Re: error in message window</p> <p>Restore draft file</p> <p>Restore draft message</p>
---	--

Figure 11. [Continue (R)]

5.1.4.6 Other Commands

n c-X c-Y (Kbd) Yank the current message into the buffer. (Used most often when replying to the current message.) If in two-window mode, go into one-window mode. Indent the yanked message unless an argument *n* is given. The arguments to *c-X c-Y* control the indentation and the pruning of headers, as follows:

<i>Argument</i>	<i>Options</i>
none	Indentation, pruning per the <i>Prune headers of yanked messages</i> profile option.
1	No indentation, pruning per <i>Prune headers of yanked messages</i> .
2	Indentation, pruning per reverse of <i>Prune headers of yanked messages</i> .
3	No indentation, pruning per reverse of <i>Prune headers of yanked messages</i> .

c-X Y (Kbd) [Prune Yanked Headers] (Editor Menu)

Delete the less essential headers of a message that was yanked in via *c-X c-Y*. Leaves only the Date: and From: headers; these are sufficient to identify the message. The profile option *Prune headers of yanked messages* controls the automatic pruning of message headers yanked into a reply. The default is to not prune headers.

Profile Option: Prune headers of yanked messages

Controls how much of the header information is kept on messages included in replies. If you leave it *no* (**nil**, the default), the entire header of the included message is kept. If you change it to *yes*, (**t**) only the date and from lines are kept.

Insert File (**m-X**) Prompts for a pathname and inserts the contents of the file in the mail buffer.

Commands for Editing the Recipient List of a Message

If you are editing a message with a long list of recipients, it is occasionally useful to be able to manipulate the addresses.

- h-F** (Kbd) Move forward over an address.
- h-T** (Kbd) Transpose the two surrounding addresses.
- h-K** (Kbd) Kill the next address.
- h-Rubout** (Kbd) Kill the previous address.

Entering Mail Mode Recursively

c-x m (Kbd) Enter mail mode recursively; the window configuration remains the same, but the Headers and Mail windows are reinitialized as if the Mail command had just been executed (Headers window contains the word "To:" followed by a blinking cursor; Mail window is empty.) Exiting recursive mail (either by sending the message or by aborting) returns to the higher level mail.

5.2 Commands for Reading Mail

This section describes the Get inbox command, used for reading your new mail and your old mail in your primary mail file. (It is possible to have old mail that resides in other files, but that is not relevant to this section.)

In reading your mail, there are two files involved: your mail file (more properly, your *primary mail file*), which contains messages you have already seen, and your *inbox*, which contains messages you have not seen yet. If you do not have a mail file — as might be the case the first time you run Zmail — the Get inbox command offers to create one for you. Press RETURN to let Zmail create the file, or ABORT if for some reason you do not want a mail file. There is no similar problem with inbox files; they are created when needed, and deleted once read.

The reading is done in a background process, so the display of the first message should come up rapidly. The background process continues to read in the mail file and inbox and write out the updated mail file, if necessary. You are therefore allowed some limited interaction while this is going on.

New messages have the (unseen) and (recent) properties and the "-" status letter.

(unseen)	applies up to and including the first time the message is displayed.
"-"	applies up to but not including the first display.
(recent)	applies to any message that was read in as new mail during the current terminal session.

A warning: if you use c-m-ABORT to abort out of Get inbox, you might end up with your mail file partially read in. To see if this is the case, check the Expunge/Save/Kill menu (use [Save (R)]). See the section "Exiting Zmail", page 17. If the name of the file appears there, but the file was not selected — that is, messages from the file did not appear on your screen — then you should use the menu to kill the file. (This does not kill the disk copy of the file, only the copy in memory.)

Get inbox (Menu)

[Get inbox] G (Kbd)

Read in your old and/or new mail. This is done in two steps:

1. Select the primary mail file. First, select the primary mail file to be the current mail file. There are three possibilities:
 - The primary mail file is already selected. Just push the message stack. See the section "Moving Among Zmail Messages Using the Message Stack", page 50.
 - The primary mail file is loaded, but not selected. (This would be the case if a different mail file were selected.) Push the message stack and select the primary mail file. The current message will be the message that was current when the file was last selected.
 - The primary mail file is not loaded. Read in the file and select message number 1 as the current message.
2. Get the new mail. If the standard inbox file exists, that means there is new mail. Read it in and select the first new message as current. If the file does not exist, do nothing.

[Get inbox (R)]

Read in your old and/or new mail using a specified inbox file. Just like [Get inbox], but you specify the inbox file from the keyboard. Use this command to recover from file computer crashes that write your inbox in a nonstandard place.

Caution: if you specify a file that is not in the proper format — for example, if you type the name of your primary mail file — you are in trouble. Zmail becomes caught in an error loop, and has to be reloaded (or the machine cold booted).

(Remember, the file you specify is the *inbox* —

the file where new mail lives — not the *mail file*, which is where old mail resides.)

5.2.1 Check for New Mail (m-x) Command

Check for New Mail (m-x)

Checks in the foreground for new mail in the inbox(es) associated with the default buffer. This is similar to what the background process does periodically. In addition to printing a message, this command prevents the background process from telling you about the same new mail. Thus the command can also be used as a way of "noticing" new mail that you might have read in the editor or with View Mail (m-x). The next "you have new mail" message from the background refers to really new mail.

5.2.2 Undigestify (m-x) Command

Undigestify (m-x) Converts a "standard arpanet" digest message into smaller messages. These messages are inserted into the current buffer right after the digest message. A References: header is added to the original message pointed to all the exploded messages, allowing use of the conversation commands to select the digest messages into a collection, delete them all, and so forth.

5.2.3 View Mail (m-x) Zmacs Command

View Mail (m-x) A command for viewing your inbox file. It uses the standard mail pathname for your home directory. When no new mail has been delivered recently, it reports "No new mail". This command uses View File.

6. Message Movement and Deletion

This chapter describes how to move around from one message to another and how to delete and undelete messages.

6.1 Message Movement Commands

6.1.1 Simple Message Movement Commands

The simple movement commands are:

Next (Menu)

- | | |
|------------|---|
| [Next] | Move to next undeleted message. |
| [Next (M)] | Move to last undeleted message in the file. |
| [Next (R)] | Pop up a menu of Next undeleted, Next, Last undeleted, and Last. Next and Last do not skip deleted messages; the others do. |

n N (Kbd) Without an argument, move to the next undeleted message. With a positive argument, move forward to the *n*th following undeleted message. (*n* ≤ 1 is equivalent to no argument.)

n c-N (Kbd) Without an argument, move to the next message, whether deleted or not. With a positive argument, moves forward to the *n*th following message, whether deleted or not. (*n* ≤ 1 is equivalent to no argument.)

c-F Moves to the next message containing a specified string (using **zwei:com-zmail-find-string**).

Previous (Menu)

- | | |
|----------------|--|
| [Previous] | Move to previous undeleted message. |
| [Previous (M)] | Move to first undeleted message in the file. |
| [Previous (R)] | Pop up a menu of Previous undeleted, Previous, First undeleted, and First. Previous and First do not skip deleted messages; the others do. |

n P (Kbd) Without an argument, move to the previous undeleted message. With a positive argument, move backward to the *n*th preceding undeleted message. (*n* ≤ 1 is equivalent to no argument.)

n c-P (Kbd) Without an argument, move to the previous message, whether

deleted or not. With a positive argument, moves backward to the n th preceding message, whether deleted or not. ($n \leq 1$ is equivalent to no argument.)

Click Left on Summary Line (Summary Window)

Selects the message whose summary line was clicked on.

- n J (Kbd) Jump to message n , even if deleted. If $n \leq 1$, jump to first message. If $n >$ number of messages in file, jump to last message. If n is omitted, jump to first undeleted message in file.
- Find String (m-X)** Prompt for a search string to be typed into minibuffer; find the next message containing that string (in text or header) and select it. If no message is found with given string, flash the screen.
- Occur (m-X)** Prompt for a search string to be typed into minibuffer; type out lines from all messages in the file that contain the string (in text or header). Clicking left on a line selects the corresponding message.
- Jump (Menu)** Jump to next message meeting a given filter or select message from the message stack. See the section "Moving Among Zmail Messages Using the Message Stack", page 50.
- [Jump] Defaults to last filter.
- [Jump (M)] Select message from the message stack.
- [Jump (R)] Specify filter from standard display.

6.1.2 Moving Among Messages Using the Message Stack

Sometimes when you have been jumping around the mail file a lot, perhaps using commands like J or Click Left on Summary Line, you find that you would like to go back to the last message you read. If the mail file is large and you have moved great distances, you might no longer remember where you were. Rather than force you to make scribbled notes, Zmail keeps a stack of messages from which you have jumped, called the message stack. The commands are similar to the commands for the point-pdl (stack) in the editor. See the section "What is a Zmacs Region?" in *Text Editing and Processing*.

For example, suppose you are reading message 45 and then select message 22 from the summary line. The message stack looks like this:

```

45
.
.
.

```

Zmail has noted the fact that you were reading message 45 by pushing this information on the message stack. Now you use [Next] and you are reading

message 23. (The message stack does not change, because it is easy for you to undo the effect of using [Next]; the idea of the message stack is to help when you have been moving around in a more arbitrary way.) You then type 58J and message 58 becomes the current message. The stack now looks like this:

```

23
45
.
.
.

```

If you now want to return to where you were — message 23 — but do not remember the message number, you can press `c-U c-SPACE`. Message 23 becomes the current message and the message stack is:

```

45
.
.
.
23

```

This is called popping the message stack, because the top element is popped off and used as the current message. As you can see, it also gets tucked under the bottom of the stack. To get back to message 45, press `c-U c-SPACE` again. The message stack is now:

```

.
.
.
23
45

```

If you had wanted to get from message 58 directly to 45 without looking at 23, you could have pressed `c-U c-U c-SPACE c-U c-SPACE`. The `c-U c-U c-SPACE` command pops the 23 from the top of the message stack, but instead of becoming the current message, the 23 is simply discarded (not the message itself, just the stack entry.)

Incidentally, stack entries are actually internal pointers, not message numbers. This means that if a message number changes — because other messages were expunged or the file was sorted — the message stack still points to the correct message, even though its number changed. And if a message is expunged, all stack references to it disappear.

Note that the stack entries keep track not just of the message itself, but also of what mail file it is in. This is helpful if you are using multiple mail files.

The following are the commands for using the message stack:

- c-SPACE (Kbd)** Push or pop the message stack, depending on the argument. There are three meaningful forms:
- c-SPACE** Push the current message onto the stack. (Does not change the current message.) The stack can hold up to eight elements; pushing onto a full stack causes the bottom element to be lost.
- The **c-SPACE** command is automatically executed by Zmail whenever you use a command that causes or can cause movement from the current message, except the following:
- N, c-N**
 - P, c-P**
 - D, c-D**
 - [Next] or [Previous]**
 - [Delete], [Delete (M)], or [Delete (R)]**
 - [Next (R)]** (([Next] and [Next undeleted] options.)
 - [Previous (R)]** (([Previous] and [Previous undeleted] options.)
 - n* J** (When *n* is equal to the current message number.)
 - [Summary Line]** (When clicking on the summary line of the current message.)
- None of these commands moves very far from the current message, unless they move over a long string of deleted messages. Also, none of the message stack commands automatically run **c-SPACE**.
- c-U c-SPACE** Pop the top message from the message stack and make it the current message. (The element popped is also tucked back under the stack as the new bottom element.) If the stack is empty Zmail flashes the screen.
- c-U c-U c-SPACE** Pop the top message from the message stack and discard it. The setting of the current message does not change. (The element popped is also tucked back under the stack as the new

bottom element.) If the stack is empty Zmail flashes the screen.

Jump (Menu)

[Jump] Select an arbitrary message from the message stack. Do nothing if the stack is empty. Otherwise, display summary lines for the elements of the message stack, partially overlaying the summary window. (The message numbers displayed are meaningless, but if the current message is on the stack, it is indicated by the usual arrow.) The summary lines are mouse sensitive; clicking Left on a line selects the corresponding message. Pressing ABORT aborts the Jump command; typing or clicking on any other command aborts Jump and executes that command. (See Figure 12.)

[Jump (M)], [Jump (R)]

Unrelated to the message stack. See the section "Simple Zmail Message Movement Commands", page 49.

***n* c-m-SPACE (Kbd) *n* Move to Point (m-x)**

Without an argument, exchanges the current message and the top of the message stack. (The top of the stack is popped into the current message and the old setting of the current message is pushed onto the stack.) With an argument $n > 1$, rotates the top n entries of the list formed from the current message followed by the message stack. ($n = 2$ is equivalent to no argument.) With an argument of 1, rotates the whole list. Negative arguments rotate the other way.

An example: if n is 3, Stack[1] is the top of stack, and Stack[2] is the element just below the top of stack, then:

```
new current message → old Stack[1]
new Stack[1] → old Stack[2]
new Stack[2] → old current message
```

***n* Move to Default Previous Point (m-x)**

With an argument n , performs the same rotation as n c-m-SPACE and makes n the new default argument. Without an argument, uses the default. (The initial default is 3.)

No.	Lines	Date	From	To	Subject or Text		
1:	19	28-Dec	+lerner		Znailtest		
2:	15	28-Dec	abc	Znailtest	test		
3:	16	29-Dec	+		[Znailtest at SCRC-VIXEN:]		
4:	25	29-Dec	DODDS	LispM-Users	New World for the New Year		
5:	9	29-Dec	Znailtest	Znailtest			
6:	9	29-Dec	Znailtest	Znailtest			
7:	9	29-Dec	Znailtest	Znailtest			
8:	9	29-Dec	Znailtest	Znailtest			
81:	19	28-Dec	+lerner		Znailtest		
82:	12	28-Dec	+CEC		Znail test		
83:	14	28-Dec	steve	scrc	Unused Airline Tickets		
84:	15	28-Dec	abc	Znailtest	test		
85:	12	29-Dec	aned	lispn-users	COMPLETE on Cupid		
86:	9	29-Dec	+		artwork		
87:	10	29-Dec	+lerner		more Znailtest		
88:	9	29-Dec	Znailtest	Znailtest			
89:	16	29-Dec	+		[Znailtest at SCRC-VIXEN:]		
90:	25	29-Dec	DODDS	LispM-Users	New World for the New Year		
		Profile		Quit	Delete	Undelete	Reply
		Configure		Save	Next	Previous	Continue
		Survey		Get inbox	<u>J</u>	Keywords	Mail
		Sort		Map over	Move	Select	Other
Date: Wednesday, 28 December 1983, 12:29-EST							
From: ABC <abc at SCRC-VIXEN>							
Subject: test							
To: Znailtest at SCRC-VIXEN							
Cc: abc at SCRC-VIXEN							
Test of reply node.							
Message							
Zmail VIXEN: /usr2/abc.mailbox Msg #88/90 ()							

Figure 12. [Jump (M)]

6.2 Message Deletion Commands

Messages can be deleted when they are no longer wanted. Deletion does not actually mean the removal of a message; rather it means flagging a message for later removal. Messages flagged for deletion bear the status letter **D** and have the deleted property; these messages are passed over by the Next and Previous commands. The actual removal of deleted messages is called "expunging" and is done by the Save and Quit commands. See the section "Exiting Zmail", page 17.

The deletion and undeletion commands are:

Delete (Menu)

[Delete]	Delete current message and move to next undeleted message. (Do not move if this is last message.)								
[Delete (M)]	Delete current message and move to previous undeleted message. (Do not move if this is first message.)								
[Delete (R)]	Pop up a menu of: <table> <tr> <td>Backward</td> <td>Delete current message and move to previous undeleted message.</td> </tr> <tr> <td>Forward</td> <td>Delete current message and move to next undeleted message.</td> </tr> <tr> <td>Remove</td> <td>Remove message from this temporary mail file.</td> </tr> <tr> <td>No</td> <td>Delete current message and do not move.</td> </tr> </table>	Backward	Delete current message and move to previous undeleted message.	Forward	Delete current message and move to next undeleted message.	Remove	Remove message from this temporary mail file.	No	Delete current message and do not move.
Backward	Delete current message and move to previous undeleted message.								
Forward	Delete current message and move to next undeleted message.								
Remove	Remove message from this temporary mail file.								
No	Delete current message and do not move.								

***n* D (Kbd)** Delete message *n*. Complains "Argument out of range" if *n* < 1 or *n* > number of messages in file. If *n* omitted, same as using [Delete] (above).

c-D (Kbd) Delete current message and move to previous undeleted message, like using [Delete (M)].

Click Middle on Summary Line (Summary Window)

Toggle the deleted property of the message whose summary line was clicked on. That is, delete a nondeleted message, undelete a deleted message. Do not select the message as current message. If the current message is being deleted, move to the next undeleted message.

Click Right on Summary Line (Summary Window)

Pop up a menu, one entry of which is either Delete or Undelete, depending on whether message is nondeleted or deleted. Clicking on this entry deletes or undeletes the message. Do not select the message as current. If the message is already current and is being deleted, move to the next undeleted message.

Delete Duplicate Msgs (m-X)

Delete duplicated messages from the mail file, retaining only the first copy of a duplicated message. Two messages are duplicates if and only if they have the same From:, Date:, To: (if any), Cc: (if any), and Subject: (if any) fields. (The other headers and the text of the message are not checked.) Duplicate messages can arise from merging two mail files, for example.

Undelete (Menu) Start at current message and searches backward for a deleted message, undeletes it, and select it as the current message. Complain "No deleted messages" if there are none.

n U (Kbd) Undelete message *n*. Complains "Argument out of range" if $n < 1$ or $n >$ number of messages in file. If message *n* is not deleted, complains "Message not deleted." If *n* omitted, same as Undelete command.

7. Fundamental Techniques

7.1 Customizing Zmail

The Profile command allows you to customize Zmail by setting various display and command options to your personal taste. You can set an option temporarily or permanently, the latter by saving the option in your *Zmail Profile*.

Classes of options you can set include the following:

- Format used for hardcopies of messages
- Mail-file attributes
- Lists of mail files and other objects that Zmail knows about at startup
- Associations between certain objects
- (M) actions for many top-level commands
- Screen configurations
- Default actions taken when reading, sending, replying to, or forwarding mail
- Command Tables

Customizing is done in *profile mode*, entered by clicking on [Profile] in the command menu at top level. The profile mode display (Figure 13) shows the text of your profile and the current settings of various options.

Setting and Saving Options

Option settings are stored in eight distinct places:

- *Your mind*: your conception of how the options should be set.
- *The Zmail environment*: the way the options are actually set at the moment.
- *The defaults*: the way the options are actually set before you alter them.
- *The editor buffer*: the in-memory buffer of your profile.
- *The source version of your profile*: on disk.
- *The compiled version of your profile*: also on disk.

- *Mail buffers*: options associated and stored with the individual mail buffers.
- *Mail files*: options associated with a mail buffer saved as a file.

The simplest way to use profile mode is:

1. Make the changes you want using the menu items or user options window, two regions of the display indicated in Figure 13. For a list of the various options and what they mean: See the section "Zmail Profile Options", page 85.
2. Use [Exit] to leave profile mode. Check to see that you like your changes.
3. To save your changes, reenter profile mode and use [Save]. Before you do this for the first time, use [Save (M)] and press RETURN to the question Zmail asks. This specifies that you want your file compiled, which makes it load and run faster. Answer *yes* to any questions about inserting changes or recompiling your file. At this point Lisp code corresponding to your option settings will be stored in your profile. Options changed using [File options] or [Keywords] are stored in the individual mail buffers and must be saved using [Save] on the top-level command menu.

What [Save] actually does is move option settings from the environment (where you altered them in the first step) to the editor buffer, then from the editor buffer to the source copy of your init file, and finally from the source file to the compiled file (by recompiling). You can also move option settings one step at a time, by using [Reset] and [Default], and the menu options available by using [Save].

7.2 Testing Zmail Message Characteristics

Filters are logical predicates that apply to messages. They take a message as input and return a True or False answer based on its characteristics. For example, a filter might test whether the message was sent to a particular person or on a particular date. If the answer is True, the message is said to *satisfy* the filter.

Zmail commands use filters in one of two ways:

- The [Survey], [Jump], and [Select] commands form subsets of all messages that satisfy a particular filter. ([Select] forms a mail collection; the other two form the subset implicitly.)
- The [Keywords] and [Move] commands act upon a single message in a particular way depending upon which filters the message satisfies.

Menu Items → [Filters] [Universes] [Mail files] [File options] [Keywords] [Hardcopy]

User Options Window { User options:
 Delete message when moved into buffer: Yes No
 Show headers and ask before expunging deleted messages: Yes No
 Forwarded messages are supplied with a subject: Yes No
 Move to first message even when no new mail in inbox: Yes No
 Just show headers and text after yanking in message: Yes No
 Do not automatically save after reading inbox: Yes No
 Do not check for new mail in the background: Yes No
 Prune headers of yanked messages: Yes No
 Direction to move after delete: Backward Forward Remove No Forward/Remove Backward/Remove
 Direction to move for click middle on delete: Backward Forward Remove No Forward/Remove
 Backward/Remove
 Default startup window setup: Summary only Both Message only Experimental
 Middle button on Mail command: Bug Mail Forward Redistribute Local
 Middle button on Map command: Delete Undelete Type Find string Keywords Unkeywords Move Forward
 Redistribute Reply Concatenate Undefined
 Middle button on Previous command: Previous undeleted Previous Previous unseen Previous recent First undeleted
 First First unseen First recent
 More below

Processing Items → [Exit] [Reset] [Defaults] [Save] [Edit]

Editor Buffer { JLH's ZMAIL init file --s-Mode:LISP;Package:ZHEI--
 ;; Option settings on this page are settable using profile mode
 (LOGIN-SETO *PRUNE-HEADERS-AFTER-YANKING* T)
 (LOGIN-SETO *DELETE-MIDDLE-MODE* 'REMOVE)
 (LOGIN-SETO *REQUIRE-SUBJECTS* T)
 (LOGIN-SETO *DEFAULT-MAIL-WINDOW-CONFIGURATION* ' :BOTH)
 (LOGIN-SETO *REPLY-WINDOW-MODE* ' :YANK)
 (LOGIN-SETO *MIDDLE-REPLY-WINDOW-MODE* ' :YANK)
 (LOGIN-SETO *DONT-REPLY-TO* ' ("INFO-*" "JLH" "SCRC" "SYMBOLICS" "EAST" "WEST" "SPA" "SCH" "SHO"
 "SMH" "DOC-CHANGES"))
 (LOGIN-SETO *FORWARDED-MESSAGE-SEPARATOR* "-----")
 (LOGIN-SETO *TEXT-MAIL-FILE-SEPARATOR* "-----")
 (LOGIN-SETO *SUMMARY-SCROLL-FRACTION* 0.4s0)
 (LOGIN-SETO *FILTER-REFERENCE-UNIVERSE-ALIST* ' ((|Zmail| . "F:>jlh>mail>zmail>zmail.xmail")))
 (LOGIN-SETO *FILTER-MOVE-MAIL-FILE-ALIST* ' ((|Zmail| . "F:>jlh>mail>zmail>zmail.xmail"
 (|Junk| . "F:>jlh>mail>delete-ne.xmail"
 (|Kanef| . "F:>jlh>mail>kanef.xmail"))))
 (LOGIN-SETO *FILTER-KEYWORDS-ALIST* ' ((|Zmail|) (|Draft messages| :DRAFT) (|To do| :TO-DO)
 (|Dated| :DATED) (|Kanef| :KANEF)))
 (LOGIN-SETO *OTHER-MAIL-FILE-NAMES* ' ("F:>jlh>mail>zmail>zmail.xmail"
 "F:>jlh>mail>zmail>doc.xmail"
 "F:>jlh>mail>zmail>training.xmail"
 "F:>jlh>mail>zmail>archive-1.xmail"
 "F:>jlh>mail>zmail>terms.xmail"
 "F:>jlh>mail>oj.xmail"
 "F:>jlh>mail>doc.xmail"
 "F:>jlh>mail>kanef.xmail"

Mode Line → Zmail Profile SCRC:<JLH>ZMAIL.INIT (27)

01705783 15:06:47 JLH ZHEI: 1yt_

Figure 13. Profile mode display.

7.2.1 Selecting Filters

Filters are of two types:

- *Predefined filters* are simple, and come in four varieties:
 - [All] is a filter satisfied by any message.
 - *Keyword filters* test whether the message has a particular keyword or any keywords.

- *Property filters* test whether the message has a particular property, such as Answered.
- *Header filters* test whether the message headers meet specified characteristics, such as a Subject field that includes the word "Lisp".
- *User-defined filters* are arbitrarily complex logical expressions whose operands are predefined filters and other user-defined filters.

When you invoke a Zmail command that uses a single filter (a command that forms a subset of messages) you select the filter you want from the menu shown in Figure 14. By first using [Not], you can negate the action of the filter you choose, that is, select those messages that *fail* to satisfy the filter.

7.2.2 Creating Filters

Filters are Lisp functions, constructed using the menu-based programming tool shown in Figure 15. This display can be obtained in two ways:

- By using [New filter] in Figure 14: use this when none of the existing (pre- or user-defined) filters is suitable.
- By using [Filters] in profile mode (Figure 13) before using [New filter]: use this to define a filter whose utility you anticipate before you actually need to use it. The filter will be saved in your profile. See the section "Saving Zmail Filters", page 63.

The Filter Creation Display is divided into three main sections:

- The *summary window*. You can click left on a message's summary line to select predefined filters based on its characteristics.
- The menu items are the primary tool for defining the filter. The menu items are divided into four rows:
 - A row of *programming* items, [Not], [And], [Or], and [Close]. The first three are logical functions; the last closes a level of parentheses in the expression being constructed.
 - A *documentation* item, [Documentation], which adds documentation to a filter. This documentation appears as the mouse documentation line when you are pointing with the mouse to that filter in the filter selection menu.
 - A row of *processing* items, [Sample], [Done], and [Abort]:
 - [Sample] Displays the summary lines of messages that satisfy the filter you have defined so far.
 - [Done] Exits definition mode and executes the command that called for the filter.
 - [Abort] Aborts the command.
 - Two rows of *filter menus*, similar to the Filter Selection Display. These allow one filter to call another.
- The *editor buffer* displays the filter as it is being created.

So, how do you actually define a filter? Let's walk through an example. Suppose we want a filter that selects messages dealing with hardware. The first thing to do when defining a filter is to use the menu item above the editor buffer: right for a menu of existing filters to edit, or click left and give a name to create a new filter. Let's call this filter "Hardware".

The next step is to determine the explicitly definable characteristics of the messages we're looking for. In this case, we might decide that messages about hardware are either from PJF (but only if dated after 2/5/81), or contain the word "hardware" in the Subject field. Expressed in Lisp, the filter looks like:

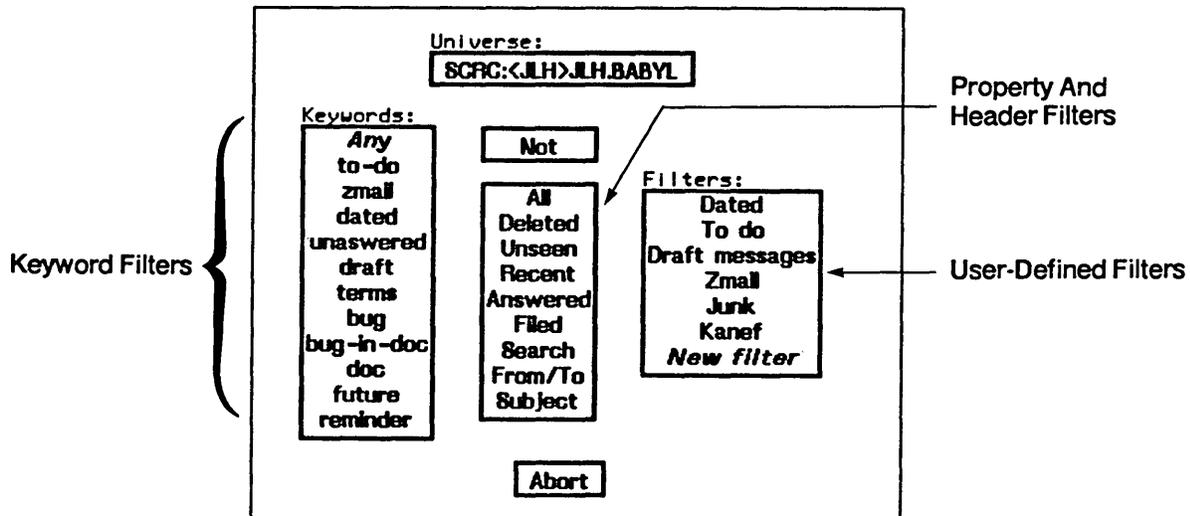


Figure 14. Filter Selection Display.

```
(DEFINE-FILTER |Hardware| (MSG)
  "Messages relating to hardware"
  (OR (AND (MSG-HEADER-RECIPIENT-SEARCH ':FROM #'PJF")
    (MSG-DATE-GREATERP "5-Feb-84"))
    (MSG-HEADER-SEARCH ':SUBJECT #'"hardware"')
  ))
```

To create it, we follow these steps, clicking on the items in the menu:

- [Or]
- [And]
- [From], type PJF, and press RETURN
- [After], type 2/5/84, and press RETURN
- [Close]
- [Subject], type hardware, and press RETURN
- [Documentation] type in a mouse documentation string followed by RETURN
- [Done]

Notice the [Close] command. It *closes* the [And]. The optional mouse

Summary Window

No.	Lines	Date	From:Ip	Subject or Text
46:	24	15-Nov	MHC@Mergolin@MIT-MULTI	Setting the From: field
47:	26	17-Nov	RWK@BUG-ZMAIL	ZMAIL 69
48:	25	19-Nov	Steve Pelaggi@scrc	Time cards
49:	29	22-Nov	dlw*	Exception handling
50:	48	22-Nov	Min@Symbolics	Foreign Distributorship
51:	25	1-Dec	DCP@SCH-HUEY-DU+network	As most of you know by now, the land lines (SCRC<-->S
52:	67	4-Dec	Jwalker@Whit	protocol for camera-ready copy
53:	16	5-Dec	*whit	Zmail manual; NES manual
54:	12	7-Dec	finkel+Lang	Society for Technical Communication
55:	27	8-Dec	finkel+JWalker	Toolkit
56:	22	13-Dec	whit+scrc	Release 4.0 Beta-test Site Documentation review files
57:	116	13-Dec	whit+info-lispn,doc	Documentation and Training Services project summaries
58:	8	15-Dec	cec+scrc	Customer file
59:	59	19-Dec	RWK@bug-zmail	What is incremental expunging?
60:	19	20-Dec	JAYNE+scrc, Jean	Prudential Open Enrollment
61:	11	20-Dec	nuwv+scrc	Organization
62:	17	20-Dec	pailler+symbolics	CEC maintains CUSTOMERS.TEXT
63:	9	20-Dec	nuwv+scrc	Conference
64:	28	20-Dec	RWK+	Disappearing fonts
65:	13	29-Dec	BSG+rn	Object-oriented programming
66:	26	30-Dec	Jwalker+dlw	documentation copies
67:	15	30-Dec	linda+sch,scrc,spa,stk.	*An Advanced Lisp-Based Engineering Workstation*

Programming Items: Not, And, Or, Close

Processing Items: Sample, Done, Abort

Documentation Item: Documentation

Name Item: Noname-1

Filter Menus

- Deleted
- Unseen
- Recent
- Answered
- Filed
- Search
- To
- To/Cc
- From
- Subject
- Other
- Before
- On
- After

Keywords:

- Any
- to-do
- zmail
- dated
- unanswered
- draft
- terms
- bug
- bug-in-doc
- doc
- future
- reminder

Filters:

- Dated
- To do
- Draft messages
- Zmail
- Junk
- Kanef

Editor Buffer: (DEFINE-FILTER [Noname-1] (MSG))

Zmail Filter

01/05/85 15:29:08 JLH ZWEI: Typ_

Figure 15. Filter Creation Display.

documentation string, added in the next to last step, is very useful; it shows up as the mouse documentation line for the filter whenever you are asked to select a filter from a menu.

7.2.3 Saving Zmail Filters

To save a filter in your profile, use [Filters] in profile mode. When you save your profile, the filters you select are saved. Those filters, plus any you have defined during the current login session, show up in the filter menus.

7.3 Defining Message Search Spaces

Universes are programs that define sets of messages. For example, the universe "Hardware" could be the set of messages in two mail files, PRINTER-HARDWARE.BABYL and 3600-HARDWARE.BABYL. Universes are dynamic objects; if the contents of one of the files were to change, the contents of "Hardware" would change. Like filters, universes come in both predefined and user-defined varieties. Universes are implemented using flavors. You can define arbitrary universes; see `sys: zmail`; universe `lisp` for information.

Zmail commands use universes in one of two ways; in both cases, the universe acts as a search space:

- The [Survey], [Jump], and [Select] commands use universes to define the set of messages from which a filter extracts its subset.
- The referenced message commands use universes to find messages related to one you are looking at. See the section "Operating on Zmail Messages Referred to by the Current Message", page 71.

7.3.1 Selecting Universes

When you use a universe in conjunction with a filter ([Survey], [Jump], or [Select] command), you do so by using the universe menu item in Figure 14 prior to selecting a filter. This menu item displays the universe to be used with the filter you select; the usual default is the rest of the current mail file. Using the universe menu item causes a menu to pop up similar to the one in Figure 16.

Using this menu, you can choose one of the following predefined universes:

- The messages in a particular mail file, buffer, or collection.
- The union of messages in all files, buffers, and collections listed in the menu.
- The union of messages in all buffers and collections.
- The messages in the current buffer or collection following the current message.
- The messages in the current buffer or collection preceding the current message.

7.3.2 Creating Universes

New universes are defined using the menu tool shown in Figure 17. You can obtain this display in two ways:

- By using [New universe] in Figure 16: use this when none of the existing (predefined or user-defined) universes is suitable.

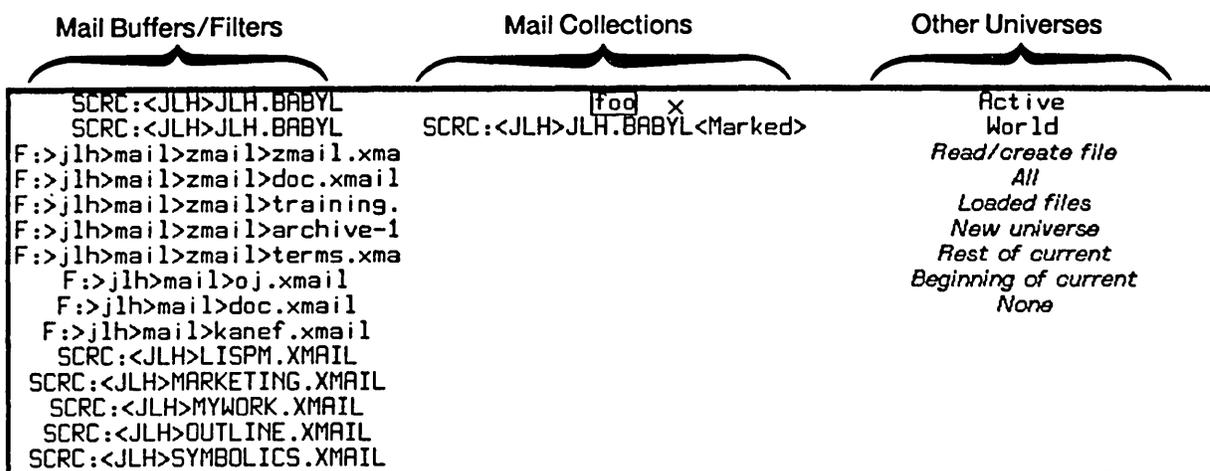


Figure 16. Universe Selection Display.

- By using [Universes] in profile mode (Figure 13) before using [New universe]: use this to define a universe whose utility you anticipate before you actually need to use it. The universe will be saved in your profile. See the section "Saving Zmail Universes", page 66.

The Universe Creation Display is quite similar to the Filter Creation Display. By clicking on menu items, you construct a universe as unions, intersections, and complements of mail files, buffers, collections, and universes. These include the special universe [Current] (the current sequence), and the special universe [Loaded] (all loaded buffers). The precise definitions of the set operations are as follows:

- Union** A message is in the union of n universes if it is in any of the universes in the union.
- Intersection** A message is in the intersection of n universes if all contain the same message (not a copy from another buffer).
- Complement** A message is in the complement of a universe if it is not in that universe, but is in [Loaded].

One caveat about the use of mail collections in universes: be sure that the collection you name actually exists when you use the universe. A universe used several times or stored in your profile might refer to a collection that no longer exists. If so, Zmail attempts to find a mail file with the same name as the collection. This results in an error.

You can define arbitrary universes; see sys: zmail; universe lisp for information.

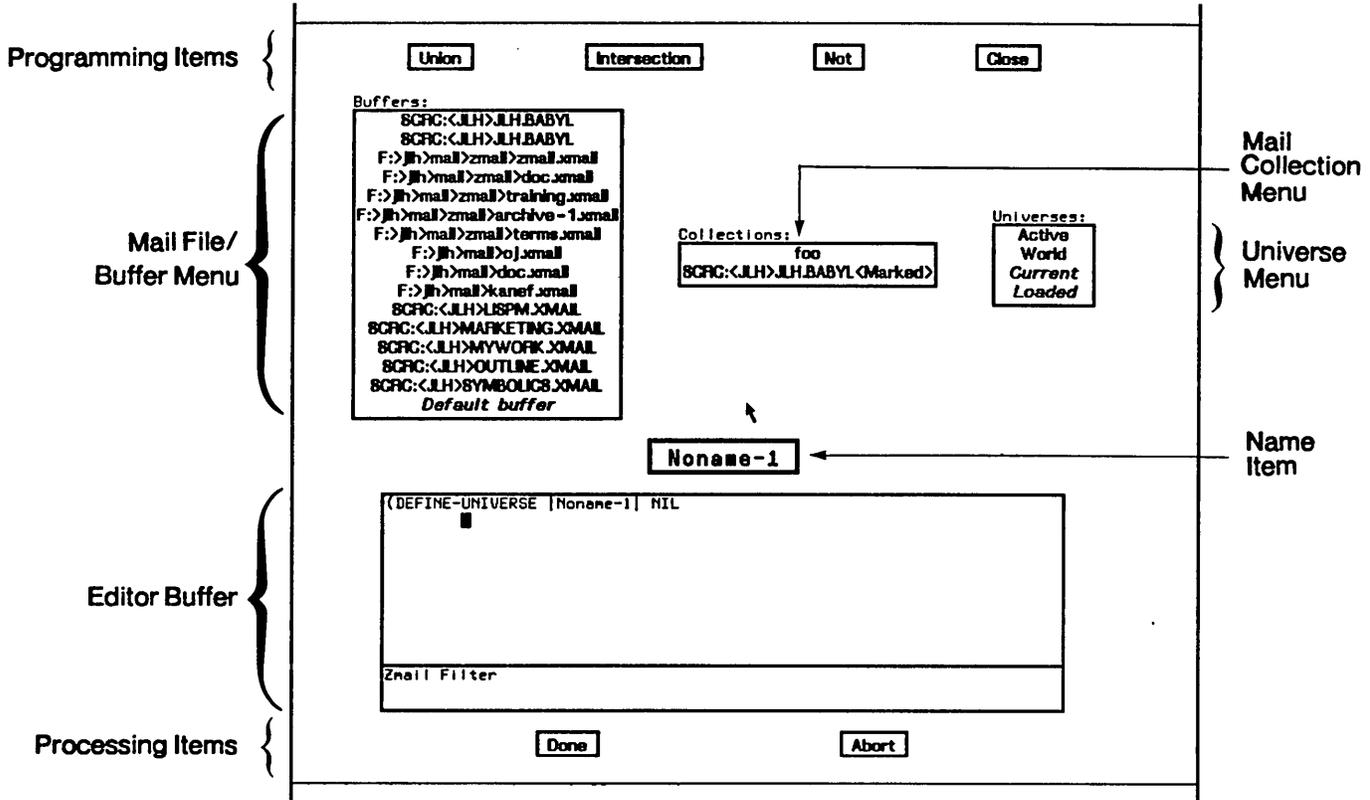


Figure 17. Universe Creation Display.

7.3.3 Saving Universes

To save a universe in your profile, use [Universes] in profile mode. When you save your profile, the universes you select are saved. Those universes, plus any you have defined during the current login session, show up in the universe menus.

8. Manipulating Messages

This chapter summarizes useful techniques for manipulating messages within a mail sequence. See the mouse documentation line for details.

8.1 Selecting

8.1.1 Based on Position

<i>Desired message</i>	<i>Mouse</i>	<i>Keyboard</i>
first	[Previous (M)]	J
last	[Next (M)]	Z J
arbitrary	click left on its summary line	n J
next	[Next]	N
previous	[Previous]	P
<i>n</i> th next (skipping deleted)		n N
<i>n</i> th next (including deleted)		n c-N
<i>n</i> th previous (skipping deleted)		n P
<i>n</i> th previous (including deleted)		n c-P

8.1.2 Based on Characteristics

- *If the message you seek contains a particular string:* Use Find String (m-X) or [Jump (R) / Search] to locate the next message containing the string you specify. Or use [Map over / Find string], which identifies all such messages; it types out the lines containing the string, and you select a message by clicking on a line.
- *More generally, if the message you seek satisfies a filter:* Use [Jump], which selects the next message that satisfies a filter. Use [Jump (R)] and specify the filter using the Filter Selection Display, Figure 14, or Filter Creation Display, Figure 15. To reexecute this command, use [Jump].

If you need to process these messages as a group — for example, delete them, or read and reread them — do not use these commands; put the messages in a mail collection. See the section "Mail Collections", page 78.

8.1.3 Based on the Stack of Recently Seen Messages

Sometimes, when you've been jumping from message to message, you find that you would like to get back to the last one you read but can't remember its number. Rather than force you to make scribbled notes, Zmail automatically keeps an eight-element stack of messages (actually a ring) from which you've jumped, called the *message stack*.

Four commands allow you to manipulate the message stack:

- *To display the stack and select any element using the mouse:* [Jump (M)]
- *To rotate the stack:* c-U c-SPACE
- *To pop the stack and discard the element popped:* c-U c-U c-SPACE
- *To (manually) push the current message onto the stack:* c-SPACE

8.2 Deleting and Undeleting

When you delete a message from a mail buffer, the message is not actually removed — it just acquires the property Deleted. You remove the message when you *expunge* the buffer; this happens automatically when you save it, or you can expunge it manually. See the section "Saving, Expunging, Killing, and Renaming Zmail Messages", page 81.

Most of the Next and Previous commands skip deleted messages. See the section "Selecting Zmail Messages Based on Position", page 67.

<i>Action</i>	<i>Operand</i>	<i>Command</i>
Delete	Current message	[Delete] D c-D
	Arbitrary message	Click middle on its summary line n D
	Message(s) referenced or replied to by current message	Delete Referenced Msgs (m-X)
	Duplicates in mail sequence	Delete Duplicate Msgs (m-X)
	Conversation	References (m-X)
Undelete	Current or closest preceding deleted message	[Undelete] U
	Arbitrary message	Click middle on its summary line n U
Toggle deleted property	Arbitrary message	Click middle on its summary line

Deletion from mail collections is somewhat different. See the section "Operating on a Message in a Mail Collection", page 80.

8.3 Replying and Remailing

8.3.1 Replying

To reply to a message, use [Reply], click right on its summary line before using [Reply], or press R. Zmail initializes the headers of the reply for you: the Subject is copied from the original message; the To and Cc fields include the original sender and recipients of the message. (The exact set-up depends on the mouse button you click and the options in your profile.) You can see the original message while you write your reply.

People frequently include some or all of the original message, indented four spaces, in their reply. You can yank (copy) the message into your reply by pressing c-X c-Y after using [Reply]. To prune some of the less useful headers from a yanked message, press c-X Y. c-X c-Y takes numeric arguments which control indentation and header pruning. See the section "Other Zmail Commands", page 45.

To reply to several messages at once use the following procedure:

1. Select a conversation using Select Conversation (m-X).
2. [Map Over / Reply]
3. Yank all the messages in the conversation into the reply using c-X c-Y.

By setting profile options, you can make the [Reply] command do most of this automatically.

8.3.2 Forwarding and Redistributing

To forward or redistribute a message, use [Mail (R)]. [Forward] lets you edit the message or add to it. Forward is also invoked by pressing F. [Redistribute] simply prompts for addressees and sends the message with the *Redistributed-by*, *To*, and *Date* fields added.

8.4 Moving a Message to a File

Pressing 0 prompts for filename to which to move the current message (using **zwei:com-zmail-move**). The message is first moved to a sequence and then to the file when you save out your files. Using [Move] moves the message to the *default move-destination file*. The initial setting for the default move-destination file can be defined using the profile editor; it is thereafter the last file to which a message was moved. Using [Move (R)] pops up a menu offering several options for moving the message.

8.5 Hardcopying

<i>Action</i>	<i>Command</i>
One message	[Move / Hardcopy] Click right on its summary line then [Move / Hardcopy]
All messages in current sequence	[Map over / Move / Hardcopy]

In any of these commands you can use [Hardcopy (R)] to get a menu that permits you to specify the number of copies, the font, and which printer to use. The Other option in the list of printers allows you to specify an arbitrary printer, using either its pretty name or its namespace name. This printer becomes the selected printer, and remains in the menu for subsequent hardcopy commands.

8.6 Editing

It is sometimes handy to edit a message saved in your mail file. To do so, select it as current and press `c-R` or click left on the message window. Press `END` when you finish editing.

8.7 Reordering

You can rearrange a mail sequence in two ways: by sorting the messages or by appending messages to one another.

<i>Strategy</i>	<i>Command</i>	<i>Note</i>
By sorting your messages	[Sort (R)]	Displays a menu of sort keys and directions
By appending one message to another	Click right on summary line of first message, then [Append]	Specifies the message you wish to append; [Append (R)] allows you to choose which message it gets appended to.
By concatenating several messages	Place them all in a mail collection [Map over / Concatenate]	The message(s) that gets appended is deleted.

8.8 Operating on Messages Referred to by the Current Message

Often, receiving a reply to a message makes you want to delete the original one or refer back to it. If your mail files are more than 30 or 40 messages long it might be difficult to find the original message. Zmail can help by searching for messages referenced by the current one.

The current message *references* a message *x* if it includes:

- a citation to *x* in an In-reply-to or References header
- the yanked-in headers of message *x*

Usually, this means that the current message is a reply to message *x*.

The following referenced message commands are available:

Select Referenced Msg (`m-X`)

Selects the referenced message as current.

Delete Referenced Msgs (m-X)

Deletes the referenced messages.

Append To Referenced Msg (m-X)

Appends this message to the referenced message.

Move In Place Of Referenced Msg (m-X)

Moves this message to where the referenced message is, and deletes the referenced message.

Select References (m-X)

Creates a mail collection of all messages referenced by the current message. The collection also includes messages referenced by the referenced messages, messages referenced by *them*, and so forth.

Select Conversation by References (m-X)

Defines a conversation and selects it as a collection. This command is very similar to Select References.

Delete Conversation By References (m-X)

Deletes conversations by references.

Select All Conversations By References (m-X)

Selects messages to which a message in the sequence refers, or that refer to a message in the sequence, recursively; this is implemented by **zwei:com-zmail-select-all-conversations-by-references**. It is equivalent to appending together all sequences gotten from Select Conversation By References (m-X) for each message in the current sequence. An argument gives a menu of universes to search. The command defaults to loaded files. You can also perform this operation using [Map Over (R) / Select Conversation].

Append Conversation by References**Append Conversation by References (m-X)**

Append messages to which this message refers, or which refer to this message, recursively.

The commands with the word "reference" in their names use hash tables rather than searching. With a numeric argument, the Reference commands offer a menu of universes for searching.

If the current message has references to several messages, Select Referenced Msg, Append To Referenced Msg, and Move In Place Of Referenced Msg ask which message to choose. Delete Referenced Msgs and Select References choose all referenced messages.

To find the referenced message(s), Zmail looks in the current sequence. If the

message is not there, Zmail tells you about the references not satisfied. If given an argument, Zmail pops up a menu of other sequences to search first.

Often, though, you know in *advance* where referenced messages can be found. For example, you might store all your messages about hardware in a particular file. If you get a message about hardware, the messages it refers to are probably also about hardware, and thus they are probably in that file. You can give Zmail this type of knowledge by setting the *filter-universe alist* in profile mode.

Filter-universe Alist

The filter-universe alist is an *association list* of filters and universes. It tells Zmail where to look for the referenced message: if the current message satisfies a filter on the list, the corresponding universe is searched. If other than one undeleted message is found in the search by Select Referenced Msg, Append To Referenced Msg, or Move In Place Of Referenced Msg, Zmail pops up a menu of the messages.

As an example, suppose you kept your hardware-related messages in the files PRINTER-HARDWARE.BABYL and 3600-HARDWARE.BABYL. The union of these files is the universe "Hardware". See the section "Defining Zmail Message Search Spaces", page 64. On the alist, we pair the filter "Hardware" with the universe "Hardware". See the section "Creating Zmail Filters", page 60. Henceforth, if the current message concerns hardware, Zmail looks for references to the message in the two files/buffers that make up the universe.

To set the filter-universe alist, use [Filters (M)] or [Universes (M)] in profile mode. While in profile mode, you should also use the User Options Window to set your options so that replies you send automatically include either an In-reply-to field or the yanked-in message itself. That way, people receiving your replies can use the referenced message commands.

9. Managing Your Mail

When you start getting more than a few messages a day, it becomes difficult to keep things in order. Messages requiring future action begin to pile up, and pretty soon just sorting through old messages leaves no time for new. For situations like this, Zmail provides the following classes of capabilities:

- Classifying messages by adding keywords to them
- Working with groups of related messages (mail collections)
- Storing groups of related messages into separate mail files

See the section "Testing Zmail Message Characteristics", page 58. See the section "Defining Zmail Message Search Spaces", page 64.

9.1 Classifying Messages

Zmail allows you to classify and categorize messages by adding keywords to them. Keywords are useful in many ways, among them:

Topic Indicators	Tag the major topic of the message. If your work involves designing input-output devices, for example, you might use keywords such as disk, printer, and tape drive. The topic indicators you need depend on the sort of messages you get.
Classifiers	Orthogonal to the main topic, indicate the type of message. For example, you might use keywords such as bug, feature-request, documentation-bug, and issue to categorize messages as bug reports, requests for features, reports of documentation bugs, and issues under discussion.
Status Flags	Indicate the status or priority of the message. For example, you might use a keyword such as to-do to flag messages that require you to do something and a keyword such as timing-out to flag messages on which you are awaiting action from other people. You could use P0, P1, P2, and P3 to indicate the priority of a message requiring further action.

9.1.1 Setting Keywords

<i>Desired result</i>	<i>Command</i>	<i>Note</i>
Keywords set on current message	[Keywords (R)] Click right on curly brackets ({ }) in the mode line	Gives highlighted menu of keywords, in addition to the entry [New] for adding a new keyword
	L	Prompts in the minibuffer for keywords for the current message (using zwei:com-zmail-keywords)
	[Keywords] Click left on curly brackets ({ }) in the mode line	Repeats the last keyword command
Keywords set on arbitrary message	Click right on message summary line, then use commands above as for current message	

Using [Keywords (M)] you can ask Zmail to add the appropriate keywords automatically. "Appropriate" is determined using a *filter-keyword alist*, similar to the alist used by the referenced-message commands. Each filter is associated with a list of keywords; using [Keywords (M)] adds the keywords corresponding to all filters which the message satisfies.

For example, you could associate filters and keywords as follows:

<i>Filter</i>	<i>Keyword(s)</i>
Hardware	hardware
Lisp Machine File System	lisp, file-system
3640	3640

With this scheme, a message about the use of the Lisp Machine file system on the 3640 would get the keywords lisp, file-system, and 3640 if you use [Keywords (M)]. The mouse documentation line tells you which keywords are to be added, so you can check first. If none are to be added, the mouse documentation line shows nothing for [Mouse (M)].

To set the filter-keyword alist, use [Filters (M)] or [Keywords (M)] in profile mode. Using [Filters (M)] allows you to alter the associations of a given filter; using [Keywords (M)] allows you to alter the associations of a given keyword. You will probably want to save the alist (and the filter definitions) in your profile.

9.1.2 Saving Keywords

You can also store keywords, so that they appear on the highlighted menus before you have ever used them. This is useful if you anticipate needing particular keywords in the future. To do so, use [Keywords] in profile mode. The keywords

are actually stored in the individual mail files. The list of keywords stored in a particular mail file includes all keywords associated with any message ever in the file, plus any you add using [Keywords]. The keywords list displayed in the various menus is the union of the lists in all mail buffers.

9.2 Mail Buffers

9.2.1 Listing Zmail Buffers, Mail Files and Collections

Your current Zmail session consists of mail buffers (with associated mail files) and collections. Collectively these are referred to as *sequences*. You can list all the sequences in your current Zmail session as well as any mail files (known to your profile) that have not yet been read in. You do this with List Sequences (m-X). The items on the list are mouse sensitive.

9.2.2 Selecting Mail Buffers and Files

To select another mail buffer or file, use [Select (R)]. Click on the name of the desired buffer or file (if it appears) or use [Read/Create file] to specify the name of a file. Specify the name of the file to be read into a buffer. The buffer then takes the name of the file. The following are all possibilities:

- *The buffer exists:* it is selected.
- *The buffer doesn't exist, but a file of the same name does:* the file is read into a buffer and selected.
- *Neither exist:* a new buffer is created. Saving the buffer creates a new file.

Using [Select (L)] returns you to the previously selected sequence. Subsequent left clicks alternate between the two sequences.

c-m-L is like [Select (L)]. With an argument of 0 it works like [Select (R)]. With an argument of 1 or greater, it works as in Zmacs and selects from the stack of previously selected sequences. See the section "Changing Buffers" in *Text Editing and Processing*.

9.2.3 Copying a Message to Another Buffer

<i>Action</i>	<i>Command</i>	<i>Note</i>
Copy a message to another mail buffer	[Move (R)] or click right on message summary line then [Move] Then click left on buffer or [Find file]	Original copy of message is deleted; undelete for two copies or set the profile option "Delete message when moved into file" to No
Copy another message to same buffer	[Move]	Copy current message to same buffer as the last [Move]
Copy a message based on an alist set in profile mode	[Move (M)] or click right on message summary line then [Move]	Like using [Keywords (M)]; set an alist by using [Filters (M)] or [Mail Files (M)]

A filter-mail file alist associates a single mail file with each filter in the list. Using [Move (M)] moves the message to the files corresponding to the filters in the list satisfied by the message.

For example, if you associated your Hardware filter with the file `HARDWARE.XMAIL` and a Software filter with `SOFTWARE.XMAIL`, you could use [Move (M)] to move your messages to the appropriate mail buffer. With two or three mail files and filters, this is a very powerful tool.

To move a group of related messages to another mail buffer, you have to use mail collections. See the section "Mail Collections", page 78.

As with [Select], if the buffer doesn't exist, it is read in or created.

9.2.4 Saving a List of Mail Files

You can store a list of mail files in your Zmail profile, so that their names appear in the various mail file menus. Use [Mail files] in profile mode. (Zmail does not load the files on this list, it just makes the names easily accessible. You still have to use [Select].) To alter the attributes of a mail file, use [File options] in profile mode.

9.3 Mail Collections

To work with a group of related messages, you first put them all in a mail collection.

9.3.1 Creating a Mail Collection

<i>Strategy</i>	<i>Goal</i>	<i>Procedure</i>
By filtering	Choosing a filter	[Select (M)] Choose filter from Filter Selection Display
	Including messages from more than one sequence	Click left on universe menu item Select or define a universe
	Selecting predefined filters based on the headers of any message in the current sequence (Here, current sequence is the universe.)	Click right on that message's summary line then [Filter] Select filter
By marking an individual message		[Select / Mark survey] to enter Marking mode Clicking left on a summary line toggles the inclusion of the message in the collection Press END to finish or ABORT to abort
Starting with a single message	Specifying a name for the mail collection	[Move / New collection] Click right on its summary line then [Move / New collection]
	Disregarding naming the collection	[Move / Recycled collection] Click right on message summary line then [Move / Recycled temporary]

9.3.2 Operating on a Mail Collection

<i>Action</i>	<i>Command</i>	<i>Note</i>
Select any collection as current sequence	[Select (R)]	
Add message to collection	[Move] Click right on its summary line then [Move]	Message not deleted
Remove message from collection	[Delete / Remove] Click right on its summary line then [Remove]	Message not deleted (This command sequence exists only when current sequence is a collection)

9.3.3 Operating on a Message in a Mail Collection

Remember that mail collections are sequences of messages drawn from mail buffers. The message exists in its original mail buffer. Therefore, *any change you make to the message appearing in the mail collection (for example, adding keywords to it) is reflected in the mail buffer, and vice versa.*

A single message can exist in several mail collections (some of which could have been created by filtering or marking on *another* mail collection). Changes made to any image of the message are reflected in the buffer and all collections in which it appears.

<i>Action</i>	<i>Effect</i>
Deleting a message	All images of message marked as deleted.
Expunging buffer	Deleted message disappears from buffer containing actual message and all collections in which it appears.
Expunging collection	Deleted message disappears from that collection only. (The actual message and all remaining images are still marked as deleted.)

9.4 Operating on a Group of Messages

To do something to every message in a mail collection or mail buffer use [Map over (R)], which gives you a menu that includes the following choices:

<i>Menu choice</i>	<i>Action</i>
[Delete]	Deletes all messages
[Undelete]	Undeletes all messages
[Keywords]	Puts specified keywords on all messages
[Unkeywords]	Removes specified keywords from all messages
[Concatenate]	Appends all messages to the first message
[Move]	Moves all messages to file
[Redistribute]	Redistributes all messages
[Forward]	Forwards all messages (concatenated into one message)
[Reply]	Replies to all messages
[Type]	Types out all messages
[Find string]	Shows lines within messages containing the given string
[Select Conversations]	Selects messages to which a message in the sequence refers, or that refer to a message in the sequence, recursively; this is implemented by zwei:com-zmail-select-all-conversations-by-references.

Three particularly useful commands are:

[Map over / Move (M)]

Like using [Move (M)] for each individual message; that is, each message is moved to the appropriate file, based on the filter-mail file alist.

[Map over / Move / By Individual Filters]

A synonym for [Map over / Move (M)].

[Map over / Keywords (M)]

Like using [Keywords (M)] for each individual message; that is, each message is given the appropriate keywords, based on the filter-keyword alist.

9.5 Saving, Expunging, Killing, and Renaming

<i>Action</i>	<i>Command</i>	<i>Note</i>
Save all buffers	s [Save]	Also expunges any buffers or collections with deleted messages
Save to another file computer or the local file system by renaming mail buffer with appropriate pathname	Click left on name in mode line	Used if your file computer is down; also to rename collections; but use [Map over / Move] to change collections into buffers
Expunge current sequence	E [Save (M)]	
See menu of these options	List (m-x) [Save (R)]	(x)'s or *'s show what pressing s or using [Save] would do

The menus also allow you to use [Kill] on a buffer or collection, that is, simply get rid of Zmail's image of it. Files on disk are not affected.

Start Background Save (m-x) suppresses background mail checks and starts a save in the background. This allows you to compose and send mail messages while the save is being done.

9.6 Hints for Using Keywords, Mail Collections, and Mail Files

Using the mechanisms described in this chapter is an art. Here are some suggestions.

Familiarize yourself with the range of options in profile mode. Try out different settings.

Decide on some useful topic, classifier, and status keywords and store them in your default mail file. Start using them; new ones added later will be stored automatically. After you've gained some experience with them, define some filters and create a filter-keyword alist so you can add keywords with click middle.

When your mail file starts getting big - 100 messages is certainly big for a default mail file, 200 for others - split it into two files by following these steps:

1. Filter on some message attribute to make a mail collection. If you've chosen your keywords well, you can just use a keyword filter. (To simply split the file into old and new messages, use [Before] on the Filter Creation Display.)
2. If you used a keyword filter in step 1, use [Map over / Unkeywords] to remove the keyword you filtered on, since everything in the new collection has that keyword.
3. Use [Map over / Move / Find file] to move the collection to another file.
4. Use [Save] to save your buffers and dispose of the collection.

When you have two or more mail files, create a filter-mail file alist so that you can use [Move (M)]. Create a filter-universe alist so that you can use the referenced message commands more effectively.

With files, keywords, and alists set up, your response to a new message might be among the following:

- Delete it.
- Reply to it.
- Put some keywords on it.
- Move it to another file.
- Look at the message it refers to.
- Delete the message it refers to.

If you have a lot of new mail, you might not want to read it in the order in which it arrived.

1. Use [Unseen] on the Filter Selection Display to put the new mail in a mail collection.
2. Use [Map over / Move (M)].
3. Read the new mail in each of the files to which it was moved.

(You must have a Filter-Mail File alist set up in order to use this procedure.)

10. Reference Information

10.1 Zmail Profile Options

The profile menu allows you to customize Zmail. Here is a list of the various options in the order in which they appear in the menu. Many of them are self-explanatory.

zwei:*keyword-alist-sort-predicate* *Variable*
Profile Option: Predicate for sorting keywords in keyword menu

zwei:*preserve-msg-references-across-expunge* *Variable*
Profile Option: Add header fields to other msgs when expunging msg

Controls whether the backward and forward references among messages in a conversation should be preserved when a message is deleted and expunged from the middle of the conversation. If you leave it *no* (**nil**, the default), the references will not be preserved. If you change it to *yes* (**t**), appropriate header fields will be added to the messages referred to by the deleted message or referring to the deleted message so that the conversation continues to hold together.

zwei:*delete-after-move-to-buffer* *Variable*
Profile Option: Delete message when moved into buffer

Controls the automatic deletion of a message from one buffer when it is moved to another buffer. If you leave it *yes* (**t**, the default) the message is deleted from its original buffer when it is moved to a new one. If you change it to *no* (**nil**) the message appears in both buffers.

zwei:*query-before-expunge* *Variable*
Profile Option: Show headers and ask before expunging deleted messages

Controls whether you are asked for confirmation when messages are being expunged from the mail file. If you leave it *no* (**nil**, the default), you are not asked. If you change it to *yes* (**t**), the headers of the messages to be expunged are displayed and you are asked to confirm the expunge.

zwei:*forwarded-add-subject* *Variable*
Profile Option: Forwarded messages are supplied with a subject

zwei:*always-jump-after-get-new-mail-from-inbox* *Variable*
Profile Option: Move to first message even when no new mail in inbox

- zwei:*one-window-after-yank*** *Variable*
Profile Option: Just show headers and text after yanking in message
Controls the window configuration in a reply when the text of the message being replied to is included. If you leave this *yes* (**t**, the default), only one window is used after the message being replied to is yanked into the reply. If you change this to *no* (**nil**), both windows are kept, even though the text of the message being replied to is included in the reply window.
- zwei:*inhibit-background-saves*** *Variable*
Profile Option: Automatically save buffer after reading inbox
Controls the automatic saving of your mail buffer. If you leave it *yes* (**nil**, the default), your buffer is automatically written out when your inbox has been read. If you change it to *no* (**t**), the buffer is not saved until you save it explicitly.
- zwei:*complete-get-inbox-in-background*** *Variable*
Profile Option: Read in inbox in the background
- zwei:*inhibit-background-mail-checks*** *Variable*
Profile Option: Periodically check for new mail in the background
Controls the checking of your inbox for new mail. If you leave it *yes* (**nil**, the default), Zmail will check periodically and notify you if there is new mail. If you change it to *no* (**t**), this action will be inhibited.
- zwei:*prune-headers-after-yanking*** *Variable*
Profile Option: Prune headers of yanked messages
Controls how much of the header information is kept on messages included in replies. If you leave it *no* (**nil**, the default), the entire header of the included message is kept. If you change it to *yes*, (**t**) only the date and from lines are kept.
- zwei:*next-after-delete*** *Variable*
Profile Option: Direction to move after delete
Controls which message to select as current when you delete the current message. The choices are: Backward, Forward (the default), No, Forward/Remove, and Backward/Remove.
- zwei:*delete-middle-mode*** *Variable*
Profile Option: Direction to move for click middle on delete
Controls which message to select as current when you delete the current message using [Delete (M)]. The choices are: Backward (the default), Forward, No, Forward/Remove, and Backward/Remove.

zwei:*default-initial-window-configuration* *Variable**Profile Option:* Default startup window setup

Controls the configuration of your Zmail windows when you invoke Zmail for the first time. The choices are: Summary only, Both (the default), Message only, and Experimental.

zwei:*mail-middle-mode* *Variable**Profile Option:* Middle button on Mail command

Controls the action of [Mail (M)]. The choices are: Bug (send a bug message, the default), Mail, Forward, Redistribute, and Local.

zwei:*map-middle-mode* *Variable**Profile Option:* Middle button on Map command

Controls the action of [Map (M)].

zwei:*previous-middle-mode* *Variable**Profile Option:* Middle button on Previous command

Controls the action of [Previous (M)]. The choices are:

Previous undeleted

Select the previous undeleted message.

Previous

Select the previous message, whether or not it is marked for deletion.

Previous unseen

Select the previous unseen message.

Previous recent

Select the previous recent message.

First undeleted

(The default.) Select the first undeleted message in the buffer.

First

Select the first message in the buffer, whether or not it has been marked for deletion.

First unseen

Select the first unseen message in the buffer.

First recent

Select the first recent message in the buffer.

zwei:*next-middle-mode* *Variable**Profile Option:* Middle button on Next command

Controls the action of [Next (M)]. The choices are:

Next undeleted

Select the next undeleted message.

Next

Select the next message, whether or not it has been marked for deletion.

Next unseen

Select the next unseen message.

Next recent	Select the next recent message.
Last undeleted	(The default.) Select the last undeleted message in the buffer.
Last	Select the last message in the buffer, whether or not it has been marked for deletion.
Last unseen	Select the last message in the unseen sequence.
Last recent	Select the last message in the recent sequence.

zwei:*summary-mouse-middle-mode* *Variable*

Profile Options: Middle button on summary window

Controls the action when you click middle on a message header in the summary window. The default is Delete/Undelete which means if the message is not deleted, mark it for deletion. If it is marked for deletion, unmark it.

zwei:*generate-in-reply-to-field* *Variable*

Profile Option: Automatically generate In-reply-to fields

Controls whether the headers on a reply will contain an In-reply-to: field, referencing the original message. If you leave it *yes* (**t**, the default) an In-reply-to: field is generated. If you change it to *no* (**nil**) this field is not generated.

zwei:*require-subjects* *Variable*

Profile Option: Require subjects on outgoing messages

Controls whether or not you are required to supply a Subject: line on messages you send. The choices are:

Yes	(t , the default.) Require a Subject: line on each message.
No	(nil) Do not require a Subject: line. You can add one yourself if you want one.
On bug reports	Require a Subject: line on bug reports but not on other messages.
Initial but not required	Supply a Subject: line in the generated header for a message, but do not require that it be used.

zwei:*prompt-for-missing-headers* *Variable*

Profile Option: Use the mini-buffer to read missing headers

zwei:*default-cc-list* *Variable*

Profile Option: Default initial Cc list

Allows you to specify a list of recipients of copies of messages you send.

zwei:*default-fcc-list* *Variable*

Profile Option: Default initial Fcc list

Allows you to specify a list of files to which copies of your messages are sent.

zwei:*delete-expired-msgs* *Variable*

Profile Option: Automatically delete expired messages

Controls whether or not you are asked before expired reminders in calendar mode are deleted. The default is per file, meaning that you can set it differently for each file.

zwei:*local-mail-include-subject* *Variable*

Profile Option: Local mail starts out with a subject

zwei:*local-mail-header-force* *Variable*

Profile Option: Header force for local messages

Controls the format of headers on messages sent on your local system. The possibilities are none, RFC733 (Arpanet standard), Network, and ITS (MIT Incompatible Time Sharing). The default is ITS.

zwei:*reply-header-format* *Variable*

Profile Option: Format of headers inserted for reply

The choices are: Short (the default), Long, Include personal, and Use original.

zwei:*send-header-format* *Variable*

Profile Option: Format of headers sent

The choices are: Short, Long, Include personal (the default), and Use original.

zwei:*default-mail-window-configuration* *Variable*

Profile Option: Default window configuration when mailing

Allows you to specify how the window is configured in mail mode.. The choices are:

- | | |
|--------------|---|
| Both | The message is composed in the the lower (message) window, the command pane and the summary window remain as usual. |
| Experimental | The message is composed in the lower (message) window. The command pane is divided into three sections providing a variety of operations. |
| Send | (The default.) The screen is divided into two windows, the header window and the message window. |

Message only The screen consists of one window with the headers at the top.

zwei:*reply-window-mode* *Variable*

Profile Option: Default reply window setup

Two windows (The default.) The message you are replying to is displayed in the upper window. You compose your reply in the lower window.

One window The message you are replying to is not displayed.

Yank The message you are replying to is included in your reply.

zwei:*reply-mode* *Variable*

Profile Option: Default reply to

Controls the automatic generation of to and cc fields in the header of a reply. The default is to reply to all addressees in the original message. For an explanation of the choices: See the section "Zmail Reply Command", page 31.

zwei:*1r-reply-mode* *Variable*

Profile Option: Default reply with argument of 1 to

Controls the automatic generation of to and cc fields in the header of a reply when the reply command is given an argument of 1. The default is to reply to the sender of the message. For an explanation of the choices: See the section "Zmail Reply Command", page 31.

zwei:*middle-reply-window-mode* *Variable*

Profile Option: Default reply window setup for middle button

Controls the configuration of the windows in reply mode when you click middle on Reply. The default is two windows.

zwei:*middle-reply-mode* *Variable*

Profile Option: Default reply to for middle button

Controls the automatic generation of to and cc fields in the header of a reply you click middle on Reply. The default is to reply to the sender of the message. For an explanation of the choices: See the section "Zmail Reply Command", page 31.

zwei:*dont-reply-to* *Variable*

Profile Option: People not to reply to

Allows you to specify a list of addresses to avoid sending a reply to automatically. For example, if a message were broadcast to a large mailing list asking a question, you might want to reply only to the sender, not the entire mailing list.

- zwei:*forwarded-message-begin*** *Variable*
Profile Option: Format line before forwarded messages
Allows you to specify a string to use to introduce a forwarded message.
- zwei:*forwarded-message-separator*** *Variable*
Profile Option: Format line between forwarded messages
Allows you to specify a string to use in between two forwarded messages.
- zwei:*forwarded-message-end*** *Variable*
Profile Option: Format line after forwarded messages
Allows you to specify a string to use after a message being forwarded.
- zwei:*zmail-startup-file-name*** *Variable*
Profile Option: File read in at startup
Your mailbox file.
- zwei:*text-mail-file-separator*** *Variable*
Profile Option: Line between messages in text mail file
Allows you to specify a string to be used in your mail file to separate message.
- zwei:*default-move-mail-file-name*** *Variable*
Profile Option: Default file for moving to a new file
Allows you to specify the pathname of the file to which you usually want to move messages.
- zwei:*default-draft-file-name*** *Variable*
Profile Option: Default file for saving draft
Allows you to specify a pathname to use for saving draft messages.
- zwei:*mail-file-for-drafts*** *Variable*
Profile Option: Mail file to store drafts in
- zwei:*run-gmsgs-p*** *Variable*
Profile Option: Run GMSGs before getting new mail
If you keep your mail on an ITS host at MIT and use the GMSGs facility, this option allows you to use it from Zmail.
- zwei:*gmsgs-other-switches*** *Variable*
Profile Option: Other switches to supply to GMSGs server
Allows you to specify arguments to the GMSGs command.

- zwei:*default-summary-template*** *Variable*
Profile Option: Default summary display format
- zwei:*summary-subject-trim-spaces*** *Variable*
Profile Option: Spaces are trimmed from the left of the subject in summary
- zwei:*new-mail-file-append-p*** *Variable*
Profile Option: Appending of inboxes to new mail files
- Controls the order in which messages appear in a new mail file you create. The choices are:
- | | |
|---------|---|
| Append | New mail files append messages. |
| Prepend | New mail files prepend messages. |
| Sticky | (The default.) New mail files inherit whether they append messages from the current buffer. |
| Ask | You are queried when creating a new mail file as to whether it appends messages. |
- zwei:*summary-scroll-fraction*** *Variable*
Profile Option: Amount by which to glitch summary window
- zwei:*summary-window-fraction*** *Variable*
Profile Option: Fraction of the frame occupied by the summary
- Controls the percentage of the screen occupied by the summary window in the default window configuration. The default is 45 percent, which means that the command window divides the screen in half, with approximately equal sized summary and message windows above and below respectively.
- zwei:*filter-summary-window-fraction*** *Variable*
Profile Option: Fraction of the frame occupied by the summary in filter mode
- zwei:*header-window-nlines*** *Variable*
Profile Option: Number of lines (or fraction) occupied by headers in mail mode
- Controls the number of lines in the header window in mail mode. The default is 3.
- zwei:*default-mail-buffer-generation-retention-count*** *Variable*
Profile Option: Generation retention count set on newly created mail files
- Controls the automatic deletion of copies of a new mail file. If it is left blank (**nil**) no deletion of earlier copies is done. Otherwise, the specified number are kept and others deleted. The UNIX file system does not handle this variable, so if your mail is stored on a UNIX system, leave this variable **nil**.

zwei:*configure-middle-mode* *Variable*

Profile Option: Middle button on Configure

Controls the action of clicking middle on Configure. The choices are: Summary only, Both (the default), Message only, Experimental, Calendar, Month, Four weeks, Week, Year.

zwei:*calendar-mode-week-starts-on-monday* *Variable*

Profile Option: The week starts on Monday rather than Sunday in calendar mode

zwei:*query-before-selecting-empty-sequence* *Variable*

Profile Option: Confirmation is required to select an empty sequence

zwei:*always-select-saved-current-msg* *Variable*

Profile Option: Reselect previous current message even if current message in sequence

Some of the menu items in the profile display also write information into your profile. These are:

Mail Files (Menu)

- | | |
|------------------|---|
| [Mail Files] | Other Mail Files. Allows you to add files to the list of mail files to be remembered in your profile. |
| [Mail Files (M)] | Filter associations. Select a mail file whose filter associations to edit. |
| [Mail Files (R)] | Pop up a menu of Other Mail Files and Filter associations. |

File Options (Menu)

Select one of your mail files whose file options to edit.

Keywords (Menu)

- | | |
|----------------|---|
| [Keywords] | Edit keyword list for all your mail files. |
| [Keywords (M)] | Select a keyword whose filter associations to edit. |
| [Keywords (R)] | Pop up a menu of Mail Files Keywords and Filter associations. |

10.2 System Dependencies

10.2.1 Disk File Names

The files discussed in this document (mail files, default mail files, inboxes, renamed inboxes, and source and compiled init files) have distinctive file names that vary depending upon the host system you use. The following table gives the names, assuming your user id (login name) is *user-id*. Except as indicated, all files are in your standard login directory (homedir). ("LMFS" means the Lisp Machine's own file system.)

<u>System</u>	<u>Default mail file</u>	<u>Other mail files</u> ¹
LMFS	babyl.text	*.babyl or *.xmail
ITS	<i>user-id</i> BABYL or <i>user-id</i> RMAIL	* BABYL or * XMAIL
TENEX/TOPS-20	<i>user-id</i> .BABYL	*.BABYL or *.XMAIL
UNIX	mbox or <i>user-id</i> .bb	*
<u>System</u>	<u>Inbox</u>	<u>Renamed inbox</u>
LMFS	mail.text	mail.-zmail-text
ITS	<i>user-id</i> MAIL	<i>user-id</i> _ZMAIL
TENEX	MESSAGE.TXT;1	MESSAGE.-ZMAIL-TXT
TOPS-20	MAIL.TXT.1	MAIL.-ZMAIL-TXT
UNIX	/usr/spool/mail/ <i>user-id</i> or ~/.mail	/usr/spool/mail/ <i>user-id</i> .zmail ~/.mail/.zmail
<u>System</u>	<u>Source files</u>	<u>Compiled file</u> ²
LMFS	zmail-init.lisp	zmail-init.bin
ITS	ZMAIL >	<i>user-id</i> ZMAIL
TENEX/TOPS-20	zmail-init.lisp	zmail-init.bin

¹Names in this column are conventional but not required.

²Or Source file, if Init file is not compiled. If you subsequently delete your compiled file, rename the source file to the name in this column.

UNIX zmail-init.l zmail-init.bn

10.2.2 Mail File Formats

Zmail understands four standard mail file formats: BABYL, RMAIL, TENEX, and UNIX. In most cases, the format is transparent to the user. However, the following information is useful if you transfer files between systems.

Zmail recognizes the format of a mail file from its contents, never from its file name, but with the following limitation: certain formats are only recognized on certain systems:

<i>Mail file format</i>	<i>System(s)</i>
BABYL	All
RMAIL	LMFS, ITS
TENEX	TENEX/TOPS-20
UNIX	UNIX
VAX/VMS	Not supported at present

To select a mail file whose format does not satisfy these expectations, use Select Arbitrary Format Mail File, which allows you to specify the format explicitly. (Inbox files have a different format on each system, and can only be read on the type of system on which they were written.)

For UNIX, if you want your default mail file to be a BABYL file (which cannot be processed using the UNIX mail reading program, but which is more useful when using Zmail), the file *user-id.bb* must be created in your home directory and the Mail option in that file set to:

Mail:homedir/mbox,/usr/spool/mail/user-id

10.2.2.1 gmsgs Service for ITS Users

Zmail allows a BABYL file to specify which host to use for **gmsgs**. The option is called **:gmsgs-host**. Thus if you keep your BABYL file on a host that does not have a **gmsgs** server, you can still have **gmsgs** service by specifying an ITS host.

10.2.3 Support for Internet Domain Addressing

Zmail supports the Internet RFC822 domain-addressing formats, for the purpose of parsing and replying to messages with domain-format addresses in their headers. If the machine name is registered in the ARPA network host table, that name is used in the address. If the machine name is not registered, the network address is used, in the form *[address]*, where *address* is the four integer numbers which specify the host in Internet addressing.

10.2.4 Features Not Supported by Zmail

Some mailers and file formats do not support all of the features described in this document.

UNIX and RMAIL format do not support keywords, properties, or file attributes. TENEX format does not support keywords or file attributes. Mail buffers for files in these formats can use these features, but the information is not saved in the disk copy.

Mailing lists are not supported if your system host is a Lisp Machine.

VAX/VMS mail is presently unsupported; that is, VMS format inboxes and mail files cannot be read or written. However, mail files in any the four standard formats can be stored on VMS.

PART II.**Converse**

11. Introduction to Converse

Converse is a facility for communicating interactively with other logged-in users.

The Converse interactive message editor is operated by a window with its own process. Converse keeps track of all of the messages that you have received or sent. The Converse window shows all of the messages that have been sent or received since the machine was cold booted.

Messages sent between you and another user are organized into a *conversation*. Conversations are separated from each other by a thick black line. Within each conversation are all messages, outgoing and incoming, arranged in chronological order, and separated by thin black lines.

You can use Converse to look at conversations, send messages, and receive messages. Converse is built on the Zwei editor, so you can edit your message as you type it in, or pick up and move around text between one message and another, or among messages, files, and pieces of mail.

To enter Converse, do one of the following:

- Press **SELECT C**.
- Evaluate (**qsend**).
- Use [Select / Converse] in the System menu.
- Answer **c** in the Converse pop-up window when a message arrives.

12. Using Converse

When you enter Converse for the first time, the window is empty except for a blank message at the top of the screen, starting with `To:`. You start a message by filling in a recipient after the `To:` and typing the message text. To send the message, press `END`. When the message has been sent successfully, it appears as a conversation. A blank message remains at the top of the screen, and just below that a heavy black line delimits the message(s) of the conversation you just started. Just below the heavy black line is another blank message, but this one has the name of the other person in the conversation filled in. Below this blank message, separated by a thin black line, appears the message you just sent, with the date and time it was sent.

When the person to whom you sent the message replies, the reply appears in the conversation above the message you sent, and below the blank message. Your cursor is left in the blank message so you can reply easily.

You can use the regular editor commands to move around in the Converse window. There are two commands specific to Converse that are particularly useful: `c-m-]` (move to next conversation) and `c-m-[` (move to previous conversation).

You exit from Converse by pressing `ABORT` or by selecting another window. You can also press `c-END` when sending a message to send the message and exit from Converse.

To start a conversation, enter Converse, go to the top of the Converse window and fill in the blank message, starting with the `To:` line to specify the new recipient. Finish by pressing `END` to send the message. To send the message and exit Converse, finish by pressing `c-END`.

To send a message as part of an existing conversation, find that conversation in Converse and fill in the blank message at the beginning of the conversation, finishing by pressing `END` to send the message, or by pressing `c-END` to send the message and exit Converse.

You do not have to be in the main Converse window to receive messages. Converse will deliver a message to you in any window. Since this might be annoying, you can customize what happens when a message arrives by using the variable `zwei:*converse-mode*`. See the section "Customizing Converse", page 105.

When you are in a window other than Converse and a new message arrives, a window pops up at the top of the screen displaying the message. You can respond `R` to type in a reply, `N` (for "no action") to make the message window deexpose, or `C` to enter Converse. Entering Converse has several advantages: you can look over the previous messages in the conversation, and you can use the editor to help you construct a reply.

Converse remembers all messages that you send or receive, even if you did not use the main Converse window to send them or reply to them.

Converse lets you know as soon as a message comes in, by beeping or flashing the screen, and if it is supposed to notify you, it does so without waiting for the main Converse process to wake up. In pop-up mode, if the pop-up message window is already in use, an incoming message causes the message window to beep or flash but not to display the message. This is necessary since only one message at a time should pop up. When the message window is deexposed it is reexposed immediately with the new message in it.

If the main Converse window is exposed, a new message is shown there with its conversation; it is never shown via a notification or a pop-up message window. If the main Converse window is exposed but its process is busy (typically, when it is in the Debugger or in an editor command and waiting for typein), Converse beeps or flashes but does not display the message. You can display the message by clearing the Converse process. You can usually clear the Converse process by pressing ABORT.

12.1 Converse Commands

Converse has several commands for managing your conversations.

HELP	Displays a summary of Converse commands.
END	Sends the current message. The behavior of this key can be changed by the variable zwei:*converse-end-exits* .
c-END	Sends the current message and exits from Converse. The behavior of this key can be changed by the variable zwei:*converse-end-exits* .
ABORT	Exits Converse.
c-M	Mails the current message instead of sending it. This is useful if Converse reports that the person you want to send the message to is not logged in anywhere.
c-m-[Moves to the previous conversation.
c-m-]	Moves to the next conversation.
m-X Delete Conversation	Deletes the current conversation from the Converse window.
m-X Write Buffer	Writes the entire Converse buffer (all conversations) to a file. It prompts for a pathname.
m-X Write Conversation	

Writes only the current conversation to a file. It prompts for a pathname.

m-X Append Buffer

Appends the entire Converse buffer (all conversations) to the end of a file. It prompts for a pathname.

m-X Append Conversation

Appends only the current conversation to the end of a file. It prompts for a pathname.

m-X Regenerate Buffer

Rebuilds the structure of the Converse buffer. This might be necessary if you damage the buffer in some way, for instance by removing one of the black lines separating conversations. Some error messages might ask you to give this command and try again. The message you are currently typing might be lost, but you can prevent this by putting the text on the kill ring before issuing the **m-X Regenerate Buffer** command.

12.2 Lisp Listener Commands for Converse

zwei:qsends-off &optional (*gag-message t*)

Function

Sometimes, you might wish not to be interrupted with interactive messages. A function called **zwei:qsends-off** exists for such occasions. If you give it a string argument, *gag-message*, the variable **zwei:*converse-gagged*** is set to this string and the string is returned to anyone who tries to send a message to you. Otherwise, they just get a note saying that you are not accepting messages. **zwei:qsends-on** toggles **zwei:*converse-gagged***.

zwei:qsends-on

Function

After using **zwei:qsends-off** to notify interactive message senders that you are not accepting messages, **zwei:qsends-on** allows interactive messages to be received again.

chaos:notify-local-lispms &optional (*message*)

Function

(**zwei:qsend-get-message "all lisp machines"**)

Sends *message* to all Lisp Machines at your site based upon information it gets from the namespace database about the Lisp Machines at the local site. *message* should be a string; if it is not provided, the function prompts for a message. Each recipient receives the message as a notification, rather than as an interactive message.

qsend &optional *destination message* *Function*

Sends interactive messages to users on other machines on the network.

destination is normally a string of the form "*name@host*", to specify the recipient. If you omit the *@host* part and just give a name, **qsend** looks at all of the Lisp Machines at your site to find any that *name* is logged into; if the user is logged into one Lisp Machine, it is used as the host; if more than one, **qsend** asks you which one you mean. If you leave out *destination* altogether, doing just (**qsend**), Converse is selected as if you had pressed SELECT C.

message should be a string. If it is omitted, **qsend** asks you to type in a message. You should type in the contents of your message and press END when you are done.

The input editor is used while you type in a message to **qsend**. So you get some editing power, although not as much as with full Converse (since the latter uses Zwei). See the section "Using the Input Editor". This function predates Converse and is retained for compatibility.

print-sends &optional (*stream standard-output*) *Function*

Prints out all messages you have received (but not messages you have sent), in forward chronological order, to *stream*. Converse is more useful for looking at your messages, but this function predates Converse and is retained for compatibility.

qreply &optional *text* *Function*

Sends a reply to the Converse message received most recently. You can supply a string as the text of the message or omit it and let **qreply** prompt for it. It returns a string of the form "*user@host*", indicating the recipient of the message. This function predates Converse and is retained for compatibility.

13. Customizing Converse

The following variables allow you to customize Converse's behavior. You can set them in your init file.

- zwei:*converse-mode*** *Variable*
Controls what happens when an interactive message arrives. It should have one of the following values:
- :pop-up** (This is the default.) A message window pops up at the top of the screen, displaying the message. You are asked to type R (for Reply), N (for Nothing), or C (for Converse). If you type R, you can type a reply to the message inside the message window. When you type END, this reply is sent back to whomever sent the original message to you, and the pop-up message window disappears. If you type N, the message window disappears immediately. If you type C, the Converse window is selected. The input editor is used while you reply to a message in the pop-up message window, so you get some editing power, although not as much as with full Converse (since the latter uses Zwei). See the section "Using the Input Editor".
 - :auto** The Converse window is selected. This is the window that shows you all of your conversations, letting you see everything that has happened, and letting you edit your replies with the full power of the Zwei editor. With this window selected, you can reply to the message that was sent, send new messages, participate in other conversations, or edit and write out messages or conversations. You can exit with c-END or ABORT (c-END sends a message and exits; ABORT just exits), or you can select a new window by any of the usual means (such as the FUNCTION or SELECT keys).
 - :notify** A notification is printed, telling you that a message arrived and from whom. If you want to see the message, enter Converse by pressing SELECT C. There you can read the message and reply if you want to.
 - :notify-with-message** A notification is printed, which includes the entire contents of the message and the name of the sender. If you want to reply, you can enter Converse.

zwei:*converse-append-p**Variable*

If the value is **nil** (the default), a new message is prepended to its conversation. If the value is not **nil**, a new message is appended to its conversation. **print-sends** is not affected by this variable; it always displays messages in forward chronological order.

zwei:*converse-beep-count**Variable*

The value is the number of times to beep or flash the screen when a message arrives. The default value is two. Beeping or flashing occurs only if the Converse window is exposed or if the value of **zwei:*converse-mode*** is **:pop-up** or **:auto**. (Otherwise, notification tells you about the message and includes the usual beeping or flashing.)

zwei:*converse-end-exits**Variable*

Controls the behavior of **END** and **c-END**. If ***converse-end-exits*** is set to **nil**, the default, **END** sends the message and you remain in Converse. **c-END** sends the message and exits Converse. Setting ***converse-end-exits*** to **t** reverses this, so that **c-END** sends the message and remains in Converse and **END** sends and exits.

PART III.

Symbolics Store-and-Forward Mailer

14. Overview of the Mailer

The Mailer is a program that provides mail forwarding and delivery services to users at a site. It is a *store-and-forward* mailer, meaning that when no network connection can be made to the receiving machine, it saves the mail and retries the transmission until it is successful. In other words, store-and-forward mailers guarantee, within reason, that mail transmissions are reliable regardless of the state of the network when a user sends or replies to a message.

The Mailer may be installed at one or more hosts at your site, which then act as *mail servers* on the local network. Like other services, it is invisible to users, who use the Zmail program to read and send their mail. The Mailer will be selected as the mail service if it is operating on the network, but its presence will not be apparent to a Zmail user. The Mailer must be explicitly installed and configured on a Symbolics machine acting as a mail server. See the section "Installing and Configuring the Mailer".

The features provided by the Mailer are as follows:

- Delivery of mail to user in boxes
- Local delivery of mail to archive files
- Special handling of hardcopy mail (for users who prefer their mail in printed form)
- Support for mailing lists
- Alternative delivery paths
- Transaction logging

15. Mailer Functions

The Mailer is operated by a set of functions in the **mailer:** package.

mailer:launch

Function

This function "cold boots" (initializes) the Mailer, if the Mailer is not running; otherwise, it prints an error message. The Mailer discards all of its important state from virtual memory and restores all of it from the file system. The function is invoked by **si:enable-services**, which in turn is invoked whenever the machine is warm booted or cold booted; that is how the Mailer is "automatically" started when a world saved with the Mailer loaded is later booted.

mailer:relaunch

Function

This function "warm boots" the Mailer, if the Mailer is not running; otherwise, it prints an error message. The Mailer assumes that its state in virtual memory is valid and resets and enables the foreground process. The foreground process is responsible for restarting the other processes. This function is only invoked by hand.

mailer:land

Function

This function asks all the Mailer processes to finish delivering any mail they already have queued and then to stop themselves. No new incoming mail is accepted. The function waits for all of the Mailer processes to stop and then returns. This function is invoked by **si:disable-services**.

mailer:stop

Function

This function asks all the Mailer processes to cleanly stop themselves, if the Mailer is running; otherwise, it prints an error message. No new incoming mail is accepted. This function is invoked when one of the Mailer processes encounters an unexpected error.

mailer:start

Function

This function asks all the Mailer processes to start up again, if the Mailer has been stopped; otherwise, it prints an error message. It also prints an error message if the Mailer has not yet been launched. It is meaningful only after **mailer:stop**.

mailer:disable

Function

This function immediately disables all the Mailer processes, regardless of the state of any Mailer process. No new incoming mail is accepted. This is useful for immediately stopping the Mailer if it is looping or destroying the file system. This function must be used with care, since a Mailer process might be arrested with the LMFS lock held. This function works by calling **process-disable**.

- mailer:enable** *Function*
This function enables all the Mailer processes, regardless of the state of any Mailer process. It is meaningful only after **mailer:disable** has been called. This function works by calling **process-enable**.
- mailer:update-mailbox-table** *Function*
This function forces the file mailboxes.text to be read. If this Mailer distributes forwarding tables, the function also forces new forwarding tables to be written. (See the section "Files and Directories Used by the Mailer", page 113.)
- mailer:update-forwarding-tables** *Function*
If this Mailer distributes forwarding tables, this function forces new forwarding tables to be written.
- mailer:update-options** *Function*
This function forces the file options.lisp to be read.
- mailer:hardcopy-all-mail** *Function*
This function prints all the saved hardcopy mail, for all users who receive hardcopy mail. Hardcopy mail is discarded after a number of days specified as a host option.
- mailer:hardcopy-new-mail** *Function*
This function prints all mail that arrived since the last printing, for all users who receive hardcopy mail.
- mailer:hardcopy-last-mail** *Function*
This function reprints the mail that was just printed, for all users who receive hardcopy mail. It is useful after a printer failure.
- mailer:hardcopy-all-mail-for-user** *user* *Function*
This function prints all the saved hardcopy mail for the designated user. Hardcopy mail is discarded after a number of days specified as a host option.
- mailer:hardcopy-new-mail-for-user** *user* *Function*
This function prints all mailed that arrived since the last printing, for the designated user.
- mailer:hardcopy-last-mail-for-user** *user* *Function*
This function reprints the mail just printed, for a designated user. It is useful after a printer failure.

16. Files and Directories Used by the Mailer

The Mailer operates by using several files stored on the file system (LMFS) of its server machine. Files in the directory >Mail>Dynamic> are read and written by the Mailer only. It is the only place where mail of any kind is written, and it is not backed up. Files in >Mail>Static> record customizations that pertain to your site and are prepared during the Mailer installation procedure. (See the section "Installing and Configuring the Mailer" in *Installation and Site Operations*.) Files in the static directory include log files and failed mail; this directory is backed up.

>Mail>Static>Options.lisp

This file records options that customize the Mailer's operation; for instance, one option controls the timing of deferred delivery of mail that is to be sent over telephone lines. (See the section "Symbolics Dialnet" in *Networks*.) The file is kept here so that the Mailer can be initialized (with **mailer:launch**) even if the sys host is unavailable. You create its initial version when you configure the Mailer on a particular host. The Mailer starts, and this file is read, when a world saved with the Mailer is loaded and services are enabled, or when the Mailer is manually loaded started (for example, by a File-Server init file).

>Mail>Static>Mailboxes.text

This file defines mailing lists and delivery paths for mail handled by this server. You create its initial version when you configure the Mailer on a particular host.

>Mail>Dynamic>Forwarding.text

Forwarding files are written by the Mailer. They are for use at sites with multiple mail servers. One mail server sets up (for example, via the File-Server init file) a list of hosts for which it should write forwarding tables. It writes these forwarding tables whenever its Mailer is booted, or whenever its mailboxes.text file changes.

>Mail>Dynamic>*.mail

These files hold actual messages being processed.

>Mail>Dynamic>*.work

These files are working files created and managed by the Mailer. One is created for each *.mail file. These files record information about the message's recipients, and they are processed in such a way as to prevent a message's being sent twice to the same recipient if the Mailer fails during a transmission to several hosts.

The following options can be set with **setq** forms in your >Mail>Static>Options.lisp

file; the initial version of this file is set up when you configure the Mailer on a mail server (See the section "Installing and Configuring the Mailer in *Installation and Site Operations*".):

mailer:network-bad-gateways

A list of hosts and/or (host network) pairs that should be avoided as gateways. All host and network names are strings.

mailer:forwarding-table-hosts

A list of host objects to which to write forwarding tables. (This option is usually set in a server's init file rather than in the options file; see the example later in this section.)

mailer:log-file-retention-count

A number giving the generations of old log files to keep.

mailer:hardcopy-mail-retention-count

A number giving the generations of old hardcopy mail to keep.

mailer:deferred-delivery-times

A value that specifies how to handle "deferred" mail (for instance, mail that you allow to accumulate for transmission with Dialnet, during a single phone session). **nil** means "never make deferred deliveries; wait for the connection to be opened from the other end." **t** means that mail should be delivered as soon as possible (that is, deferred delivery is disabled). An interval, such as "8 hours", can be specified, meaning to deliver deferred mail at that interval. Finally, a list of times can be specified, for deferred delivery at these times, for example: `'("10:10pm" "6:45am" "2:30pm")`.

mailer:deferred-receipt-hosts

A list of host objects to probe for incoming mail.

mailer:deferred-receipt-times

A value that specifies when to probe deferred-receipt hosts. **nil** means never, a time interval specifies how often, or a list of times gives specific times of day, as with **mailer:deferred-delivery-times**.

mailer:notify-hosts

A list of hosts (symbols) to notify when mailer errors occur.

mailer:failed-mail-reply-mail

A value other than **nil** means to send mail about failed mail to the mail's originator.

mailer:failed-mail-reply-file

A value other than **nil** means to copy failed mail to a special log file.

For instance:

```
;;; -*- Mode: LISP; Package: MAILER; Base: 10; Syntax: ZetaLisp -*-
```

```
(setq mailer:deferred-delivery-times t) ;; send dial mail immediately  
(setq mailer:failed-mail-reply-file t) ;; archive failed mail
```

Here, the deferred-delivery feature is disabled, and failed mail is archived in a special log file.

17. What to Do When the Mailer Crashes

If a Mailer process encounters an error it is not expecting to catch, a top-level error handler sends a stop message to all the Mailer processes. If all of the processes, except the one which is now in the debugger, are running normally, they enter a wait state in which they do nothing except wait for a start command from **mailer:start**. Incoming mail connections are refused.

In addition to the usual restart handlers, two are offered by the Mailer. One "warm boots" the Mailer, which is the same as calling **mailer:relaunch**, and the other "cold boots" the Mailer (reinitializes its from the file system), which is the same as calling **mailer:launch**. You should not reboot the Mailer unless you have identified the cause of the problem and you believe that it will not happen again. It is always safer to cold boot the Mailer than to warm boot it. If you are certain that the virtual memory state of the Mailer is consistent, then you can warm boot the Mailer, which will be faster. When in doubt, cold boot the Mailer.

If the Mailer crashes when trying to read one of the .Mail files or deliver a message, then rename the offending .Mail and .Work files, and cold boot the Mailer. The .Mail and .Work files are stored in >Mail>Dynamic>.

To flush a queued but not yet delivered message, first invoke **mailer:stop**, then rename or delete the .Mail and .Work files, then invoke **mailer:launch**.

It does not work to delete or rename a .Mail file while the Mailer is running; the Mailer will err.

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